

Gazette 4-10-38 To Enter Ship Duty.

Ensign Charles Clark of the United States Coast and Geodetic Survey, who has been assigned to work in connection with the state Geology Department and its program, with the WPA, of triangulation and level work in Arkansas since 1935, left yesterday for Galveston, Tex., to enter upon ship duty with the service. His new assignment was in line with procedure of the service in rotating officers, placing them in various positions at stated intervals. Another officer will be assigned to replace Ensign Clark here.

Coast, Geodetic Survey Crew At Work Near Conway.

Special to the Gazette. 3-23-40

Conway, March 22. — Fifty-two members of a United States coast and Geodetic Survey crew, which established headquarters here this week, will remain here a month putting in first order triangulations for the army engineers in connection with flood control work along the Arkansas river. The crew started work at the mouth of the Arkansas river and will continue to a point near Tulsa, Okla. A. N. Stewart, is in charge, said his men were establishing ground control to make aerial photographing of this area more accurate. Work is done at night. The group consists of office computers, light builders, who install marks and erect temporary towers, and observing parties.

Geodetic Survey

Party Of 36 With Elaborate Outfit In North west Arkansas

12-1-40
Eureka Springs — A camp of 36 men, with 14 house trailers, 20 trucks, several tents, and with equipment for building 12 steel towers, is established on Highway 62 near Eureka Springs.

This party is known as a double observation, steel tower, triangulation party and is here to execute a short arc of triangulation in the vicinity of Centeron, Springdale and Bergman.

The towers are of demountable steel in a tripod design and are built in pairs, that is, an inner tower and an outer tower. The inside tower supports the theodolite which is used to measure the angles between stations, and the outside tower supports the observers and the lights which are pointed upon at other stations.

The group is divided into two building units of five men each; one tearing-down crew of four men; two observing parties of three men each and the necessary light keepers, an office force of accountant and computer; also camp cooks and equipment.

Triangulation, as the name suggests, is the mathematical solution of triangles and is based on the trigonometric proposition that if one side and the angles of a triangle are known, the remaining sides can be computed. Its purpose is to locate points on the earth's surface in latitude and longitude. These points are bases for the surveyor in mapping projects of any kind.

In geodetic surveying the curvature of the earth is taken into consideration and involves more complicated computation than plane surveying. However, the positions of these points can be expressed in plane co-ordinates for use in local surveys. Triangulation points thus established may be used by state, city, United States engineers, and the U. S. Geological Survey.

At the beginning of the survey the observers first locate the station latitude and longitude by astronomic observation, then select a second point and measure the distance between them with Invar tapes, and as this measurement is correct to one part in the million, this is called the base line.

The azimuth of the base line is determined from observation on the North star. The theodolite is also used. This data is used to compute the position, latitude and longitude, of the second point. In this base line as a beginning a system of triangles is set up and all angles measured, and the triangles are solved to compute distances between successive points, the computed length as carried through triangulation must agree with measured lengths of that same line within one part in fifty thousand.

Use Concrete Markers.

Concrete posts with brass tablets are put in at the triangulation points to mark the latitude and longitude. This group works in the Middle West states and spent last winter working from Pine Bluff, Ark., to Muskogee, Okla., on the Arkansas river, putting in points for the U. S. engineers and worked north in the summer to Michigan, Wisconsin, Iowa, Nebraska and Kansas. The group

is under the Department of Commerce and is called the U. S. Coast and Geodetic Survey. Men in the group are from the 14 Middle West states.

Lieut. Karl B. Jeffers from Ohio is in charge. His first assistant is Ensign William Martin of Oklahoma. Martin Z. Braden of Idaho is in charge of steel construction.

Lieutenant Jeffers said of his work that the Geodetic Survey is like the framework of a skyscraper and the topographer, who follows, is like the mason who fills in, making a complete structure. This survey does not affect boundaries or property lines previously made, but the man who has one of these marks established on his property is fortunate. By executing a short traverse to the corners of his property the latitude and longitude of the corners may be determined. Since a point on the earth's surface can have only one latitude and one longitude, any point so determined can never be lost even though the marks themselves are destroyed. These points can always be re-established from more distant surveys.

Geodetic Survey

Democrat 1-18-42
Fordyce—Lt. F. B. Quinn, Lt. R. A. Earl and Ensign W. N. Martin arrived in Fordyce this week to have charge of the United States Coast and Geodetic Survey being made in Dallas County. The party making this survey consists of about 40 men who will be located here for several weeks. The survey, which has been a government service agency since 1815, is now engaged in control surveys and mapping, important to national defense. The party came here from the Hope area.