

STRIPS COMPUTED ACCORDING TO THE DIRECTION IN WHICH THE FLIGHT WAS MADE. UNDER THESE CIRCUMSTANCES THE PRECISION OF THE SOLAR NAVIGATOR SHOULD BE VERY GOOD AS AN ALTITUDE MAY BE SELECTED AT WHICH THE AIR IS SMOOTH AND A TIME OF DAY SELECTED AT WHICH THE INSTRUMENT IS AT ITS MAXIMUM EFFECTIVENESS. IN OTHER WORDS, THE METHOD OFFERS A MEANS OF TRIANGULATION WITH ANGLES THAT CAN BE DEPENDED UPON WITHIN 15 MINUTES. IF GREATER ACCURACY IS DESIRED THREE OR MORE LINES MAY BE FLOWN TO INTERSECT AT A COMMON POINT AND THE MEAN THUS DETERMINED SHOULD PROVE ACCURATE ENOUGH FOR MOST INACCESSIBLE AND UNCHARTERED REGIONS.

THIS METHOD ALSO AFFORDS SOME INTERESTING POSSIBILITIES AS A MILITARY METHOD OF ESTABLISHING CONTROL BACK OF THE ENEMY LINES.

TENTATIVE STATEMENT OF LIBRARIES IN AERIAL PHOTOGRAPHY

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THE NEED FOR A STATE LIBRARY OF AERIAL PHOTOGRAPHS MAY BE DEMONSTRATED BY THE STORY OF THE FLORIDA STATE MAPPING PROJECT AND ITS USE OF AERIAL PHOTOGRAPHS. UNDER SEVERAL NAMES AND AUTHORITIES THE SURVEYS ON WHICH THE MAPPING PROJECT IS BASED HAVE BEEN IN OPERATION FOR ABOUT THREE YEARS. THEY ARE BASED ON TRIANGULATION, TOPOGRAPHICAL MAPS AND LAND SURVEYS, UNDER U. S. DEPARTMENTS OF COMMERCE, INTERIOR, WAR AND OTHERS, AND ARE USING ALL THE INFORMATION OBTAINABLE FROM THEM AS WELL AS STATE, COUNTY AND RELIABLE PRIVATE AND CORPORATION SURVEYS.

FLORIDA HAS BEEN RATHER FORTUNATE IN THE AMOUNT OF AERIAL PHOTOGRAPHY COVERING PORTIONS OF ITS AREA. THE DEPOSITORIES OF THESE PHOTOGRAPHS ARE NUMEROUS AND THEIR NAMES ARE NOT ALWAYS MATTERS OF PUBLIC INFORMATION, AND HAVE BEEN PICKED UP LARGELY THROUGH PRIVATE DATA.

A PARTIAL LIST COVERING SERIES OF PHOTOGRAPHS IN EXISTENCE BUT AVAILABLE AT PRESENT ONLY THROUGH COMMERCIAL PHOTOGRAPHING OFFICES OR VARIOUS OFFICIAL DEPARTMENTS FOLLOWS. IT IS PROBABLY NOT COMPLETE AND DOES NOT ATTEMPT TO COVER PHOTOGRAPHS WHICH ARE NOT REDUCIBLE TO SCALE AND MAY NOT COVER ALL SCALE PHOTOGRAPHS AS INFORMATION REGARDING SOME SUCH HAS NOT LEAKED OUT.

MIAMI CITY: TAKEN FOR CITY BY COMMERCIAL COMPANY.

LAKELAND CITY: TAKEN FOR CITY BY COMMERCIAL COMPANY.

JACKSONVILLE: VARIOUS SOURCES, PRIVATE AND OFFICIAL.

COLLIER COUNTY: TAKEN FOR PRIVATE CORPORATIONS BY COMMERCIAL COMPANY.

OTHER CITIES AND DISTRICTS OF SMALL AREA FROM VARIOUS SOURCES.

U. S. COAST & GEODETIC SURVEY: ON ATLANTIC AND GULF COASTS, USED FOR LOCATIONS AND TOPOGRAPHY ON COAST CHARTS. ON ACCURATE SCALE.

U. S. ENGINEER CORPS, U. S. ARMY: STRIP PHOTOGRAPHS, 3-LENS CAMERA, AVAILABLE THROUGH AERIAL PHOTOGRAPHIC LABORATORIES AT WRIGHT FIELD, DAYTON, OHIO, AND MAXWELL FIELD, MONTGOMERY, ALABAMA. REDUCIBLE TO USABLE SCALE. THE

STRIPS FOLLOW VARIOUS PROPOSED LOCATIONS FOR THE GULF-ATLANTIC WATERWAY.

U. S. GEOLOGICAL SURVEY: AREA PHOTOGRAPHS OF SEVEN GEOLOGICAL SURVEY QUADRANGLES TAKEN BY COMMERCIAL COMPANY AND PROBABLY AVAILABLE FROM IT. REDUCIBLE TO ACCURATE SCALE BY USE OF CONTROL SURVEYS OF FLORIDA STATE MAPPING PROJECT. PHOTOGRAPHS OF SHORES OF LAKE OKEECHOBEE.

FLORIDA STATE HIGHWAY DEPARTMENT: PHOTOGRAPHS OF AVIATION FIELDS. PHOTOGRAPHS OF PROPOSED LINES OF HIGHWAY FROM WHICH TO CHOOSE ROUTES FOR LOCATION SURVEYS. AVAILABLE FROM THE DEPARTMENT.

SOIL EROSION MAPS FROM AERIAL PHOTOGRAPHS FOR THE SOIL CONSERVATION SERVICE, GRACEVILLE, FLORIDA OFFICE AND WASHINGTON.

NUMEROUS PRIVATE PHOTOGRAPHIC SURVEYS OF COMPARATIVELY SMALL AREAS, SOME OF WHICH IT MAY BE POSSIBLE TO REDUCE TO SCALE WHERE THERE IS SUFFICIENT CONTROL. FEW OF THESE HAVE BEEN LOCATED DEFINITELY BUT WOULD FIND THEIR WAY TO A STATE AERIAL PHOTOGRAPH LIBRARY IF IT WERE IN EXISTENCE.

IF THE COPIES OF THE PHOTOGRAPHS USED BY THE MAPPING PROJECT COULD BE FILED IN THE STATE AERIAL PHOTOGRAPHIC LIBRARY THEY WOULD BE AVAILABLE EASILY AND CONTINUALLY. THE TIME SPENT IN FINDING MATERIAL IN A FIELD KNOWN TO VERY FEW CAN BE GREATLY REDUCED BY THE FACILITIES OF AN AERIAL PHOTOGRAPH LIBRARY.

A PLACE FOR MAKING COPIES OF PHOTOGRAPHS, MAPS AND DOCUMENTS WOULD BE A NECESSITY FOR FULL SERVICE TO THIS KIND OF LIBRARY. FLORIDA IS FORTUNATE IN HAVING A PHOTOGRAPHIC LABORATORY IN THE STATE UNIVERSITY. MANY TIMES IT WOULD BE ADVISABLE TO LOCATE THE LIBRARY WHERE SUCH FACILITIES ARE AVAILABLE COMMERCIALY IN CASE IT IS NOT POSSIBLE TO MAKE THEM AN ADJUNCT OF THE LIBRARY.

THE POSSIBILITIES OF GENERAL ESTABLISHMENT OF STATE PHOTOGRAPHIC LIBRARIES ARE NOT VERY PROMISING. IF THE STATE UNIVERSITY OR A STATE DEPARTMENT WHOSE FIELD IS AGRICULTURE, ENGINEERING, STATE PLANNING, STATE MAPPING AND THE LIKE, THE LIBRARY COULD BE STARTED IN SUCH DEPARTMENT WHILE BEING POPULARIZED. WHEN SIZE AND RECOGNITION OF IMPORTANCE DEMAND, THE LIBRARY CAN BE MADE A SEPARATE OFFICE OR DEPARTMENT. SO MUCH OF THE DAILY SERVICE ASKED OF SUCH A LIBRARY WOULD BE INDIVIDUAL IN CHARACTER THAT A METHOD OF OBTAINING SUITABLE COMPENSATION FOR WORK DONE SHOULD BE DEVISED. WORK FOR OTHER STATE DEPARTMENTS AND OFFICES WOULD BE JUSTIFICATION FOR STATE APPROPRIATIONS FOR SUSTAINING THE DEPARTMENT, INCLUDING QUARTERS IN A SEPARATE BUILDING WHEN INCREASE IN USE OF THE LIBRARY DEMANDS. A PHOTOGRAPH LIBRARY WILL REQUIRE MUCH SPACE PER ITEM FILED AND MUCH SPACE FOR CONSULTING AND USING PHOTOGRAPHS. REPRODUCTION OF THE RECORDS PROBABLY WILL TAKE THE PLACE OF BOOK BORROWING AND SHOULD BE DONE UNDER THE CONTROL OF THE LIBRARIAN, WHETHER DONE IN THE LIBRARY'S PHOTOGRAPHIC LABORATORY OR BY A COMMERCIAL ADJUNCT. THE LABORATORY WOULD CORRESPOND TO THE BINDERY ATTACHED TO MANY BOOK LIBRARIES.

A FEW STATES WOULD FIND CONSIDERABLE SUPPLIES OF MATERIAL FOR DEPOSIT IN STATE AERIAL PHOTOGRAPH LIBRARIES, EITHER AS DONATIONS OR AS LOANS OR BY MAKING FILING COPIES. THEY WOULD REQUIRE CONSIDERABLE SPACE WITH SPECIAL FILING FACILITIES AND TABLE SPREAD, EXTENDING TO DRAFTING AND REPRODUCTION FACILITIES AND OTHER SERVICES. REPRODUCTION, COPYING BY DRAFTING OR OTHERWISE, REDUCTIONS AND ENLARGEMENTS, DUPLICATING RECORDS NOT REMOVABLE FROM THE LIBRARY MAY REQUIRE MUCH SPACE. SUCH SERVICES CAN BE TURNED OVER TO PERSONS UNDER CONTROL OF THE OFFICIALS, TO BE RENDERED AS AN OUTSIDE SERVICE WITH FIXED FEES UNTIL SUCH TIME AS THE BUSINESS OF THE LIBRARY AND FUNDS AT ITS COMMAND PERMIT THE ATTACHMENT OF SUCH FACILITIES TO THE LIBRARY ITSELF.

A FEW STATES MUST START ON A SMALL SCALE AND MAY FIND IT NECESSARY TO INTEREST INDIVIDUALS, SOCIETIES AND THE LIKE IN MAINTAINING THE LIBRARY UNTIL IT HAS DEMONSTRATED ITS VALUE AND PROVED ITS WORTH TO SOME OFFICIAL ORGANIZATION TO TAKE IT OVER.

MOST OF THE STATES WILL BE SLOW IN RECEIVING THE IMPULSE TO START LIBRARIES UNTIL THE NEED OF THEM IS IMPRESSED UPON THEM BY OBSERVATION OF THEIR VALUE TO OTHERS.

IN ADVANCE OF THE DEVELOPMENT OF A LIBRARY OF AERIAL PHOTOGRAPHY A LIBRARY OR SECTION IN A LIBRARY DEVOTED TO CLASSIFIED COLLECTIONS OF MAPS WOULD BE VERY POPULAR. THE MAPPING SITUATION IN FLORIDA, FOR EXAMPLE, HAS BEEN VERY UNSATISFACTORY AND HAS NOT IMPROVED FOR YEARS UNTIL THE PRESENT LOCAL CONTROL SURVEY WAS ESTABLISHED. IF THE PROPOSED LIBRARY OF AERIAL PHOTOGRAPHY WERE ACCOMPANIED BY A DEPARTMENT OF MAPS IT COULD BEGIN BY CONSOLIDATING THE STATE AND PRIVATE COLLECTIONS INTO ONE WHICH WOULD SOON BE IN DAILY USE. THE DATA FROM WHICH TO CONSTRUCT ACCURATE MAPS ARE ADDED TO RAPIDLY AND CAN BE USED TO IMPROVE THE MAPS NOW IN EXISTENCE BUT THEY NEED THE WORK OF AN OFFICIAL DEPARTMENT TO COLLECT, VERIFY AND COMBINE THEM FOR PRACTICAL USE. THE COMBINATION MAP AND PHOTOGRAPHIC SERVICE WOULD SOON BECOME POPULAR AND THE FORMER WOULD AID GREATLY IN DEMONSTRATING THE VALUE OF THE LATTER. THE COLLECTION, CLASSIFICATION AND STORAGE OF MAPS WOULD BE MUCH LESS EXPENSIVE THAN THAT OF PHOTOGRAPHS. THE INABILITY OF THE MAPS TO SATISFY THE DEMANDS FOR ACCURACY WOULD CREATE A DEMAND FOR THE AERIAL PHOTOGRAPHS AND WOULD GREATLY ACCELERATE THEIR PRODUCTION AND THE DEMAND FOR THE PART OF THE LIBRARY PROPOSED FOR THEM.

WHILE A PROPER CLASSIFICATION OF MAPS REQUIRES CONSIDERABLE FILING AREA THE SPACE OCCUPIED FOR A WORKABLE REFERENCE SYSTEM WOULD BE MUCH LESS THAN FOR PHOTOGRAPHS OF THE SAME LAND AREAS.

THE MANY SIZES OF PHOTOGRAPHS AND THEIR COMBINATIONS INTO MOSAICS AND MAPS WILL REQUIRE MUCH FILING AREA FROM THE BEGINNING. FUTURE ACCESSIONS MAY BE SERVED FOR A TIME BY FILING ADDITIONS ON THE SAME AREAS. PHOTOGRAPHS TAKEN WITH SINGLE, 3-LENS, 5-LENS AND 2-LENS CAMERAS NEED MUCH ROOM BUT FORTUNATELY FOR A LIBRARY THE MULTIPLE LENS PHOTOGRAPHS ARE NOT OFTEN USED BEYOND 3-LENSES.

SUBDIVISIONS WOULD PROBABLY INCLUDE THE FOLLOWING IN A STATE LIBRARY:

A. GENERAL PHOTOGRAPHS TAKEN OF DISTRICTS WHICH ARE LARGE PORTIONS OF THE STATE WITHOUT MUCH REFERENCE TO COUNTY LINES. SUB-CLASSIFICATIONS BY GEOLOGICAL QUADRANGLES WOULD BE NECESSARY IN SOME SUCH AREAS.

B. COUNTY AREAS AND AREAS ALL WITHIN A COUNTY, UNDER A SINGLE PROJECT OR GROUP OF RELATED PROJECTS.

C. CITIES MAY BE FILED WITH THEIR COUNTIES OR MAY FORM A SEPARATE SUBDIVISION, PUTTING ALL CITIES INTO ONE FILE.

D. AMATEUR AND DISCONNECTED PHOTOGRAPHS MAY DISTURB CLASSIFICATIONS LESS IF FILED SEPARATELY AND THOROUGHLY INDEXED.

AS COLLECTIONS GROW, MORE SUB-CLASSIFICATIONS WILL BECOME NECESSARY. BOOKS, PERIODICALS, ADVERTISING MATTER, SAMPLES, ETC. WOULD ACCUMULATE RAPIDLY AND REQUIRE ALLOWANCE OF CONSIDERABLE SHELF AND TABLE ROOM.

OFFICE SPACE MAY BE IN THE SAME ROOM AT THE BEGINNING, TO BE SEPARATED LATER.

STATES WHICH DO NOT HAVE THE FACILITIES FOR PHOTOGRAPHING, SUCH AS REPRODUCING, REDUCING, ENLARGING AND MOSAICS WITH WHICH FLORIDA STATE OFFICE WOULD BE EQUIPPED THROUGH THE UNIVERSITY PHOTOGRAPHIC LABORATORY, MAY USE COMMERCIAL ORGANIZATIONS UNTIL GROWTH WARRANTS INSTALLING APPARATUS SHOWN TO BE DESIRABLE.

THE PICTURE OF A STATE LIBRARY JUST DRAWN TO SHOW THE DEMANDS ON WHAT

IS AN EXISTING STATE LIBRARY (EXCEPT FOR COLLECTING THE MATERIAL IN USE INTO ONE PERMANENT PLACE) GIVES SOME IDEA OF THE POSSIBILITIES FOR GROWTH OF A NATIONAL LIBRARY OF AERIAL PHOTOGRAPHY.

LIBRARIES ARE NO LONGER SHOW PLACES FOR BOOKS BUT ARE SEATS OF INTENSIVE INVESTIGATION AND RESEARCH AND OF MATERIAL FOR PRIVATE RESEARCH AND INFORMATION. THIS MUST BE TRUE WITH RESPECT TO A PHOTOGRAPHIC LIBRARY.

WHEN THE REQUIREMENTS FOR ONE STATE LIBRARY ARE MULTIPLIED BY 50 OR MORE TO INCLUDE THE MAJOR DIVISIONS OF STATES, TERRITORIES AND PROVINCES, THE PROBABLE EXTENT OF THE LIBRARY WITHIN A FEW YEARS MAY BE IMAGINED.

THE ADDITION OF QUARTERS FOR LIBRARY AND EXECUTIVE OFFICERS AND GENERAL SERVICE OF COMPUTERS, DRAFTSMEN, TRACERS, PLANIMETERS, AS WELL AS OTHER REPRODUCING PROCESSES, SUCH AS PHOTOGRAPHS, PHOTOSTATS, THE VARIOUS COLORED PRINTS, LITHOGRAPHS, ETC. ALMOST WITHOUT NUMBER, EMPHASIZE THE ULTIMATE NECESSITY OF A LARGE BUILDING ESPECIALLY DESIGNED. THIS SHOULD BE KEPT IN MIND IN DESIGNING AND OPERATING THE PRELIMINARY MACHINERY FOR STOCKING THE LIBRARY AND PUTTING IT INTO OPERATION FOR PUBLIC BENEFIT.

SUCH A LIBRARY SHOULD BE A PUBLIC LIBRARY BUILT AND SUSTAINED BY THE NATIONAL GOVERNMENT OR BY A COMBINATION OF INTERESTED NATIONAL SOCIETIES. THE PRELIMINARY EXPENSE OF STARTING THE LIBRARY AND DEVELOPING THE DEMAND FOR ADEQUATE FACILITIES WOULD NOT BE SMALL. IT MUST BE MET BY FUNDS SUBSCRIBED BY ORGANIZATIONS INTERESTED AND CARRIED UNTIL APPROPRIATIONS FOR ITS PERMANENT ESTABLISHMENT ARE SECURED.

STATE LIBRARIES MIGHT BE ESTABLISHED IN CONNECTION WITH EDUCATIONAL INSTITUTIONS OR STATE OFFICES. THEY WOULD GROW MORE SLOWLY AND DEVELOP THEIR OWN DEMAND FOR FUNDS TO SUPPORT THEM. BUT FEW STATES COULD SHOW THIS DEMAND AT PRESENT AND MANY OF THEM WOULD BE WITHOUT SUCH SERVICE INDEFINITELY.

THE EXISTENCE OF THE STATE AERIAL PHOTOGRAPH LIBRARY WOULD MAKE IT THE LOGICAL COORDINATOR OF STATE PLANNING, ENGINEERING AND OTHER SCIENTIFIC ORGANIZATIONS.

THE LIBRARY OF THE UNIVERSITY OF FLORIDA HAS A SPECIAL ROOM DEVOTED TO PUBLICATIONS RELATING TO FLORIDA WHICH HAS A RAPIDLY INCREASING NUMBER OF MAPS, PHOTOGRAPHS AND OTHER PHYSICAL DATA, WITH SOME AERIAL PHOTOGRAPHS. THE INSTITUTION COULD BE INDUCED EASILY TO BECOME THE DEPOSITORY OF AERIAL PHOTOGRAPHY.

THE MANNER OF DEVELOPMENT AND THE SPEED THEREOF DEPENDS UPON THE INTEREST AND CHARACTER OF INTEREST TAKEN BY SOME ONE CONNECTED WITH THE INSTITUTION AND WILLING TO PUT HIS TIME AND INTERESTED ENERGY INTO THE WORK.

QUITE PROBABLY THE DEVELOPMENT OF A NATIONAL LIBRARY AND OF SEVERAL STATE LIBRARIES COULD BE CARRIED ON TOGETHER THROUGH THE FORMATIVE STAGE. THEY COULD BE CONSOLIDATED WHEN THE NATIONAL LIBRARY IDEA EXPANDS ENOUGH TO WARRANT A PERMANENT HOME AND INCOME.

THE STATES REFERRED TO WOULD DOUBTLESS FIND THEIR STATE LIBRARIES IMPORTANT ENOUGH TO KEEP THEM IN OPERATION AT HOME. COPIES OF WHATEVER THE NATIONAL LIBRARY WOULD NEED COULD BE DEPOSITED THERE.