

Woman Power in the Corps of Engineers

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SELECTIVE Service has caused a great many radical changes, perhaps none more evident than the substitution of women for men in numerous technical jobs in the Corps of Engineers. Included in the "selective service" list of jobs are such specialties as: survey engineers, geologists, radio operators and draftsmen, and architects.

Thirteen times as many women are on the civilian payroll of the Corps of Engineers, Army Service Forces, today as there were at the end of World War I.

Conspicuous among the novel work being done by women is that of the survey crew which "shoots" the contour and measures the depth of the channel of the Columbia River. Probably no one but the chief Survey Engineer of the Portland District Office, believed this vital work could be handled by women. "The work requires intensive accuracy and teamwork," he said. "The girls have proved as capable, if not more so, than the men who formerly held these same positions."

As members of the crew of the Engineer boat *SS Bonneville*, one woman operates the depth-finding machine while another tabulates these readings correspondingly with the legend of the river banks and the vernier readings of the sextant handled by a third member of the team. These recordings provide basic information for navigation charts and channel dredging operations which assure the uninterrupted flow of war transport on the Columbia.

Sitting behind the glass window of a tiny house built at the top of a fish "ladder" is another girl's "pitch" in helping win the war. With seven other girls, she records the run of some twenty-five to thirty varieties of fish—steel-heads, mackinaw, rainbow trout, muskelunge, and salmon—as part of a conservation study of the effect of Bonneville Dam on the salmon industry of the Columbia River. They count and classify as many as 100,000 fish a day.

There is something new on the Mississippi River, too. A year ago, the Vicksburg District Engineer was searching for a radio and telegraph operator to replace an inductee at the Greenville Station. In despair, he invited a typist to take the training. In less than the prescribed three months, the former typist was carrying out the job. This employee, at 21, is the Mississippi's first feminine "dot knocker." Not even the pair of silver wings she wears is a more significant clue to her interest in win-

ning the war.

From St. Paul, Minnesota, to Port Eads, Louisiana, flood control and navigation on the Mississippi are engineer responsibilities which have been assigned, in large part, to women.

At the U. S. Waterways Experiment Station, routine jobs handled by women include such high-sounding duties as: operation of the sand seepage model used in connection with the investigations of seepage under levees during high water and the design of drainage wells for controlling such seepage; determination of the maximum moisture content for the compaction of soil; gauge reading on a weir used to reproduce the flows of certain rivers; determination of the size graduation of a soil by means of hydrometer analysis; reading gauges on a small scale model of the lower Mississippi flood plain and plotting the resultant stage hydrographs; penetration tests, using hydraulic testing machine to make necessary computations; operation of pitot tube for measurement of velocities; daily evaporation measurements using wind velocity recording instruments; and wave action and silting studies to determine the extent of breakwater required.

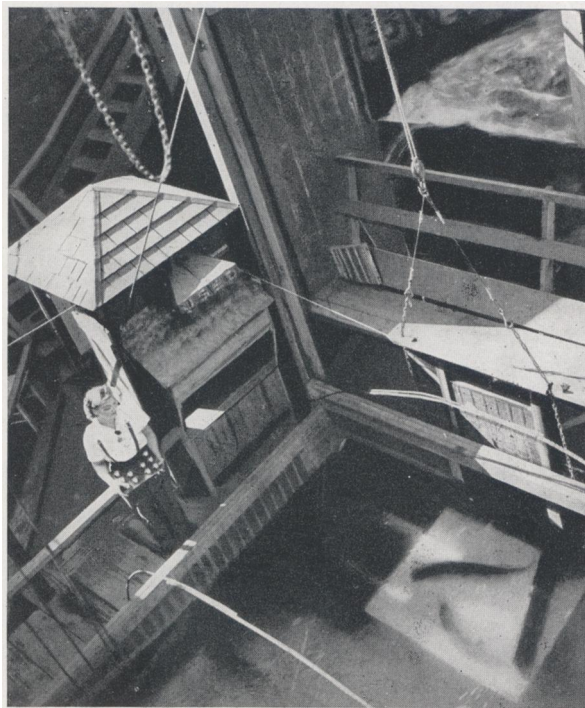
Typical of these workers is one who operates and repairs galvanometers, and is known as a "stringer." Engaged in the study of wave force against breakwaters, she uses delicate electrical equipment to measure the height and force of miniature waves striking against various sizes and types of breakwater models. When one of the fragile gauges goes "out," she knows how to replace and cement the tiny rectangular mirror, 1/20 by 1/60 of an inch, flat against the parallel strands of the new wire loop.

About thirty women are serving as plant guards at the Baton Rouge, Louisiana, Engineer Depot. Under the direction of a former Texas Ranger, these feminine engineers have shown an unusual aptitude for both marksmanship and Judo.

IN THE WASHINGTON AREA

Of the 3,151 women who work for the Engineers in the nation's capital, 2,056 are in the Office of the Chief of Engineers, with the remainder serving in the Military District of Washington.

Eleven women in the Office of the Chief of Engineers have a total job experience of more than 250 years, probably exceeding that of any equal group of officers. By long, faithful and efficient service they have attained positions of trust and responsibility.



U. S. Army

Ruby Warren, Fish Recorder, Looking into Bonneville Fishway Counting Station

For the first time in its history the Corps has two female mechanical and heating engineers. Another woman who is a Senior Engineering Aide in the Military Intelligence Division, is a specialist in geodetics. Her job is to assemble photographs and maps in answer to requests from Commanding Officers in theaters of operations.

Only 5 feet 2 inches tall, another girl works one day out of her 7 days a week in the field with a survey crew. She has moved up from "chain man" to a transit operator. The first time out, the men fell over themselves trying to help the tiny mite in jodhpurs and boots; but today, when she is on the job, she is boss, believe it or not.

Farther up the Potomac from the War Department is the site of the Army Map Service. Women pressmen, photographers, negative cutters, translators, and draftsmen by the hundreds are "swing-shifters." Working on maps, probably the most exacting and confining of all jobs, has its compensations. The windowless building is completely air-conditioned, equipped with indirect lighting, and the finest cafeteria in Washington. Every two hours, there is a fifteen minute interval of music. Soft-ball, volley ball, tennis, camera-clubs and many other recreations are sponsored by the commanding officer. Girls from China and Russia, France, and Britain work side by side with our American girls, and instead of hands across the seas, at the Army Map Service plant, it is hands across the drafting boards.

One section of the Map Research group is under the supervision of a girl graduate geologist. Charged with duties generally assigned to commissioned officers of



U. S. Army
Hanging Up Map Film Negatives to Dry at Army Map Service Photographic Laboratory

the Corps, she is doing outstanding work. After the war, she expects to resume her hobby—mountain climbing—but now, she is giving her full time and attention to the job in hand.

Farther down the Potomac with the Engineer Board at Fort Belvoir, between forty and fifty women, many of them wives of engineers serving overseas, work in the shops at the very machines their husbands left. Machinists and machinist helpers, they are trained and skilled in the use and reading of micrometers, the operation

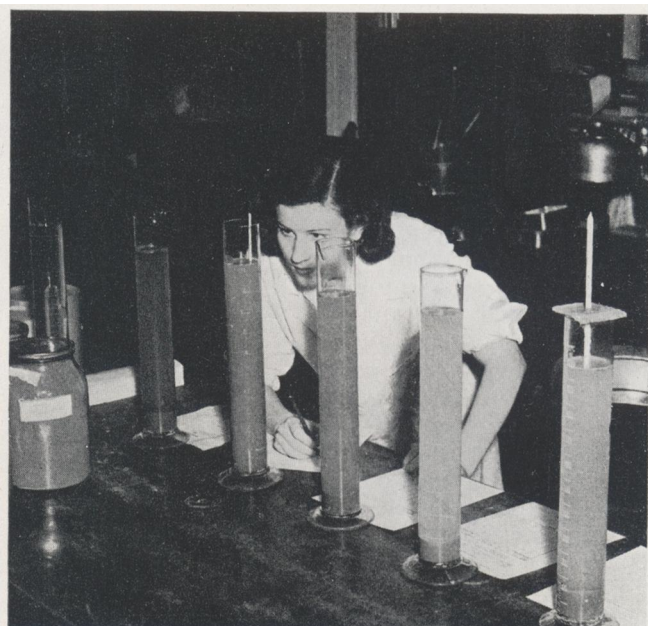
of milling machines, drill presses, lathes, planers, and power tools. One of them, physically handicapped, is the foreman of the tool room. Every tool or die is issued from her stock crib, and woe be unto the person who fails to return it in good condition AND on time.

Along the Ohio River, hundreds more women are putting in all their efforts for victory. At one of the big Engineer plants in Cincinnati, reflecting mirrors 60 inches in diameter for searchlights are produced. Made of metal, they will not shatter or break when hit by a bullet or bomb fragments. The next time you see one of those 800,000,000 candle power shafts of light piercing the sky, remember that there are a lot of girls helping to turn them out. It is not easy work; some of them drag those 160-pound hunks of beveled metal around eight hours a day. Others are polishers who are working hard to put a shine on reflectors that may mean the lives of many soldiers overseas.

This brief resumé pertains only to the work of civilian employees. The wonderful work being done by the WACS in the Corps of Engineers merits a separate article, one which can be written more appropriately when that work has been more fully developed.



U. S. Army
Miss Lucy Barney, Radio and Telegraph Operator on the Mississippi River for the Vicksburg District



U. S. Army
Miss Danella Raworth, Junior Engineering Aide, Making Hydrometer Analysis of Soil at the Waterways Experiment Station