The Second Year

A Study of Women's Participation in War Activities of the Federal Government

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A Study of Women's Participation in War Activities of the Federal Government

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Foreword

An army of over half a million women—soon, perhaps, to reach one million—is now employed in the Federal service. This civilian army comprises women in all grades and types of positions, from charwoman and laborer to the most highly trained professional, scientific, and administrative workers. Certain components of this army have entered occupations hitherto thought impossible for women; all are making contributions to the furtherance of the war effort.

It is the purpose of this study to record the story of women Federal workers during the 12 months ended June 30, 1942. This pamphlet is therefore a sequel to *The First Year: A Study of Women's Participation in Federal Defense Activities*, which contains the story of the achievements of women Government workers during the preceding 12 months.

While it is not possible to record the entire story of the contribution of women to war work in the Federal Government, the record of their participation thus far is one of which the women of America may well be proud.

To the Directors of the 13 United States Civil Service Regions, and to officials of many of the agencies of the Government, grateful acknowledgment is made for an abundance of facts regarding the employment of women in Federal establishments in all parts of the country.

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War Becomes the Business of Women

SHORTLY AFTER Pearl Harbor, a woman mechanic helper in the assembly section of the Springfield, Mass., Armory received a certificate of merit for "outstanding performance, ability, and cooperation in line of duty which has resulted in expediting production of the M1 rifle."

In shop 104 of the same armory, a woman inspector of ordnance, the mother of 18 children, had become a real war worker with a perfect "on-the-job" attendance record. Before going on the job, she had obtained her training in a trade school during the day, and at night she worked in a carpet factory to help support her family.

In the sheet-metal shop of the Puget Sound Navy Yard, Bremerton, Wash., a former beauty parlor operator was employed as a sheet-metal helper. In the same yard, high above the shipfitter shop, a former waitress was perched in the cab of a crane, operating the huge machine in a masterly manner. A former woman high rigger in logging operations was painting the buildings about the yard. A mother and daughter worked side by side as radial drill operators.

At Cincinnati, Ohio, women lamp lighters employed by the United States Coast Guard were attending electric battery-operated lights and oil-burning lights on the rivers which converge there.

A young woman who had specialized at college in biology and chemistry was doing a man's job as inspector of powder and explosives in the Iowa Ordnance Plant at Burlington, Iowa.

A woman, said to be the first woman engineer in the United States Army Signal Corps, was on the job as a radio-telephone operator at Fort Monmouth, N. J.

These are only some instances of the unique and picturesque work performed in 1942 by thousands of women civil-service employees in the Government's navy yards, arsenals, ordnance plants, and other military establishments.

By June 1942, the demands, first of the defense program and, after Pearl Harbor, of the war effort, necessitated the employment of 558,279 women in the Federal civil service, as compared with 266,407 in June 1941. This army of over half a million women represents an increase of 110 percent in 12 months in the number of Federal positions held by women, as compared with an increase of 49 percent in the number held by men and of 61 percent in the total number of Federal employees. The much larger proportionate increase in the number of women shows their employment was releasing men for military duty in substantial numbers.

In the First World War, civilian employment in the executive branch of the Government had reached a total of 917,760 employees at the signing of the Armistice on November 11, 1918. Just how many were women has never been fully determined, but it has been established that in the 2 years of the war period women received nearly 75 percent of the appointments to Washington. In the field branches of the Federal service, the proportion was about 1 woman to 2 men.

After the First World War, the ranks of Government workers were gradually reduced, and the number of women employees decreased accordingly (82,180 women employees on June 30, 1925). Only a gradual increase occurred during the next few years (88,856 in June 1930), followed in the next 5-year period by a vast emergency expansion in Government functions and a further increase in the number of women employees (120,777 in June 1935).

Then came the rearmament program (1940). Government and industry applied this principle: Employ more women in jobs which, because of the withdrawal of men to the armed forces, cannot be filled by qualified men.

In June 1940 there were 186,210 women in the Federal executive civil service. In 6 months, their number had grown to 227,377, and by June 1941 there were 266,407 women workers—an increase in 12 months of more than 80,000.

A very conservative estimate placed the number of women employees in the Federal service at more than 300,000 on December 31, 1941.

When Japan attacked Pearl Harbor on December 7, 1941, production became the grand strategy of America. Production, now, was not a matter of preparedness, or of defense. Production, now, was vital—vital in the literal meaning of the word, for production must be ever greater, ever faster, to save America's life, to save the lives of America's men, who were fighting to save that life.

As the men left in steadily growing numbers for the fighting services, women took their places at the machines, whether those machines were in Government or private war factories. As new machines were installed in Government and private war plant expansion, women came to fill the new jobs. As peacetime industry was converted to war production, yet more women took their stations on the production line.

In the Federal service, the total number of women employees increased at the average rate of 43,000 a month. As already noted, there were 558,279 women in the service on June 30, 1942. They were occupying 25 percent of all Government jobs—the highest percentage in the history of the country. More and more, war came to be the daily business of women.

The largest number of women Federal employees were working in the War and Navy Departments. Between June 1940 and June 1941, those departments had increased the number of their women employees by 51,320 and 8,652,

respectively, bringing the total to more than 84,000 on June 30, 1941; by June 1942, this number had more than trebled, totaling 331,517.

Of this number, 277,249 or 84 percent were in jobs outside the District of Columbia, such as those in the Ordnance Department at Large (arsenals, proving grounds, districts, and depots), in the Engineer Department at Large, in the Chemical Warfare Service, in navy yards, in flying fields and air stations, in army camps and forts, in naval torpedo stations, and elsewhere.

They were manufacturing gas masks, working as machine-tool operators, mending flags, making uniforms, and performing research work in the field of chemical warfare gases. They were inspecting woven and knitted articles; cleaning and grinding lenses; making heavy fleece-lined suits for pilots. They served as draftsmen and as inspectors of engineering materials. They were being hired as leather and canvas goods workers, and to perform the unique duty of drop-testing and repairing parachutes. Their nimble fingers gave them skill in the manufacture, inspection, testing, and subassembly of delicate parts of time fuzes used in artillery shells.

In addition to the War and Navy Departments, many other agencies were employing women in large numbers. In the Selective Service System more than 16,000 women in the local boards and city and State headquarter offices were enrolling and checking the questionnaires of men who were being called to war. In the Office for Emergency Management 24,000 women were at work in activities related to some of the most important aspects of the war program. In the Treasury Department more than 23,000 women were employed; thousands of them—not in Washington alone, but all over the country—were speeding the sale of war stamps and bonds. And in the Department of Agriculture more than 25,000 women employees were at work, hundreds of them in professional jobs in food laboratories.

Comparative statements on the extent to which men and women were employed in all the departments and independent establishments of the Government (in the District of Columbia and outside the District of Columbia) for the fiscal years ending June 1941 and June 1942 are shown by the table on pages 6 and 7.

CIVIL EMPLOYMENT IN THE EXECUTIVE BRANCH OF THE UNITED STATES GOVERNMENT, BY SEX

June 1941 and June 1942

Department or Independent Establishment	Total Employees		In the Washington, D. C., Metropolitan Area				Outside the Washington, D. C., Metropolitan Area			
			Men		Women		Men		Women	
	June 1941	June 1942 (Estimated)	June 1941	June 1942 (Estimated)	June 1941	June 1942 (Estimated)	June 1941	June 1942 (Estimated)	June 1941	June 1942 (Estimated)
Executive Office of the President:										
Executive Staff	1,173	1,792	491	789	408	623	180	236	94	144
Maintenance Force	98	99	75	75	23	24	.....	.....	.....	.....
War Establishments:										
Office for Emergency Management [1]	3,691	46,385	1,608	10,334	1,849	12,503	141	11,648	93	11,900
Office of Censorship	.....	9,008	.....	350	.....	281	.....	3,918	.....	4,459
Board of Economic Warfare	.....	1,859	.....	862	.....	968	.....	19	.....	10
Coordinator of Information	.....	1,560	.....	422	.....	459	.....	318	.....	361
Selective Service System	16,593	26,114	102	247	287	452	5,699	8,882	10,505	16,533
Departments:										
State	7,009	6,904	712	1,378	1,072	1,056	3,973	3,237	1,252	1,233
Treasury	65,573	67,997	8,950	12,038	11,740	12,396	33,589	32,072	11,294	11,491
War	320,291	824,698	11,836	14,400	11,340	40,050	239,118	535,298	57,997	234,950
Justice	21,401	28,129	3,681	4,092	2,414	3,173	12,800	17,570	2,506	3,294
Post Office [2]	301,215	300,078	3,782	4,574	941	980	272,471	269,980	24,021	24,544
Navy	222,862	449,042	20,484	30,794	5,043	14,218	187,487	361,731	9,848	42,299
Interior	47,980	47,355	2,804	3,726	1,697	1,675	36,866	35,427	6,613	6,527
Agriculture	91,146	92,867	6,667	4,481	6,542	6,665	59,392	62,829	18,545	18,892
Commerce	23,896	24,234	6,775	4,669	6,841	7,490	9,411	9,869	869	2,206
Labor	4,579	4,945	930	637	1,486	1,605	1,405	1,884	758	819
Independent Establishments:										
Alley Dwelling Authority	156	219	102	143	54	76	.....	.....	.....	.....
American Battle Monuments Commission	95	7	17	5	3	2	72	.....	3	.....

Bituminous Coal Consumers' Counsel	51	45	30	26	21	19	.....	.....	.....	.....
Board of Governors, Federal Reserve System	470	461	245	242	203	199	22	20	.....	.....
Board of Investigation and Research	.....	136	.....	71	.....	65	.....	.....	.....	.....
Board of Tax Appeals	135	131	62	60	73	71	.....	.....	.....	.....
Civil Service Commission	6,709	7,832	1,485	1,210	2,807	3,276	863	1,531	1,554	1,815
Electric Home and Farm Authority	187	112	25	11	37	19	81	52	44	30
Employees Compensation Commission	526	529	215	15	243	16	27	228	41	270
Export-Import Bank	31	46	17	25	14	21	.....	.....	.....	.....
Federal Communications Commission	1,414	2,041	400	499	376	543	566	895	72	104
Federal Deposit Insurance Corporation	2,357	2,644	253	277	261	293	1,133	1,278	710	796
Federal Power Commission	814	870	390	391	171	183	208	248	45	48
Federal Security Agency	31,872	33,271	4,978	4,980	4,796	5,326	13,990	14,820	8,108	8,145
Federal Trade Commission	685	639	371	351	222	207	65	56	27	25
Federal Works Agency	36,945	36,053	8,014	11,050	3,537	4,035	13,362	9,810	12,032	11,158
General Accounting Office	5,461	7,401	3,439	4,660	2,022	2,741	.....	.....	.....	.....
Government Printing Office	7,119	7,717	5,712	6,192	1,407	1,525	.....	.....	.....	.....
Interstate Commerce Commission	2,799	2,644	1,350	1,195	653	617	605	652	191	180
Maritime Commission	2,157	5,314	774	1,081	487	1,223	813	2,828	83	182
National Advisory Committee for Aeronautics	1,245	2,603	48	44	42	88	1,024	2,197	131	274
National Archives	422	525	255	318	155	193	8	9	4	5
National Capital Park and Planning Commission	30	24	25	19	5	5	.....	.....	.....	.....
National Housing Agency	15,500	13,970	2,387	1,858	1,964	2,203	6,446	6,104	4,703	3,805
National Labor Relations Board	882	997	243	232	177	200	250	325	212	240
National Mediation Board	73	77	.....	28	.....	.....	38	12	35	37
Panama Canal	36,425	32,986	164	231	20	18	33,591	30,337	2,650	2,400
Railroad Retirement Board	2,213	1,806	805	10	789	8	437	1,004	182	784
Reconstruction Finance Corporation	5,010	5,664	1,132	1,971	940	1,062	1,765	1,304	1,173	1,327
Securities and Exchange Commission	1,678	1,439	841	9	463	10	265	939	109	481
Smithsonian Institution	869	845	671	653	198	192	.....	.....	.....	.....
Tariff Commission	292	320	169	186	114	125	8	8	1	1
Tennessee Valley Authority	23,006	40,867	4	4	6	6	21,678	38,509	1,318	2,348
Veterans' Administration	42,948	43,984	2,602	2,707	3,815	3,957	25,724	26,300	10,807	11,020
Other	67	.....	11	.....	16	.....	37	.....	3	.....
TOTAL	1,358,150	2,187,285	106,133	134,622	77,774	133,142	985,610	1,494,384	188,633	425,137

[1] Includes Office of Price Administration.

[2] Excludes 19,685 temporary substitutes.

The number of women employed by Federal agencies in the various Civil Service Regions is shown on page 9. A comparison of the figures for June 1942 with those for June 1941 shows that the number of women Federal employees has more than doubled in every Civil Service Region of the United States.

In the First World War the work of women in industry, particularly in the Government's industrial establishments (arsenals, navy yards, etc.), was concerned primarily with jobs which could easily be divided into simple, repetitive operations, requiring only those techniques which were adaptable to their quick, nimble fingers. Highly skilled jobs, under this system, were so divided that they could be performed entirely by *unskilled* labor.

While the same system of simple, repetitive operations is used in the employment of women in this war, women have, during the past 2 years, found many opportunities for new kinds of endeavor, particularly in the crafts of the airplane industry.

Women were being called to fill jobs in plants where "men only" had been used before—jobs in the *skilled* trades which were being vacated by *skilled* manpower on its way into the military services—jobs which had to be filled and the work continued in order to build the implements of war.

To build up the qualifications required in the performance of these jobs, many systems of training were established and utilized. Women enrolled in training courses sponsored by the U. S. Office of Education. These courses were conducted in vocational schools and colleges throughout the country.

GEOGRAPHICAL DISTRIBUTION OF WOMEN IN THE FEDERAL CIVIL SERVICE

June 1941 and June 1942

U. S. Civil Service Region	June 1941	June 1942 [1]	Increase
FIRST—Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island	9,359	19,656	10,297
SECOND—New York, New Jersey	21,590	45,372	23,782
THIRD—Pennsylvania, Delaware	17,796	37,401	19,605
FOURTH—Maryland, Virginia, West Virginia, North Carolina, District of Columbia (field-service positions)	17,778	67,566	49,788
FIFTH—Tennessee, South Carolina, Mississippi, Alabama, Georgia, Florida, Puerto Rico	21,900	46,028	24,128
SIXTH—Ohio, Indiana, Kentucky	13,869	29,156	15,287
SEVENTH—Wisconsin, Michigan, Illinois	15,577	32,705	17,128
EIGHTH—North Dakota, South Dakota, Minnesota, Nebraska, Iowa	8,584	18,018	9,434
NINTH—Kansas, Missouri, Oklahoma, Arkansas	12,117	25,409	13,292
TENTH—Texas, Louisiana	15,118	31,777	16,659
ELEVENTH—Washington, Montana, Oregon, Idaho, Alaska	8,471	17,780	9,309
TWELFTH—California, Nevada, Arizona, Hawaii	14,538	30,521	15,983
THIRTEENTH—Wyoming, Utah, Colorado, New Mexico	5,458	11,466	6,008
Departmental service [2]	77,774	133,142	55,368
On duty in foreign countries	6,354	12,282	5,928
TOTAL	266,283	558,279	291,996

[1] Estimated.

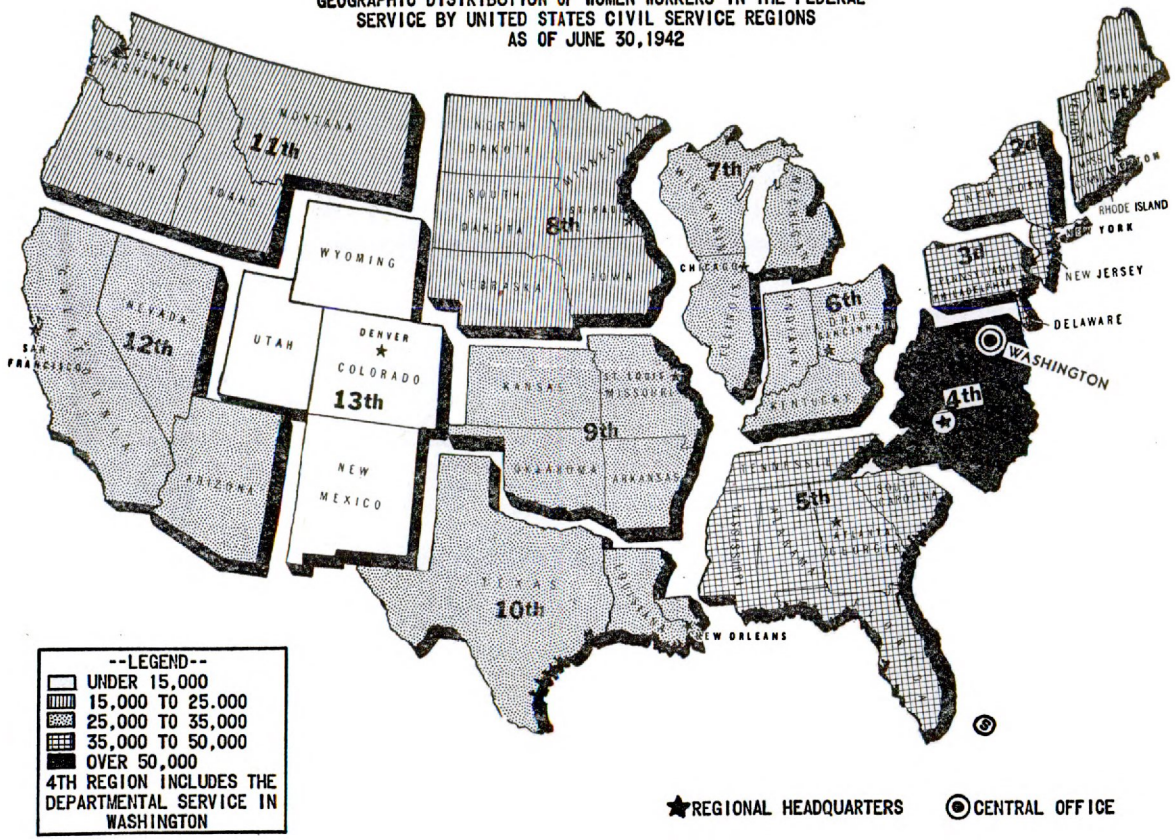
[2] Positions in the headquarters offices of agencies of the Federal Government, in Washington, D. C., and elsewhere.

In-service training courses were given by war-production plants and by Government arsenals, ordnance depots, navy yards, and air stations.

In these courses, women with some previous experience or women who had received preliminary training in a vocational school—or, indeed, women with no experience or training at all—learned by working at the side of skilled mechanics, with supplementary instruction and study under training officers. In this way, they were advanced to more difficult and responsible work, many becoming highly skilled workwomen.

War-production plants, whether Governmental or private, underwent readjustment. It was necessary to expand plant sanitation for the accommodation of women. New health and safety devices and regulations were worked out. Equip-

GEOGRAPHIC DISTRIBUTION OF WOMEN WORKERS IN THE FEDERAL SERVICE BY UNITED STATES CIVIL SERVICE REGIONS AS OF JUNE 30, 1942



ment was redesigned so that it could be more easily operated. It was felt that women should not stand while working; if it was necessary for them to stand, they stood on wooden platforms built for their comfort. Shatterproof glass windows were installed through which women might watch their machines and thus avoid flying bits of metal. Extra precautions were necessary to guard against their clothing being caught in the machines.

It was forecast in *The First Year* that the most diversified types of positions held by women in the Federal service during the emergency would be those on the production lines of the Government's armament industries. It was believed that the largest number of women war workers would be found in the arsenals, the ordnance depots, the proving grounds, and the navy yards, and on army and navy airfields. At the same time, it was predicted that the number of women then engaged in national-defense activities would seem small, indeed, in comparison to the number who would be employed in similar work in the event of a declaration of war by this country.

These predictions have come true. The number of women employees in Government war plants has grown twofold, threefold, fourfold, even in some cases tenfold, and the duties which were then unusual have now become hard, routine jobs.

What are the women doing who are now at work for the Government in these activities? Where are they doing it? How did they get their jobs? It is with this particular group of women in the country's vast mobilization of womanpower that this study is primarily concerned.

What Supervisors Think About Women Mechanics

ALMOST WITHOUT exception, officials in Government agencies speak in laudatory terms of the work performed by women in the various mechanical trades.

At first, however, some appointing officers "did not think much of the idea of hiring women for manual occupations." They were by no means enthusiastic about employing women in jobs usually held by men. They felt that friction might be caused in the shops by the replacement of men by women; that time might be lost when women first came to work because of the novelty of having them in the shops dressed in slacks. Some felt that it might be desirable to start the women at a slightly lower rate of pay than that which the men received in order to avoid dissatisfaction among the men if the women were at first assigned to lighter work at the same pay; some felt that a few "good" workers might be produced; some felt it was "experimental"; a few did not appear to think that any considerable replacement of men by women would be necessary "this year."

There were those, nevertheless, who believed that the immediate future would see a great change in the number of women employed; that there would be no limit to the part which women would take in the war program; that the question was no longer which sex was superior on the job, but which was available. They appeared willing to accept the fact that it would be necessary and even desirable to employ women wherever it was at all possible. They believed that every effort should be made to recruit and train women workers in order that they might be available to fill "critical jobs" in their plants, if these jobs were vacated by men called to military service.

In the reports received from the field on the increased use of women in skilled trades positions, especially in a "learner" or "trainee" capacity, there is every indication that (*a*) many positions formerly filled by men can be handled efficiently by women; (*b*) Government agencies are willing to employ women in any position; (*c*) women receiving the same pay as men for the same work try harder and put out more work; (*d*) objection to the use of women in positions for which they are physically and temperamentally fitted cannot be justified; (*e*) the trend to employ women as replacements where men were formerly preferred is noticeably stronger as it becomes necessary to release men in even larger numbers for service in the armed forces; (*f*) the spirit and morale of men is lifted by the infiltration of women workers; and (*g*) once the novelty of having women in the shops wears off, things get back to normal.

It is also reported that appointing officers have discovered that women are (*a*) above the average in patriotism, in interest manifested on the job, and in zeal displayed in performing their assigned tasks; (*b*) more stable, dependable, accurate; (*c*) more attentive to detail; (*d*) equal to men in many positions; and (*e*) even more proficient than men in some lines.

Most shop foremen found that women are (*a*) unusually adept at machine operations of all kinds; (*b*) proficient in precise delicate work on small parts, where manual dexterity is involved, and in repetitive operations (in one case a woman on a small assembly job turned out work at 10 times the speed of her male predecessor); (*c*) more eager to learn; (*d*) consistent in their application to the job at hand; and (*e*) more "durable" (they tire out less easily when engaged continually on one operation).

On the other hand, some shop foremen also found that women are (*a*) inferior at bench work; (*b*) slower at using a hammer and chisel, at least skillfully; (*c*) unable to fill positions requiring the physical strength of a man; (*d*) unwilling to accept appointment in some instances because of the lack

or the inadequacy of sanitary facilities; and (*e*) not so competent as men in analyzing situations, such as the procedures necessary in determining the repairs needed on a damaged instrument in an airplane, and the method pursued in making such repairs.

How Women Came Into Government War Plants

CIVILIAN EMPLOYEES for the manufactories, airfields, camps, navy yards, and other establishments of the War and Navy Departments are recruited by the field service of the United States Civil Service Commission, through its 13 United States Civil Service Regions. The huge expansion of the Federal armament plants, together with the accelerated withdrawal of their men employees into military service, resulted in a rapid succession of calls for large numbers of new women employees. To satisfy these calls as rapidly as possible, the 13 Civil Service Regions used all available lists of eligibles—not only those of persons who had qualified in examinations specifically for war-plant positions, but also those of persons who had passed examinations of quite different types, such as those for stenographer, typist, messenger, and hospital and mess attendant.

In the meanwhile, more examinations for war-plant positions were announced and women applied for these in large numbers. These examinations were for such positions as:

Laborer.
General helper.
Aircraft fabric worker.
Examiner, knitted and woven articles.
Leather and canvas worker.
Repairman, mattress and pillows.
Seamstress.
Sewer (machine and hand).
Tent repairman.
Trainee repairman, Signal Corps equipment.
Labor and materials checker.
Property and supply clerk.
Shop checker.
Machine operator: Automatic screw, broacher, driller, grinder, miller, profiler, punch press, shaver, tool grinder.
Mechanic learner (also called shop girl).
Parachute mechanic.
Gas-mask inspector.
Optical worker.
Trainee engineering aid.
Laboratory helper.

U. S. CIVIL SERVICE COMMISSION No. 10-125
(Assembled)

U. S. GOVERNMENT EMPLOYMENT OPPORTUNITIES

MECHANIC LEARNER

to fill the positions of:

MECHANIC LEARNER, NAVY DEPARTMENT $4.00 per day. See Block No. 1 below.
(For all work in excess of 40 hours per week, employees will be paid the overtime rate of time and a half.)

MECHANIC LEARNER, SIGNAL CORPS EQUIPMENT (SIGNAL CORPS) $1020 per annum. See Block No. 2 below.

MECHANIC LEARNER (AIR CORPS) $ 900 per annum. See Block No. 3 below.

MINOR ENGINEERING AID (TRAINEE-INSPECTOR) $1020 per annum. See Block No. 4 below.

OPEN TO BOTH MEN & WOMEN

(Appointments will be made at salaries mentioned above subject to a deduction for retirement purposes: 3½% to July 1, 1942, and 5% thereafter.)

NATURE OF APPOINTMENT: Appointments will be known as War Service Appointments. Such appointments generally will be for the duration of the war and in no case will extend more than six months beyond the end of the war.

DUTIES: MINOR ENGINEERING AID (TRAINEE-INSPECTOR): To inspect and test in learner capacity, at contractor plants, varied raw metallic materials, mechanical parts, castings, assemblies, and components for ordnance materials, to determine compliance with and acceptability under specifications; to prepare inspection reports and to perform related duties as required.

MECHANIC LEARNER, SIGNAL CORPS EQUIPMENT: As employees of the Signal Corps to receive instruction 8 hours a day in the fundamentals of overhaul, maintenance, repair and inspection of miscellaneous signal corps equipment, including radio, telephone, telegraph, power and light equipment. This training will include disassembly, overhaul, re-assembly, and test of Signal Corps instruments, assemblies, and sub-assemblies and related tasks as assigned. These classes may be held in the evening. Employees will not be permitted to hold any other position during this training period.

MECHANIC LEARNER: To assist (in learner capacity) skilled mechanics of higher grade in the trade or occupation to which appointee is assigned for training.

EXAMINATION REQUIRED:

1. WRITTEN TEST: Competitors will be rated on the basis of a written mechanical test, on a scale of 100. This test will consist of problems in spatial relations, arithmetic, and simple mechanics. About 3½ hours will be required for this examination.
2. PLACE OF EXAMINATION: Louisiana: Alexandria, Baton Rouge, Lafayette, Lake Charles, Monroe, New Orleans and Shreveport
   Texas: Abilene, Amarillo, Austin, Beaumont, Big Spring, Brownsville, Brownwood, Cameron, Childress, Cisco, Clarendon, Corpus Christi, Corsicana, Dalhart, Dallas, Del Rio, El Paso, Fort Worth, Galveston, Greenville, Houston, Laredo, Longview, Lubbock, Lufkin, Marfa, Palestine, Pampa, Pecos, Perryton, San Angelo, San Antonio, Shamrock, Texarkana, Tyler, Waco and Wichita Falls.
3. SEX: The department or office requesting list of eligibles has the legal right to specify the sex desired.
4. AGE AND CITIZENSHIP:
   On the date of filing application, applicants:
   a. Must have reached their 16th birthday, and
      Must not have passed their 50th birthday.
      Note: Maximum age limit will be waived for persons who furnish proof of honorable discharge from the armed forces.
      Note: In filling vacancies as a result of this examination specific age limits applicable to the department requiring employees will be observed.
   b. Must be citizens of or owe allegiance to the United States.
5. PHYSICAL REQUIREMENTS:
   Applicants must be physically capable of performing the duties of the position and be free from such defects or diseases as would constitute employment hazards to themselves or danger to their fellow employees.

Front of mechanic learner announcement for recruiting male and female trainees

PROMOTION POSSIBILITIES

1. MECHANIC LEARNER, NAVY DEPARTMENT

Selection will be made from the register resulting from this examination to fill the position of Mechanic Learner at $4.00 per day at the U. S. Naval Air Station, Corpus Christi, Texas. Persons appointed to this position, upon the successful completion of training, will be eligible for promotion without further competitive examination at increased pay to Helper Positions such as Helper, Aircraft Mechanic, General; Helper, Metalsmith; and Helper, Aircraft Instrument Maker, depending upon the trade in which they have been trained. If the services of a Helper are satisfactory, further advancement, on merit, to positions such as Aircraft Mechanic General, Aircraft Mechanic Motors, and Aviation Metalsmith, at the regular scheduled rate of pay for such journeyman positions, is possible without further competitive examination.

2. MECHANIC LEARNER, SIGNAL CORPS EQUIPMENT

The register resulting from this examination will be used to fill the position of Mechanic Learner, Signal Corps Equipment, $1020 per annum, for employment by the War Department, Signal Corps, San Antonio General Depot and Fort Sam Houston, San Antonio, Texas, and wherever needed in the States of Louisiana and Texas. Persons appointed to this position at $1020 per annum, will upon successful completion of the preliminary training course of approximately six months duration be promoted to the advanced training class at a salary of $1440 a year. Upon successful completion of the advanced training period, trainees will be eligible for Signal Corps positions at $1620 a year, the type of position depending upon the specialized field of study followed in the advanced training class.

3. MECHANIC LEARNER, AIR CORPS

Selection from the register resulting from this examination will be made for filling the position of Mechanic Learner at the San Antonio Air Depot and sub-depots of the San Antonio Air Depot located at: Baton Rouge, Lake Charles, New Orleans and Shreveport, Louisiana; Abilene, Beaumont, Genoa, Harlingen, Lubbock, Midland, Mission, San Angelo, Sherman, Stamford, Victoria, Waco and Wichita Falls, Texas. Persons appointed as Mechanic Learner at the San Antonio Air Depot or its sub-depots will be given an intensive training course in a school operated at the place of employment under the jurisdiction of the Air Corps. Persons successfully completing the training program as Mechanic Learner will be eligible for promotion to the following positions without further competitive examination: General Mechanic Helper, $1500 per annum, Junior Mechanic (Aircraft trades), $1860 per annum and Journeyman Mechanic (Aircraft trades) $2200 per annum.

4. MINOR ENGINEERING AID (TRAINEE-INSPECTOR)

Selection will be made from the register resulting from this examination for filling the position of Minor Engineering Aid (Trainee-Inspector), at $1020 per annum, for appointment in the States of Louisiana and Texas by the Ordnance Department of the War Department. Persons appointed to this position may be promoted to the position of Minor Inspector, Ordnance Material, $1260 per annum, upon satisfactory completion of a training period. (See "Statement of Duties" below.)

HOW TO APPLY:

1. File the following form with the Manager, Tenth U. S. Civil Service District, Customhouse, New Orleans, Louisiana:
   a. Application Card Form 4000 ABC.
2. Necessary forms may be secured:
   a. From the Manager, Tenth U. S. Civil Service District, Customhouse, New Orleans, Louisiana.
   b. Any first- or second-class post office in which this notice is posted.
3. Furnishing information on applications:
   a. Application forms must be fully and completely executed in accordance with instructions thereon. Failure to so execute application forms may lead to their cancellation.

Manager, Tenth U. S. Civil Service District,
Customhouse, New Orleans, Louisiana.

Issued: March 19, 1942.

Back of mechanic learner announcement

In addition to these examinations, others were held for War Department positions more traditionally occupied by women, such as forelady of laundry department, laundry assistant and operative, cook, dental surgeon's assistant, telephone operator, tabulating machine operator, and alphabetic card-punch operator.

A comparatively small number of women were able to meet the experience requirements of the examinations in the skilled- and semiskilled-trades group. Others were able to qualify by taking Government-sponsored training courses in trade and vocational schools. But the great majority of women on the Government's production lines have obtained their positions through the female trainee examinations conducted by the United States Civil Service Commission in the vicinity of the large Government industrial establishments.

As an example of the requirements for the trainee examinations, and the duties and rates of pay of these positions, an announcement of a mechanic learner examination is reproduced on pages 16 and 17; this examination was announced to secure both male and female trainees to fill vacancies in the positions of mechanic learner (for appointment in the Navy Department, in the Signal Corps, and in the Air Corps) and minor engineering aid (trainee-inspector) (for appointment in the Ordnance Department of the War Department). Similar examinations were held throughout the country. Women who attain eligibility in such examinations are appointed as trainees, and, after receiving "on-the-job" training, they are promoted to better paying positions as semiskilled and skilled workers.

Some idea of the extent to which 12 of these examinations attracted women to the Federal service may be found in the following table—compiled from data submitted by the 13 United States Civil Service Regions. The examinations were announced during the fiscal year ended June 30, 1942. (The tabulation is not complete, for complete reports were not available from all regions.)

SAMPLE DATA—WOMEN IN SUBPROFESSIONAL, SKILLED TRADES, AND LABORER EXAMINATIONS

Fiscal year ended June 30, 1942

Examination	Women applied	Women qualified
Attendant (5th, 10th Civil Service Regions)	5,982	5,559
Examiner (Knitted and Woven Articles) (3d, 5th, 10th Civil Service Regions)	2,808	957
Female Trainee (Manual Occupations) (2d, 3d, 4th, 5th, 6th, 7th, 12th Civil Service Regions)	45,568	17,381
Female Trainee (Mechanic Learner) (1st, 2d, 3d, 4th, 5th, 6th, 10th, 12th Civil Service Regions)	22,339	10,404
Helper (General) (3d, 6th, 12th Civil Service Regions)	2,474	1,428
Laborer (Classified) (2d, 3d, 5th, 6th, 10th Civil Service Regions)	14,967	6,668
Laundry Operative (3d, 5th, 10th Civil Service Regions)	13,217	10,251
Machine Operator (3d Civil Service Region)	3,122	1,985
Power Sewing-Machine Operator (2d, 3d, 5th, 10th Civil Service Regions)	9,682	6,013
Sewer Operative (hand embroideress-seamstress) (1st, 3d, 10th Civil Service Regions)	4,177	1,856
Shop Checker (3d Civil Service Region)	2,019	1,459
TOTAL	126,355	63,961

Statistics on the number of appointments made from the lists of those who became eligible for positions through participation in these examinations have not been compiled. However, the following sample data show the number of appointments made from some of the lists in certain establishments and in certain areas; they are indicative of the total appointment figures during the fiscal year 1942. It should also be kept in mind that appointments have been made continuously from these and similar lists since that time.

SAMPLE DATA—WOMEN APPOINTED FROM SUBPROFESSIONAL, SKILLED TRADES, AND LABORER EXAMINATIONS

Fiscal year ended June 30, 1942

Establishment or Region	Women applied	Women qualified	Women appointed
Picatinny Arsenal (Dover, N. J.):			
Power Sewing-Machine Operator	1,437	693	263
Laborer (Classified)	13,198	5,103	3,864
Frankford Arsenal (Philadelphia):			
Machine Operator	3,122	1,985	1,765
Fifth U. S. Civil Service Region:			
Laundry Operative	8,601	7,094	2,229
Attendant	3,553	2,983	250
Army Air Forces, California and Nevada:			
Mechanic Learner	6,218	3,079	563
Naval Air Station, Alameda, Calif.:			
Female Trainee, Manual Occupations	876	500	200
Quartermaster Depot, Philadelphia, Pa.:			
Examiner, Knitted and Woven Articles	2,214	628	227

EXAMINATIONS WHICH ATTRACTED LARGE NUMBERS OF WOMEN APPLICANTS DURING THE FISCAL YEAR ENDED JUNE 30, 1941

Examination	Women applied	Women qualified	Women appointed [1]
Apprentice, Arsenal	3,593	3,304	173
Attendant	5,028	3,565	131
Gas-Mask Assembler	1,752	1,131	738
Hospital Attendant	5,995	4,225	415
Laborer (Classified)	7,933	7,492	2,641
Laundry Assistant	3,520	2,109	509
Laundry Operative	8,352	6,964	1,424
Machine Operator	3,741	2,565	956
Manual Occupations, Trainee	2,278	1,708	.....
Mechanical Fuze Operator	1,458	554	199
Mess Attendant	4,122	2,732	329
Operator's Helper (Clothing Factory)	5,189	3,614	492
Power Sewing-Machine Operator	19,056	13,470	3,755
TOTAL	72,107	53,433	11,762

[1] Thousands of additional appointments were made from these lists after the close of the fiscal year (June 30, 1941).

It appears from a comparison of these tables that women are more interested in munitions jobs than in the more familiar jobs connected with feeding, clothing, and equipping the army. In all probability, the higher wages paid munitions

workers influence the interest trend to a great extent. But it also may be believed that patriotism, the glamor of being "closer to the war," and the opportunity to break away from "women's work" contribute more to the desire to handle bullets than does the thought of financial advantage.

Women Mechanics in Government War Work

WAR DEPARTMENT

ORDNANCE DEPARTMENT AT LARGE

THE ORDNANCE DEPARTMENT AT LARGE designs, makes, or has made, stores, and distributes to the armed forces the guns, ammunition, and ordnance materials necessary to wage war. The work of the department is carried on in the Government's manufacturing arsenals (where munitions are designed and manufactured), at its "proving grounds" (where all such material must meet a standard test for durability and accuracy), and in its supply depots (where the materials are stored pending distribution).

In time of war, these facilities become taxed, and must be greatly extended by the enlargement of ordnance plants. In addition, contracts are let through the 14 ordnance procurement districts of the department to private plants for the manufacture of guns, powder, shells, bombs, and tanks.

On June 30, 1942, there were approximately 50,000 women workers on jobs in the Ordnance Department at Large, War Department, outside of the District of Columbia.

Notwithstanding women's limitation in strength and technical training, ordnance officials are constantly seeking, through training programs, to bring more and more female employees into the department's arms-production work.

On June 30, 1940, around 3,000 women civilian employees were at work in ordnance field establishments. On June 30, 1941, the number was 10,000. During the next 12 months, an increase of 40,000 took place.

The great majority of these women were secured through trainee examinations held by the United States Civil Service Commission to secure eligibles for these positions:

Trainee Positions

Minor engineering aid	$1,020 a year.
Munitions handler	$3.92 a day.
Trainee draftsman	$1,020 a year.
Operative, mechanical fuze	$3.60 a day.
Inspector trainee, ordnance material	$1,440 a year.
Mechanic learner	$0.50 an hour, or $900 to $1,080 a year.
Subinspector (ammunition)	$3.92 to $4.88 a day.
Arsenal apprentice	$3.12 a day.
Operator, machine, general	$4 to $4.96 a day.
Mechanic's helper	$4.72 to $5.76 a day.
Inspector, powder and explosives	$1,620 to $2,600 a year.
Precision optical worker	$4.24 to $5.20 a day.
Machine operator, graduating and engraving	$4.24 to $5.20 a day.

Nontrainee Positions

Classified laborer	$3.52 a day.
Power sewing-machine operator	$3.60 to $3.84 a day.
Shop checker	$4.32 a day.
Storekeeper	$2,000 a year.

The rates of pay for many of these positions differ in various localities, depending upon the wage rates prevailing in the localities.

Arsenals

About 20,000 women, or two-fifths of the 50,000 women employed by the Ordnance Department at Large, were at work in manufacturing arsenals on June 30, 1942, whereas only 6,000 women were at work in the arsenals on June 30, 1941.

The following résumés of reports by officials of the individual armories, arsenals, and proving grounds reveal more vividly than any general statements can the work, progress, and abilities of the women in these plants.

At the Springfield (Mass.) Armory, out of a total of approximately 2,000 women workers on June 30, 1942 (255 on June 30, 1941), more than 1,500 women were at work in the armory shops. Among them were:

(*a*) Assemblers, engaged in repetitive work on the assembly of minor units involving a small number of parts or standardized methods.

(*b*) Benchwomen, engaged in repetitive work involving miscellaneous filing and burring of outside surfaces, and other surfaces not requiring close tolerances.

(*c*) Mechanical helpers, assisting assemblers in the assembly of minor units requiring no fitting or adjusting.

(*d*) Storekeepers, filling storage bins with a variety of small-arms components from standard packages, and drawing specified quantities of components from storage for delivery to packers.

(*e*) Laboratory aids, testing and calibrating various gages and delicate measuring instruments, making calculations, and submitting reports.

(*f*) Material keepers, engaged in storing, arranging, and issuing various components and the raw materials used in connection with their manufacture; and keeping accurate records in the accounting of stores.

(*g*) Mechanic learners, assisting, in a learner capacity, mechanics of higher grades in the performance of miscellaneous manufacturing and repair work.

(*h*) Machine operators:

Drillers, operating hand or power-feed drill presses using simple jigs. (Tooling, speeds, and feeds are prescribed. However, these drillers may change and adjust cutting tools for simpler jobs. Highly repetitive work is required to medium tolerances.)

Millers, operating the simplest automatic or hand milling machine operations on light to medium weight components to medium and coarse tolerances. (Fixtures, tooling, speeds, and feeds are prescribed and set-ups and tool changes are made by others. Highly repetitive.)

Punch-press operators, on small to medium-sized work, including forming, blanking, and piercing. (Set-ups and adjustments are made by others. May include use of

automatic-roll and dial-feed mechanisms, as required. Highly repetitive.)

Tool grinders, grinding simple surfaces encountered in ordinary cutting tools. (Repetitive work is done under some supervision on tools such as plain milling cutters or simple shank cutters.)

(*i*) Packers, counting and packing all types of small parts and assemblies in cartons or cases. (A knowledge of part names is required for accuracy in counting and record keeping.)

(*j*) Shop checkers, keeping records of all components, forgings and stock entering the woman worker's particular manufacturing section, and counting material issued to and received from each machine operator.

(*k*) Shop inspectors, making highly repetitive dimensional inspection of small arms components by means of plug, ring, snap, and other fixed gages.

Most unusual as women's jobs, in the view of armory officials, are those of laboratory aid and toolgrinding-machine operator. One woman is a machine woodworker.

At the Watertown (Mass.) Arsenal 102 women have been appointed as female trainees in the mechanical trades. However, a total of 480 women were employed at the arsenal on May 30, 1942 (251 a year before). All, with the exception of the female trainees, are on jobs commonly filled by women, such as clerk, stenographer, typist, metallurgical laboratory worker, storekeeper, elevator operator, and charwoman.

On May 30, 1942, the Watervliet (N. Y.) Arsenal had 536 women employees on jobs in the "shop" classification (benchwork, assembly, and inspection) which were formerly handled exclusively by men (185 women a year before). The great majority were mechanic learners, tool keepers, and laboratory aids.

On March 14, 1942, a group of 12 girls were appointed as laboratory aids to be trained in the duties of gage checkers. These girls rapidly developed to the point where they were able to check rather complicated gages. Twelve female apprentice draftsmen were in training to become full-fledged

shop draftsmen. Women are being trained to run most of the machines operated by men.

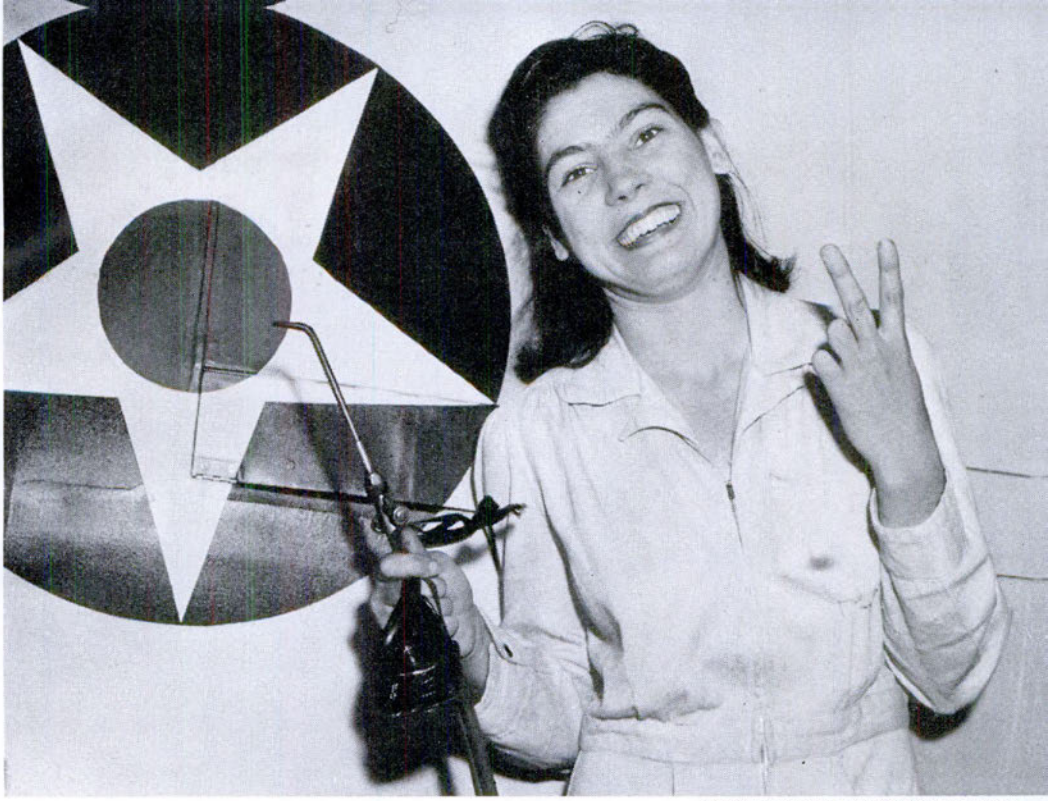
The Raritan Arsenal, Metuchen, N. J., is employing women to fill whatever positions they may be qualified for, from laborers to engineers. A female classified laborer examination was announced in which 216 women qualified. The majority of these women will be placed on laborer jobs.

At the Picatinny Arsenal, Dover, N. J., out of a total of 14,635 women who filed applications for the power sewing-machine operator and classified laborer examinations, 5,796 passed, and 4,127 were appointed to positions in the arsenal. The total number of women at work in this establishment on June 30, 1941, was 2,349.

When employment expansion began at Picatinny Arsenal, less than half of the classified laborer positions were filled by women. Now, however, women are constantly being worked into many other jobs formerly believed to be "for men only." As a result, there is now a ratio of four women to three men, and, eventually, it will become three women to one man. Five hundred women are in training as mechanic learners, preparing to become machine operators. Laboratory aids are being appointed and trained as draftsmen and engineering aids.

At the Frankford Arsenal, Philadelphia, Pa., women are far more numerous than they were in the first year of defense, and the positions to which they have been appointed are more varied. On April 30, 1942, more than 6,000 women were employed, compared to approximately half that number a year earlier.

Before the war, women were found on the production line as mechanical time fuze operators; as inspectors and testers; as machine-tool operators and precision optical workers. Now, in addition, they are physicists and chemists, physical science aids, engineering aids, and inspectors of ordnance materials; they check shells and assist in the operation of turret lathes; they pack gages for shipment. Women explosives operators handle and prepare explosive components used in the manufacture of small-arms ammunition by blend-



OFFICIAL PHOTO, U. S. ARMY AIR FORCES

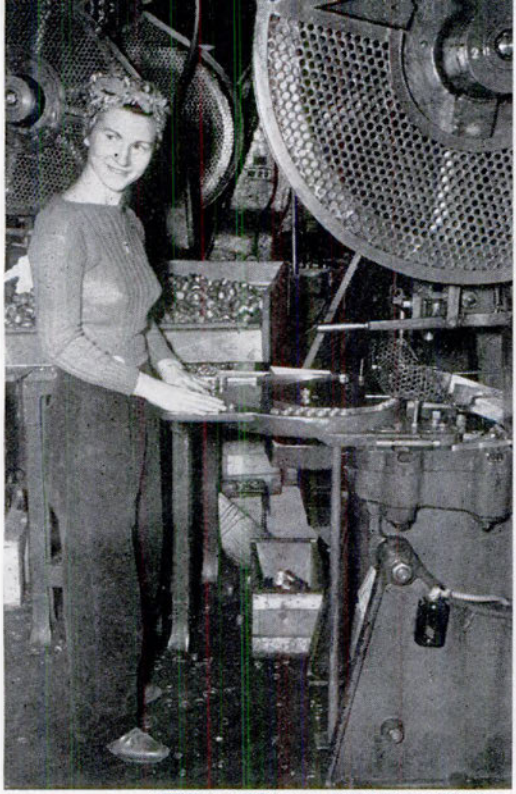
FOR VICTORY

HAND DRILLING A COMPONENT FOR CANNON

OFFICIAL PHOTO, U. S. ARMY SIGNAL CORPS

OFFICIAL O. W. I. PHOTO

PARACHUTES BACK FROM TEST FLIGHTS ARE INSPECTED BY WOMEN WORKERS



OFFICIAL PHOTO, U. S. ARMY SIGNAL CORPS

PUNCH PRESS OPERATOR

OFFICIAL O. W. I. PHOTO

MACHINE OPERATOR

WAR BECOMES WOMEN'S DAILY BUSINESS

WOMEN INSPECTORS CHECK PRIMER HOLES IN AIRCRAFT CARTRIDGE CASES

OFFICIAL O. W. I. PHOTO

OFFICIAL PHOTO, U. S. ARMY SIGNAL CORPS

PRECISION WORKERS ON FIRE CONTROL EQUIPMENT

LOADING MACHINE GUN AMMUNITION IN BELTS FOR SHIPMENT TO THE FRONT

OFFICIAL PHOTO, U. S. ARMY SIGNAL CORPS

ing, mixing, and processing the ingredients of such components. As munition handlers they load (for transportation) and transport from one point to another within the plant, projectiles, grenades, and other forms of ammunition and explosives.

Women subinspectors examine bullets, cartridge cases, primers, and finished cartridges. Hundreds of women are employed as clerks and stenographers, and as messengers laborers, matrons, and janitors.

Authority has been granted officials of the arsenal to employ women as machine adjusters. This authority will be used to provide promotions for women who are found to be especially adapted for such work.

Officials of the arsenal are showing an increasing interest in hiring qualified women to fill junior and assistant engineer positions.

In the Edgewood (Md.) Arsenal, where the bombs were made which fell on Tokyo, more than 2,600 women are at work running drill and punch presses, painting munitions and gas-mask containers with spray-guns, weighing powder, and filling shells. Only 181 women were at work in this establishment before the national emergency. Women are in training as operators of chemical plant equipment. They test the reaction of poison gases on goats and rabbits in order to develop antidotes for the fumes.

Women are inspecting gas masks and chemical warfare material. They are messengers and storekeepers, artists and illustrators. They work in the duplicating plant, operating mimeograph, multilith, multigraph, addressograph, and graphotype machines; and they are faithfully at work as typists, stenographers, accountants, comptometer operators, bookkeeping machine operators, card punch operators, coders, and collators. Women operators of IBM machines keep soldiers' records, and other women make up the local pay rolls.

The Aberdeen (Md.) Proving Ground has also set a notable example in the utilization of women workers. Women

chauffeurs run trucks, busses, and cars; women set up velocity screens and run gage tests in the testing and proving of Garand rifles, machine guns, and other guns. Men supervisors say, in hitting the targets, women have a deadlier shooting eye than men.

There are women draftsmen and women mathematical workers who know calculus and can plot the proof-firing results as well as any man. Women automotive mechanics test cars, peeps, jeeps, and trucks, and "road test" tanks by driving them over a half-mile track all day long.

Women tear down and rebuild motors and operate tractors and 15-ton electric cranes. It has been found that they can be taught to do all these things in about half the time it takes to teach men!

At the San Antonio (Tex.) Arsenal 14 women instrument makers are employed in the optical shop as trainees to replace men engaged in the repair, maintenance, and overhaul of fire-control instruments.

Women are also in training to replace men of draft age now engaged in issuing, receiving, and storing ordnance materials.

The Benicia (Calif.) Arsenal employs 334 women (70 a year ago) as munition handlers and storekeepers in its link loading plant. These women open boxes of loose shells and assemble the shells in clips. They repack and solder the boxes for transportation. It is estimated that 1,500 women will soon be engaged in this work.

Ordnance Procurement Districts

Typical of the increasing percentage of women employees in the Ordnance Department at Large is the increase which was charted in the Springfield (Mass.) Ordnance District (comprising the State of Connecticut and the Counties of Berkshire, Franklin, Hampden, and Hampshire in the State of Massachusetts):

ALL POSITIONS

Date	Men		Women	
	Number	Percentage	Number	Percentage
February 1941	326	78.0	92	22.0
December 1941	989	63.4	570	36.6
May 1942	1,291	45.9	1,524	54.1

INSPECTORS OF ORDNANCE

Date	Men		Women	
	Number	Percentage	Number	Percentage
January 1941	283	91.3	27	8.7
December 1941	829	78.9	221	21.1
May 1942	976	55.2	792	44.8

Employing officers are endeavoring to bring more women workers into employment in the district as inspectors of ordnance. They also recently started a gage school for women for the purpose of training them as gagers.

The outstanding position held by a woman in the district is that of chief of the traffic division. She has approximately 50 employees under her supervision.

Boston Ordnance District: Five hundred and forty-eight women were at work in the district on May 31, 1942, compared to 31 on May 31, 1941. Seventy-nine were minor inspectors of ordnance materials; 51 were minor and assistant engineering aids; 1 was a junior engineer; 3 were assistant laboratory aids; 6 were junior attorneys; 1 was an assistant attorney; 321 were clerks, stenographers and typists. The remainder were telephone and teletype operators, messengers, and office-machine operators.

Philadelphia Ordnance District: On May 30, 1942, it was estimated that from 2,000 to 3,000 women were employed by the Philadelphia district office of the Ordnance Department at

Large. The women were used to a large extent in clerical positions. However, through a number of female trainee examinations announced to secure minor engineering aids and mechanic learners (17,140 women applied for the examinations and 5,529 qualified), minor engineering aids were appointed in the district at a salary of $1,020 a year. Following their appointment, the women were trained for the position of minor inspectors of ordnance materials at $1,260 a year. Their duties consist of inspecting and gaging metallic parts. Women were also recruited for the position of junior inspector of ordnance materials (trainee). After training, appointees may be promoted to positions paying $1,620 a year. Women also operate duplicating and calculating machines in the district office.

Birmingham (Ala.) Ordnance District: On May 30, 1942, 14 women were employed as minor engineering aids. These women were trained in the use of gages and simple measuring devices to become inspectors of ordnance in private contract ordnance plants.

Cleveland (Ohio) Ordnance District: Approximately 400 girls are employed in the district as minor engineering aids. Upon appointment they were assigned to various plants where they were trained; many of them have progressed to the point where they are now working as minor inspectors of ordnance materials. One woman, a laboratory aid in the gage laboratory, is performing unusual technical work which is experimental in character and requires a broad educational background.

Cincinnati (Ohio) Ordnance District: More than 4,000 women were at work in the district on May 30, 1942. Slightly fewer than 500 women were at work in the same district on June 30, 1941. Of the total, 787 are engineering aids, laboratory technicians, inspectors, purchasing agents, and scientific aids; over 3,000 are clerks, stenographers, and typists, and operators of office machines.

Chicago Ordnance District: On June 1, 1942, approximately 700 women were at work on jobs in the various ord-

nance plants in the district. (A year before there had been none.) Five hundred were working as engineering aids and inspectors of ordnance, 100 as laborers, and 100 as explosives operators. In line with the policy of the district to use more and more women to fill critical positions, qualified women are wanted at the rate of 100 a month to fill vacancies in the positions of junior inspector (trainee), minor inspector (trainee), and minor engineering aid.

Twin Cities (St. Paul and Minneapolis) Ordnance District: In the Twin Cities, women are engaged in routine inspection work in plants, privately owned and operated, which make various parts going into the manufacture of ordnance. Women inspectors are under the supervision of a resident inspector. They must work to tolerances measured in two-thousandths of an inch.

San Francisco and Los Angeles Ordnance Districts: On June 30, 1942, 15 junior inspectors of ordnance materials—all women—were at work in these two districts. They were engaged in inspecting the manufacturing processes and the completed articles made by private concerns under contract with the Ordnance Department at Large. Future vacancies in the districts will be filled for the most part by women.

Milan (Tenn.) Ordnance Depot: On May 30, 1942, 62 women were employed in skilled occupations, 60 in clerical work, and 3 as graduate nurses.

Redstone Ordnance Works, Huntsville, Ala.: The Redstone plant loads shells for shipment to storage depots. One hundred and forty-two women mechanic learners were working on the loading lines on May 30, 1942. These women (usually with a grammar-school education) were recruited to a large extent from textile and hosiery mills, where they had been operating small knitting machines, looms, and hosiery machines.

The women use "go" and "no-go" gages on the loading lines. If the shell fits in a prepared hole, it "goes." Otherwise, it is "no-go." Many of the women will advance to become operators of automatic screw machines, or under and minor inspectors of ammunition.

Des Moines (Iowa) Ordnance Plant: A female trainee examination was announced to secure minor engineering aids for the Des Moines plant. Six hundred and seventy-seven women applied, 581 qualified in the examination, and by June 15, 1942, 124 had been appointed. The plant manufactures small ammunition, and women inspect small parts which require visual and general gage inspection.

Iowa Ordnance Plant, Burlington, Iowa: At this plant, a woman who graduated with the Bachelor of Science degree in January 1942 has been appointed as an under inspector of powder and explosives. She was chosen for the position by reason of her knowledge of chemistry, biochemistry, and physics. The duties of her job, as set forth in the official job description, are:

> As under inspector, powder and explosives, * * * to inspect the assembly of primers at this plant—check flash hole for fit; gage heads and percussion elements for size; inspect firing plugs for height and diameter, battery cups for shape and length, black-powder charges for weight, staking of bodies to heads; and completed primer for general conformance to specifications; to prepare daily inspection reports for submission to the chief inspector; and perform related duties as assigned.

Women obtained from female trainee examinations are being used on the plant's components line. Their duties are similar to those outlined in the description above. Officials of the plant feel that it will be difficult to find many women with the high qualifications of the graduate first employed. However, they are attempting to fill vacancies with women who have had factory experience.

Denver (Colo.) Ordnance Plant: Eighty-three women have been appointed to positions requiring light manual labor. These women were obtained from a register of eligibles obtained through a female trainee, manual occupations examination.

Pueblo (Colo.) Ordnance Depot: Approximately 600 women pack ammunition into cases. This plant began operations July 1, 1942.

Umatilla Ordnance Depot, Hermiston, Oreg.: A new plant, not yet in operation a full year. On June 1, 1942, there were more than 1,800 employees, of whom only 59 were women.

Most of the women employees serve as clerks. One girl is a storekeeper; one works in the paint shop; one makes blue prints for the subdepot assembly and repair shops.

From 600 to 700 women will soon be employed in the depot's new linking and belting plant. They will be used as floor ladies, machine operators, and packers. They will be used on the supply and shipping lines, and in the paint shop. Here is an excellent example of a type of Federal defense plant which can be staffed almost entirely with women. It is proposed to limit the number of men employed to one or two hundred.

Ogden (Utah) Ordnance Depot: On June 30, 1942, there were 1,416 women at work in the depot (48 on June 30, 1941). Women were at work in the shell loading plants, the fuze loading plants, and in the black powder pelleting plant. They performed such duties as stamping shells, loading link-belts, and measuring powder.

CHEMICAL WARFARE SERVICE

The employment of women in the making of bombs and bullets filled with deadly gas vapors is gaining in the Chemical Warfare Service.

Again we find a type of work for which women are recruited by means of the trainee examination. Through this examination women may become eligible to fill these positions: Inspector, chemical warfare materials, $4.80 a day; under and minor inspector of materials, 42 to 54 cents an hour; process inspector in the manufacture and assembly of gas masks, 60 cents an hour; chemical plant operator, $6.24 to $7.20 a day; and chemical plant workwoman, $5.28 to $6.24 a day.

Boston Chemical Warfare Procurement District: Four hundred women were on jobs in the district on May 31, 1942—approximately 175 more women than were employed a year before. Twenty percent are occupying office jobs; the re-

mainder were employed in the inspection of gas-mask components, including rubber, metals, and textiles. Women inspect gas-mask assembly operations on the assembly lines.

Recently, 25 women with college training (in such subjects as chemistry, mathematics, and physics), or with equivalent experience along technical lines, were appointed as trainees for the purpose of training them as inspectors of chemical warfare materials. After completing the necessary training (4 to 6 weeks), some were assigned to supervise lower-grade inspectors in the scattered plants of the district. Others were on travel assignment, making inspections at plants where the production rate did not require the presence of full-time inspectors.

Huntsville (Ala.) Arsenal (Chemical Warfare Service): Women are employed as chemical plant workers to assist in the operation of stills, reactors, dryers, centrifuges, and similar equipment used in the manufacture of chemicals. They make minor repairs and adjustments to the equipment. They even supervise chemical plant workmen and laborers who transport and pack chemical munitions.

Women fill all types of munitions with chemical agents, and perform labor incident to the movement of supplies. They conduct simple chemical analyses, operate and maintain automatic temperature and flow-control devices, and keep log sets and other plant records relating to the manufacture of commercial quantities of chemical products.

Rocky Mountain Arsenal, Denver, Colo. (Chemical Warfare Service): Hundreds of women are employed as laborers and inspectors.

Chemical Warfare Service, Los Angeles, Calif.: Two hundred and twenty-three women are engaged in inspecting and passing on chemical warfare materials procured by the service. Nine assistant laboratory mechanics are doing laboratory work, a woman draftsman is engaged on various engineering problems, and there is a woman attorney.

Administrative help is the greatest contribution of women workers in the Engineer Department at Large, War Department. However, some women in the organization are engineering draftsmen, engineering aids, gage readers, attorneys, computers, and minor laboratory helpers. In the skilled and semiskilled trades, women have secured jobs in the department by qualifying in such civil-service examinations as the one for female trainee, manual occupations, announced to secure eligibles for the positions of trainee draftsman, at $1,020 a year, and engineering aid, various grades, from $1,440 to $2,600 a year.

Previous training is required in some of the occupations, such as engineer and architect; but in many cases, in the absence of previous experience, passing a mechanical aptitude test, meeting the physical requirements, and on-the-job training have placed women in good positions. The various types of positions in the several districts are described below.

Philadelphia (Pa.) Engineer District: Approximately 180 women are now employed in the district, as compared to 11 on June 30, 1941. These women are, for the most part, occupying clerical, stenographic, and typist positions, but recent appointments have been made to positions in the subprofessional group, such as draftsman and engineering aid.

Pittsburgh (Pa.) Engineer District: A total of 221 women are employed in the Pittsburgh district (88 on April 30, 1941). Besides holding clerical positions, women are waitresses, cooks, and charwomen.

Gage readers inspect and maintain record tide gages; they read, record, and repair water meters and filter gages; they measure filters and regulate filters. One woman is an attorney for the district.

Norfolk (Va.) Engineer District: Except in the usual clerical positions, women are not widely employed in this district. Only three women are reported as occupying unusual jobs—

one is a boat designer, one is a camouflage draftswoman, and one is a junior architect.

New Orleans (La.) Engineer District: Airport construction, new army camps, and extended district office activities have tripled the number of women employees in the district. A few women are working as draftsmen, and one is an assistant engineer. It is the general policy of appointing officers in the New Orleans district to appoint women to clerical positions vacated by men going into the military service.

Galveston (Tex.) Engineer District: On May 25, 1942, 180 women were at work in the Galveston district, as compared to 103 on August 1, 1941. Women hold clerical positions in all grades up to heads of sections. A few women are in draftsman positions, and two are employed as junior photographers.

New positions and replacements in vacated positions in the clerical grades are being filled by women whenever feasible.

Denison (Tex.) Engineer District: Fifteen and one-half percent of the employees in the Denison district are women. A year ago, 5 percent were women. The positions held are, to a great extent, stenographic and clerical. The personnel of all mail and files sections and of all suboffices is almost entirely made up of women. A few women are engaged in minor drafting duties, in auditing minor financial reports and cost reports, and as messengers and PBX operators.

San Francisco, Sacramento, and Los Angeles (Calif.) Engineer Districts: Twenty women are employed in draftsman positions (various grades) in these districts.

NAVY DEPARTMENT

In order to alleviate labor shortages resulting from the loss of manpower within its civilian employee ranks, the Navy Department has put aside its almost traditional preference for men as civilian employees in navy yards, and is now placing women in almost any job for which they are fitted.

Women are recruited for navy yard jobs through the helper-trainee examinations. They are employed as mechanical

helpers at the rate of $4.72 to $5.68 a day; general helpers at 69 to 81 cents an hour; and primer workers and ordnance workers at $3.92 to $4.88 a day. Women are recruited through the sewer examinations as operators of single- or double-needle power-driven sewing machines at 64 to 76 cents an hour.

Women inspectors of engineering materials and naval ordnance materials are secured through the trainee examinations for the positions of minor inspector (engineering materials), $1,620 a year, and minor inspector (naval ordnance material), $1,440 a year. Positions as junior inspector (engineering materials)—in these optional branches: Steel hulls, mechanical, electrical, and radio—are available for women at $1,620 a year.

Here, again, it should be kept in mind that the rate of pay for these positions differs in various localities, depending upon the prevailing wage rates.

Washington (D. C.) Navy Yard: A detailed description of the types of positions, working conditions, and training programs for women workers in this navy yard will serve as an example of the similar work in the other navy yards of the country, brief summaries of which follow this section.

Qualified women employees, secured from lists of eligibles set up through the trainee examinations, are assigned to various shops in the Washington Navy Yard for training and subsequent promotion to good jobs in activities vital to war production.

On June 30, 1942, approximately 2,000 women were at work in the yard. In all the shops they are first instructed in the safety regulations which must be observed in operating the machines which they are later to use. They learn the names of loose materials, parts, and hand tools. They are taught how to file, store, and issue materials and tools, and how to handle high explosives in accordance with prescribed safety regulations.

Women who accept jobs in the yard must observe certain safety rules in the matter of dress. Jewelry is not allowed. Low-heeled shoes (no open toes), and slack suits or coveralls

if possible (except in the optical shop), are prescribed. Loose and flowing clothing is never worn, and a cap, bandana, or other suitable covering over the hair must be worn in order to lessen the hazard of hair being caught in running machinery. Long finger nails are not permitted. All precautions are taken to avoid dermatitis, which is a hazard in these shops because of cutting oils and chemicals. Women assigned to duty in the magazine must not wear underclothing made of rayon, nylon, silk, or wool, as such fabrics collect high static. To prevent this, only cotton fabrics are allowed in work clothing. Rubber overshoes must not be worn in the buildings. All workers are warned that cold, dry days are the most dangerous for static accumulation.

In the sight shop women are placed under competent instructors for training in the reading of drawings and measuring instruments; they are shown how to receive and ship materials out of the shop; they are taught how to care for jigs and fixtures. They learn to operate engraving machines, drill presses, and thread millers, and they are shifted from one machine to another in order to round out this training.

In the assembly and fuze shop they are taught to burr and inspect materials; they wind coils; and they are trained in the use of indicators and gages as called for on the operation sheets on ordnance parts, such as fuzes, torpedo parts, fixtures, and other materials.

In the optical shop women are trained in 14 of the 22 basic operations connected with the manufacture, assembly, subassembly, and inspection of precision ordnance equipment, including optical equipment. In the optical glass section they are trained in the following operations:

(*a*) Hand polishing, assembling coincidence prisms, polishing plano surfaces and lenses;

(*b*) Edge-grinding lenses, glass milling and drilling, inspection;

(*c*) Fine-grinding lenses, fine-correcting plano surfaces, fine-grinding plano surfaces, and glass plate blocking;

(*d*) Plaster blocking, silver-ruling prisms, centering and cementing lenses;

(*e*) Bevel and groove (either prisms or lenses) lens blocking, cleaning and waxing; and

(*f*) Rough-grinding prisms, rough-grinding lenses, and ground surface inspection.

Other women workers in the mechanical assembly section are instructed in ruling and etching; prism scraping and fitting; cleaning and inspection; machine engraving; and bench milling and bench lathing.

In the quiet, professional atmosphere of the optical shop, women in white inspect precision instruments by sighting them against peaceful northern skies. The silvery etched lines on a lens are carefully scrutinized by their keen eyes, for it is on the exactness of these lines that the gunner in some future battle must depend for a true aim as he "frames" his target and opens fire on the enemy.

At the magazine, women are placed under competent instructors for training in a specific fuze-loading operation. Women who master this operation progress to others until they are competent to perform any loading operation in the assembling of fuzes. In the assembling of fuzes they are taught the danger points to watch out for, such as maladjustments and misfits.

In the ordnance electrical shop, women are taught to prepare micro-insulators for the assembly of repaired commutators, and they are trained to operate coil-taping machines. Women prepare wires of predetermined lengths to form cables used on firing and lighting circuits. They are taught to assist armature winders in taping coils for armatures and field coils for motors; to assist in the assembly of details for switches on component parts for gunfiring circuits; and to assist in the final inspection of circuits, and in the preparation of the shipment of the circuits by taping leads together.

New York Navy Yard: The yard is steadily employing large numbers of women as power sewing-machine operators, female

classified laborers, and coat finishers. Women, of course, are filling the great majority of the clerical positions in the yard.

Surveys are under way in the machine shop and material laboratories in an attempt to determine just what jobs women are capable of filling. Upon completion of the survey, the trainee examination will be used to secure qualified women to replace men in various positions, both in the machine shop and in the material laboratories.

Philadelphia Navy Yard: On May 15, 1942, more than 1,100 women were employed in the yard in nonclerical jobs (206 on May 15, 1941); they were employed in laborer positions, in the skilled-trades positions (such as mechanic helper, sewer, aircraft fabric worker, and mechanic learner), and in mechanic supervisory positions. An additional 1,200 women were at work in other occupations in the yard, such as clerk, office-machine operator, messenger, draftsman, blueprint operator, and physical science aid.

Norfolk Navy Yard, Portsmouth, Va.: The artisan shops of the yard increased their number of women employees to approximately 1,000 by the end of 1942. The women at present employed are trainees who work as "on-the-job" helpers in the electrical shops for armature and coil winding; in the tool rooms; in the instrument shops as optical workers; in the paint shops; in the machine shops, where they operate lathes, drill presses, planers, and shapers; in the sheet-metal shops, where they make metal furniture; and in the welding shops. A few women are in training as plumbers.

Crews of women are used to operate electric overhead cranes in the shops. They do this with surprising success, thus releasing for duty the men who are urgently needed for work on the outside.

It is estimated that approximately 1,200 women are employed in the yard in mechanic positions.

Charleston (S. C.) Navy Yard: More than 800 women are employed at this yard—most of them in clerical and administrative positions.

Through the trainee examinations, women have been recruited as draftsmen, and as helpers for coppersmiths, electricians, machinists, pipefitters, riggers, sheet-metal workers, shipfitters, joiners, and shipwrights ($4.72 to $5.68 per day). It was estimated that more than 600 women would be filling these jobs by the end of 1942.

Puget Sound Navy Yard, Bremerton, Wash.: The employment of women in the Puget Sound yard has gone far beyond the experimental stage. Women workers have proved that they can be employed advantageously in a great many positions.

On June 1, 1942, there were 1,675 women at work in the yard (460 on June 1, 1941). Approximately 6 percent of the total employees are women—73 percent in clerical positions and 27 percent in laborer positions.

Women who were formerly beauty parlor operators are now radial drill operators and sheet-metal helpers. Others operate huge cranes; others thread bolts in the shipfitter shop; and still others do precision work with machine tools. Every effort is being made to use women wherever possible.

Mare Island Navy Yard, Vallejo, Calif.: Women are employed as general helpers and as trainees, as follows:

(*a*) Fifty-eight are employed in the shipfitter and welding shop. They weld, operate small cranes, lay out ship plates from blueprints, operate drill presses, and do toolroom work.

(*b*) Six are employed in the sheet-metal shop. They weld, operate engraving machines, buck rivets, do bench work, and run bucket-machine presses.

(*c*) One hundred and twenty-five women are employed in the machine shops. They operate turret lathes, automatic screw machines, drill presses, milling machines, engraving machines, shapers, and small cranes.

(*d*) Fifty-one are employed in the electrical shop. They operate drill presses, punch presses, and small precision lathes; they wind small coils, clean parts, wire, solder, do lens work, assist instrument makers, and test under-water sound equipment.

(*e*) Five are employed in the pipefitter shop as storekeepers in the tool crib, and as gasket trimmers in the rubber laboratory.

(*f*) Four are employed in the boat shop. They operate mortise machines, band saws, and boring machines.

(*g*) Eight are employed in the paint shop and paint-manufacturing plant. They refinish furniture, grind glass, and assist in laboratory and storekeeper duties.

(*h*) Nineteen are employed in the foundry, receiving and storing patterns, shipping small castings, and working with small cores.

(*i*) Twenty-five are employed in the pattern shop, sandpapering, gluing, shellacking patterns, installing fillets, operating small machines and hand tools, and keeping stores.

Naval Torpedo Station, Newport, R. I.: Approximately 1,000 women were at work at the station on June 1, 1942—an increase of more than 700 in a year. While the great majority of these women were in clerical and stenographic positions, a considerable number were employed as mechanic learners, as classified laborers, and as ordnance workers and primer workers. Employees in the two latter groups were appointed from civil-service examinations announced to secure ordnance workers and primer workers for positions paying from $3.92 to $4.88 a day.

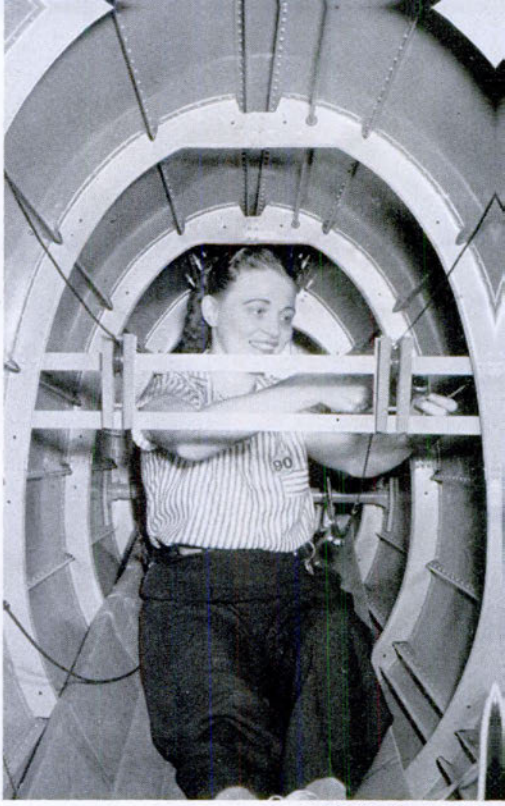
Ordnance workers perform various operations involved in the manufacture, subassembly, assembly, and inspection of ordnance material. Primer workers inspect and assemble components of fuzes, primers, tracers, detonators, igniters, and similar ordnance material which may contain explosives or pyrotechnic materials.

Twelve hundred women applied for the examination for ordnance workers, and 530 were found eligible for the job; 632 women applied for the mechanic learner examination, and 363 qualified.

A number of women inspectors of engineering materials ($1,620 a year) perform minor inspection work on precision-machined component parts of ordnance materials, involving

OFFICIAL PHOTO, U. S. ARMY AIR FORCES

INSPECTING AIRPLANE PARTS



OFFICIAL O. W. I. PHOTO

PUTTING DRILL NUTS INTO THE MONACOCK OF AN AIRPLANE

REMOVING BLISTERS IN A BUILDING FORM FOR BULLET-SEALED TANKS

OFFICIAL O. W. I. PHOTO

OFFICIAL O. W. I. PHOTO

ALUMINUM WORKER INSPECTING A SAND CASTING FOR DEFECTS

OFFICIAL O. W. I. PHOTO

PRECISION DRILLER ON STEEL TANK PARTS

OFFICIAL PHOTO, U. S. NAVY

CHECKING AN AIRPLANE MOTOR

THE HARD WORK OF WOMEN IN WAR

WOMEN WORKERS ENGAGED IN REBUILDING AND RE-EQUIPPING TANKS AND TRUCKS

OFFICIAL PHOTO, U. S. ARMY SIGNAL CORPS

TOOL GRINDER AT WORK IN A GOVERNMENT ARSENAL

WELDING PART FOR A COCKPIT

OFFICIAL PHOTO, U. S. ARMY AIR CORPS

the use of "go" and "no-go" gages and dial gages. The women are trained to take over higher-grade inspector positions through the use of precision measuring instruments, such as micrometers, verniers, depth gages, shadowgraphs, and various tensile-strength measuring machines.

Women ordnance workers earning 61 cents an hour during a prescribed training course are in line for promotion to the position of machine-shop precision operative at 73 cents an hour. In this position they perform various operations in the manufacture, subassembly, assembly, and inspection of ordnance equipment, including details for mechanical and electrical equipment, and for ammunition. From this position they may be promoted to the next higher grade at 94 cents an hour; in the latter grade they perform precision operations requiring a high degree of skill in the manufacture, subassembly, and inspection of precision ordnance equipment.

Naval Torpedo Plant, Alexandria, Va.: This is a comparatively new plant and has been using women workers since the first part of 1942 only. Women work 8 hours a day at $1,260 a year, with time and a half for overtime, on thread checking, depth gaging, burring, and engraving numbers on parts. Parts for several different types of torpedoes are assembled in the plant. It is necessary to have a series of numbers for each type of torpedo. The women must memorize each series and be absolutely accurate in placing the correct number on a part in order to make sure that it goes into the right torpedo.

Naval Ammunition Depot, St. Juliens Creek, Va.: Women mechanic learners, secured through the female trainee, manual occupations examination ($4 a day), are trained in the operations incident to the manufacture of ammunition. After completing a prescribed training period, they are promoted to the position of general helper (minimum pay 69 cents an hour). Their principal duties include cutting out and sewing raw silk in the manufacture of powder bags to hold black cannon powder; loading small caliber projectiles; placing the explosive charge in the projectile, and fuzing it; the assembly of medium and minor caliber cartridges; fuze work; and

operating drill presses, lathes, and boring machines in the machine shop.

Naval Proving Ground, Dahlgren, Va.: Women trainees assist ordnancemen and mechanical workers.

Naval Mine Depot, Yorktown, Va.: More than 200 women are employed at the depot as mechanic learners, doing light manual jobs of a mechanical nature in ordnance work.

Naval Experiment Station, Annapolis, Md.: Women are employed as engineering aids and as laboratory assistants, performing simple and routine work in the fields of electricity, metallurgy, chemistry, and mechanics.

FLYING FIELDS AND AIR STATIONS

Women mechanic helpers appointed at $1,500 a year are making good in the flying fields and air stations for the Army and Navy. With compacts and lipsticks in their pockets, they are making records in the operation of turret lathes and gear-cutting machines. They are putting planes in the air with a skill equal to that of many men.

Officials of a naval aircraft factory said that the 300 women mechanic helpers they had on the job were "Grade A," and they would take another thousand immediately if they could find them. "With calm indifference and high efficiency," they said, "these women slam down 10-, 20-, and 100-ton pressure punch presses of which even men are 'leery'."

Women secure jobs in the flying fields and air stations by meeting the physical requirements of a trainee examination and by passing a simple mechanical aptitude test. The examination is announced for the purpose of finding women qualified to fill the position of mechanic learner at various rates of pay ($900 to $1,080 a year). In one such examination, more than 900 women applied for the examination; approximately 500 qualified.

Other examinations announced to secure women workers for flying fields and air stations are listed below, together with the duties of the positions:

Packer, $1,320 a year. Duties: To pack miscellaneous articles.

Aircraft Fabric Worker, $4.40 to $5.36 a day. Duties: To cut, sew, fit, and repair fabric coverings of airplane wings, fuselages, control surfaces, and other parts.

Leather and Canvas Worker, $1,320 to $2,040 a year. Duties: To perform tasks * * * involved in the fabrication, maintenance, overhaul, alteration, and repair of articles used by the Air Corps which are made of leather or canvas, * * * including parachutes * * *.

Sheetmetal Worker, $8.08 to $9.04 a day. Duties: Cutting, filing, and drilling.

Welder, Gas, $8.08 to $9.04 a day. Duties: To perform acetylene welding on miscellaneous jobs * * *.

Storekeeper, $1,260 to $1,440 a year. Duties: Requisitioning, storing, and packing miscellaneous supplies.

Aircraft Procurement Inspector, $1,620 to $2,900 a year. Duties: To conduct inspections in the procurement of aircraft materials, with optional branches in aircraft engines, instruments, parachutes, propellers, tools and gages, radio, textiles, fur-lined clothing, optical and magnetic materials.

Upholsterer, $8.08 to $9.04 per day. Duties: To upholster all classes of furniture, automobiles, boats, and airplanes.

Trainee, Junior Aircraft Communicator, $1,440 a year. Duties: To provide airmen and other persons concerned with information vital to the safe operation of aircraft by means of radiotelephone, radiotelegraph, teletype, and interphone.

Aircraft Fabric Seamstress, $900 to $1,200 a year. Duties: Under supervision, to cut, repair, and fit aircraft fabrics to wings, control surfaces, and other aircraft parts.

The Civil Aeronautics Administration encourages women to file applications for the trainee, traffic controller (airway and airport) examination, which is announced to secure eligibles for traffic controller positions paying $1,800 a year. The duties of these positions are directly related to the safety of human life, and are exacting and responsible. Women who are appointed to these positions receive training in the fundamentals of airway and airport traffic control by performing routine assignments at an airway control center, or an airport traffic control tower.

The work of the women who build and repair airplanes and aeronautical equipment in Federal aircraft plants and flying fields is described in the following section, which summarizes the reports of officials of the individual plants and fields.

U. S. Naval Air Station, Quonset Point, R. I.: Approximately 200 women are employed at the Quonset Point station—as clerks, laborers, mechanic learners, sewers, aircraft fabric workers, and parachute mechanics.

In the assembly and repair department, women are doing an excellent job in overhauling, reconditioning, testing, and inspecting aircraft spark plugs. Women of one group are overhauling, repairing, and reconditioning wings, ailerons, rudders, and elevators. Much practice and skill are required to do this type of work.

A woman parachute mechanic is doing first-rate work in the parachute repair shop. It is reported that, in some respects, she is a better mechanic than some of her fellow male workers. One woman doing aircraft fabric work has been promoted to the position of instructor, and is teaching other women the duties of the aircraft fabric worker position.

Houlton (Maine) Air Base: As the ranks of men employees are depleted by induction into the armed forces, the engineering department of the base anticipates the use of women in mechanic positions. They will be selected from lists of eligibles resulting from the mechanic learner or mechanic helper examination.

Middletown Air Depot, Olmstead Field, Middletown, Pa.: It is believed that this air depot is the largest employer of women in the entire air service. On May 30, 1942, there were 1,610 women at work in the depot, compared to a total of 149 on May 30, 1941. Again, the majority of women are in clerical positions, but women are continuously entering the skilled trades by means of the mechanic learner and the mechanic helper examinations.

During the past year, women have been appointed to the following positions, which they are filling to the entire satisfaction of the officials of the depot: Assistant engineering draftsman, general mechanic's helper, junior blueprint operator, leather and canvas worker's helper, packer, storekeeper, property and supply clerk, and mechanic learner.

Naval Air Station, Norfolk, Va.: Women workers secured through the mechanic learner examination are successfully at work in the fabric shop of the station, where they cut and sew materials for airplane wings (the first woman to be appointed "leading man" of sewers in the station's history is at work in this shop); in the parachute shop, where they inspect parachutes; and in the instrument shop, where they repair, overhaul, and maintain clocks, watches, and other aeronautical instruments, in all cases working with small delicate parts.

In the dope shop, they apply acetate to wing fabric. In the machine shop, they weld, run drill presses, lathes, and cutting machines. In the sewing shop, they "baseball stitch" by hand on metal ribs of wings.

Most of the women are learners in these positions. However, many who have had preliminary training or experience have been appointed as third-class helpers in the various trades. Some women are stationed at the side of skilled male mechanics, where they receive training on engine overhaul, assembly, and disassembly.

Langley Field, Va.: The Langley Memorial Aeronautical Laboratory, under the jurisdiction of the National Advisory Committee for Aeronautics, and the subdepot of the Middletown (Pa.) Air Depot, are located at this field. Approximately 75 women are employed by the two establishments. They are occupying positions of scientific aid, mechanic trainee, mechanic, truck driver, junior aircraft mechanic, junior sheet-metal worker, instrument repairer, and parachute folder and tester.

Women aircraft mechanics and sheet-metal workers shirk no phase of their jobs, no matter how dirty or greasy or heavy. Wearing slacks, coveralls, and overalls, they repair airplane motors and wings with sheet metal. The work includes making and installing the parts, and using the machines and tools required in cutting, fitting, welding, and riveting various metals. These women mechanics disassemble, assemble, maintain, and repair airplanes and airplane engines.

Women instrument workers repair, replace, and test all instruments essential to the proper operation of the airplane by the pilot, the navigator, and the bombardier. Women parachute mechanics test, inspect, repair, fold, and pack parachutes.

Marine Corps Air Station, Cherry Point, N. C.: The Cherry Point station is a comparatively new post. Women are employed as telephone and teletype operators, messengers, and matrons. Many of the key clerical positions are being filled with women.

Army Air Fields and Naval Air Stations of the Fifth United States Civil Service Region (South Carolina, Georgia, Alabama, Florida, Mississippi, Tennessee, Puerto Rico, and the Virgin Islands): Most of the women workers are in clerical positions, but some are serving as physical therapy aids, dental hygienists, nurses, medical technicians, dietitians, laboratory helpers, and librarians. Large numbers of women are employed as laundry workers, seamstresses, attendants, cooks, laborers, and maids.

In the skilled trades, women are employed as helpers in the fabrication, maintenance, overhaul, alteration, and repair of leather and canvas articles used by the Air Corps.[1] These articles include parachutes, packs, harness, fabric-covered airplane tail surfaces, and leading-edges of wings, airplane seats, cushions, covers, awnings, tow targets, tents, belts, straps, shoes, boots, gloves, and other items of clothing. Others are radium dial painters. Women are also called upon to pack parachutes, and to drop-test and inspect parachutes and parachute harness to assure their proper functioning. A number of women mechanic learners are being trained for various helper positions and for aircraft spark plug and aircraft fabric work.

Bowman Field, Louisville, Ky.: Women are being placed in virtually all positions in the aircraft repair shops. These positions include inspector, sheet-metal worker, leather and canvas worker, aircraft mechanic, welder, machinist, aircraft electrician, and aircraft painter.

Wright Field, Dayton, Ohio: Vacancies are being filled with women storekeepers and property and supply clerks. A number of mechanic helpers are on the job.

Naval Air Station, Corpus Christi, Tex.: More than 700 women are employed at the station (71 a year ago) as clerks, stenographers, typists, telephone operators, office machine operators, purchasing clerks, librarians, messengers, mechanic learners, sewers, and classified laborers.

San Antonio Air Depot, Duncan Field, San Antonio, Tex.: Approximately 2,800 women were employed at the depot on June 1, 1942 (99 on June 1, 1941), as storekeepers, janitors, seamstresses, leather and canvas goods workers, and messengers. Many women are already occupying, or are in training for, these positions: Aircraft mechanic, aircraft electrician, aircraft engine mechanic, leather and canvas worker, sheet-metal worker, aircraft inspector, engineering draftsman, aircraft instrument mechanic, and propeller mechanic.

Army Air Base Subdepot, Portland, Oreg.: There is a definite tendency in the depot to employ women wherever possible. A number of women are working in the position of sheet-metal worker's helper in the process of fabricating airplane parts, such as tanks, oil coolers, sheet-metal boxes for radios and electrical installations, and cowlings.

On the basis of drawings, sketches, and verbal instructions, women perform work necessary for the upkeep of shops and laboratory equipment—work which involves the operation of various types of machine tools.

Other women inspect and repack parachutes, flying helmets, radio phones, and oxygen masks. They repair all types of flying clothing, make leather covers for miscellaneous gadgets, and sew name plates, identification tags, and insignia on flying clothes.

General mechanic helpers make minor adjustments and repairs to airplane engines, checking ignition timing, spark plugs, carburetors, gas and water lines; and they connect hose clamps, service and replace tires, service airplanes with oil and gas, and wash, oil, grease, and clean parts. They operate

motorized machinery and equipment, such as tractors, mowers, and graders, used in maintaining the flying field, roads, and lawns at the post.

Naval Air Station, Seattle, Wash.: More than 200 women were employed at the station on June 1, 1942. About 12 percent were working as mechanic learners, in the assembly and repair department, on aircraft mechanic work. Other women are working as sewers on aircraft fabrics.

Sacramento Air Depot, McClellan Field, Calif.: Approximately 2,500 women were employed at the Sacramento depot— 1,900 in the clerical and 600 in the mechanic positions. Only 50 women were employed by the depot on July 1, 1941.

In the skilled trades, women are at work in the following classifications:

(*a*) Mechanic learners (563). These learners are given 3 months' training to fill positions as helpers in the aircraft mechanical trades for assignment to duty at the depot and its subdepots.

(*b*) General mechanic's helpers (27). Their duties involve minor adjustments and repairs to aircraft engines and parts and assisting journeymen aircraft mechanics.

(*c*) Stock tracer's helpers (6). They dispatch, dismantle, disassemble, assemble, and repair aircraft parts, fittings, and accessories, procure stocks from stock rooms, and deliver raw materials, aircraft parts, fittings, accessories, and equipment to mechanics who are engaged in overhaul, maintenance, and repair of aircraft engines.

(*d*) Mechanics (4), engaged in leather and canvas work.

March Field Subdepot, March Field, Calif.: Approximately 25 women are employed in the stock and tool room receiving and issuing tools, and sorting, tagging, and storing aircraft supplies.

Naval Air Station, San Diego, Calif.: More than 600 women are employed at the station in the following kinds of work:

(*a*) Metal shop: Cutting, filing, drilling, sawing, grinding,

and hand-forming metal parts. Women will be used in the shop as welders, first working with aluminum, and then with other metals.

(*b*) Tube shop: Bending and forming tubing; identifying tubing; capping ends of tubes; cleaning and painting tubings.

(*c*) Machine shop: Subassembly work, filing, riveting, drilling, removing burrs, operating engraving machines, issuing tools and supplies. The shop expects to use women in the operation of metal saws and turret lathes.

(*d*) Hull and float shop: Women assist in the overhaul of main and wing tip floats, and hulls.

(*e*) Overhaul control shop: Reconditioning hose clamps, sorting nuts, bolts, and screws; salvaging aircraft electrical cables; identifying parts and boxing them.

(*f*) Fabric shop: Sewing, installing, doping and taping fabric on wings and control surfaces; making seat cushions.

(*g*) Wing shop: Issuing rivets and tools; delivering rivets; receiving and unloading trucks and trailers; riveting wings.

(*h*) Cable shop: Checking cable and parts; splicing cable.

(*i*) Tank shop: Bench filing; assembling tanks; welding and brazing.

(*j*) Parachute shop: Repairing and reconditioning parachutes.

(*k*) Engine shop: Reconditioning spark plugs; working in the storeroom; sorting small parts; learning carburetor overhaul; inspection of engine parts. The shop expects to use women in the overhauling and checking of cylinder parts, ignition harness, magnetos, and other engine parts.

(*l*) Assembly shop: Subassembly of small engine parts and engine accessories; keeping shop records; issuing small parts; subassembly and installation of cowlings; subassembly on wings; subassembly and installation of fuel systems; subassembly and assistance in the installation of fixed equipment, such as seats, doors, small cowlings, and hydraulic equipment; and assisting in the installation of surface controls; in rigging and installation of tail surfaces; and in the installation of instruments.

(*m*) Graphic arts shop: Radium refinishing on dials and indicators. Women assist in the photographic laboratory in such tasks as art layout, multilith work, screen processing, optical silvering, and plastic molding.

(*n*) Radio shop: Repairing minor radio parts, including cable assembly, microphones, antenna reel counters, telegraph keys; cleaning parts.

(*o*) Electrical shop: Subassembly of aircraft wiring.

(*p*) Accessory shop: Overhauling control pulley bearings.

(*q*) Paint shop: Making miscellaneous parts and painting with spray guns.

(*r*) Plating shop: Preparing parts for plating and assisting in plating operations.

(*s*) Propeller shop: Cleaning and buffing propellers.

(*t*) Windshield shop: Assisting in bending and forming of plexi-glass; subassembly on windshields.

(*u*) Fuselage shop: Riveting and cutting metal.

(*v*) Photographic catalog shop: Compiling photographic catalog of airplane parts.

Naval Air Station, Alameda, Calif.: One year ago, no women were empoyed at the Alameda station. Now there are 275—50 employed as sewers, rib stitchers, and aircraft fabric workers; 25 as helpers and storekeepers in the various aircraft shops; and 200 as mechanic learners on light metal work such as riveting, drilling, metal forming with hand tools, making metal subassemblies, spark-plug cleaning, and aircraft electrical work.

A few mechanic learners are employed in the instrument shop, where they are being taught the overhaul, repair, and calibration of aircraft instruments. A mechanic instructs them in disassembly of instruments, and in diagnosing trouble. With 9 months' training, women are expected to be able to overhaul at least three or four different kinds of aircraft instruments.

Ogden (Utah) Air Depot: More than 1,000 women were on the pay roll of the depot in June 1942. Only 14 were on the pay roll in June 1941. Women were employed at the depot

as mechanic learners in all types of aircraft mechanic positions. Three women were engineering draftsmen.

To fill vacancies at the depot, officials have decided to employ women to the extent (in terms of percentages) indicated in the following schedule:

Trade	*Percentage of women*
Aircraft engine mechanic	25
General aircraft mechanic	25
Aircraft propeller mechanic	25
Aircraft hydraulic mechanic	25
Aircraft welder	50
Aircraft electrical worker	50
Aircraft radio mechanic	50
Aircraft leather and canvas worker	75

MILITARY CAMPS AND FORTS

Since July 1941, thousands of enlisted men in office and skilled trades jobs in recruiting stations, army posts and camps, and marine posts, have been replaced by women civil-service employees and have thus been released for duty with the combat forces. Indicative of the rapid trend in this replacement policy is the fact that by the first part of January 1942, 20,000 men had been so replaced.

Replacements have been made in all branches of the armed services, but chiefly in the Quartermaster Corps, the Medical Corps, the Signal Corps, and in the administrative offices of the Army. Women replaced enlisted men as typists, stenographers, office-machine operators, clerks, telephone switchboard operators, messengers, cooks, and kitchen workers. They also replaced men in such jobs as plumber, machinist, welder, sheet-metal worker, truck driver, janitor, and laborer.

The ranks of women workers in the military posts have been increased to the greatest extent by qualified women secured from lists of eligibles set up through such civil-service examinations as those for laundry operative, laundry assistant, forelady of laundry department, telephone operator, storekeeper, and dental surgeon's assistant. The mechanic learner and learner-trainee examinations have also provided a number of

women employees in the skilled and semiskilled trades. The following section gives some idea of the diversified occupations at which women work in the military posts of the Nation.

Marine Barracks, Quantico, Va.: Fifty women, employed as helper-trainees, assist aircraft mechanics in the aircraft engine overhaul shops. One interesting duty among many others is that of painting insignia on aircraft.

Camp Davis, Wilmington, N. C.: More than 800 women are employed at Camp Davis, most of them in clerical and stenographic positions. Two hundred and ninety-six are employed in the quartermaster laundry, and 399 in the Office of the Quartermaster.

Fort Meade, Md.: Women are employed as mess attendants.

Holabird Quartermaster Depot, Baltimore, Md.: A number of women artists are engaged in free-hand drawing of illustrations for use in textbooks in the field of automobile mechanics. These books are used in all army mechanic schools throughout the country. Women in the engineering division draw charts and make blueprints which are used by mechanics and engineers on duty in the depot.

Post Commissary, Fort Knox, Ky.: Women are employed as meat cutters.

Army Camps and Forts, Alexandria, La.: More than 1,200 women, including some draftsmen, are employed in camps and forts in the vicinity of Alexandria.

Army Camps and Forts, San Antonio, Tex., and vicinity: Approximately 2,000 women are employed in camp activities as compared to 700 a year ago. Included in this number are 284 laundry workers, 834 typists, 448 stenographers, 78 clerks, 14 dietitians, 33 laboratory technicians, 22 seamstresses, and 15 dental and laboratory helpers.

Fort Lewis, Wash.: The post ordnance office employs women as clerks, and as junior storekeepers in the ordnance warehouses. Women have proved themselves capable of handling and storing heavy, greasy equipment—doing the work

formerly done by soldiers. The post signal radio repair office also employs women as storekeepers and messengers.

Other women are employed as mechanic learners, dismantling field glasses, cleaning the lenses, reassembling the parts, and making the necessary adjustments. Others drive trucks and busses.

The quartermaster laundry at the post employs 635 persons, of whom 85 percent are women. Many of the women are doing heavy work formerly assigned to men—for example, those employed as extractors and washers.

The station hospital employs women as cooks, bakers, dishwashers, and janitors, and as classified laborers for the distribution of linens.

At the McChord Field subdepot, women ride motor scooters to deliver mail and messages; other women unload freight cars and army trucks, work in storerooms as storekeepers, and do janitor work.

War Jobs for College-trained Women

COLLEGE-TRAINED women are being sought in ever-increasing numbers to fill war-service jobs in the Government. In *The First Year* it was found that women who had pursued professional and scientific courses in colleges were making superb contributions to the Federal defense program. In the Government agencies they were filling important positions in the professional and scientific fields. They were serving as dietitians, social workers, dental hygienists, nurses, lawyers, doctors, economists, personnel officers, and chiefs of public-information and press relations.

Highly trained women were ground-crew instructors and pilots. They were designing work outfits for women, testing textiles to determine resistance to mildew in order to improve cloth for military clothing and equipment, and inspecting lease-lend supplies which were being sent to England.

Now, women are found in the shops and laboratories of the Government, working as engineering draftsmen, conducting experiments relating to the dehydration of fresh vegetables, studying ways to preserve and increase the nutritive value of foods, and producing vaccine for use in the prevention of animal diseases.

Due to the heavy recruiting and examining workload of the Civil Service Commission, the assembling of statistical data on Federal employment has been greatly curtailed for the duration of the war. For that reason, it is difficult to estimate the number of college-trained women who are contributing to the Government's war program. It is also difficult to ascertain in what professions they are working in the largest numbers, and under what conditions they are working. Certain it is that

WOMEN AT WORK IN THE SHOPS AND LABORATORIES
OF THE GOVERNMENT

they are doing all, and more, of the work they were doing in the first year of the emergency, and in much larger numbers.

Some of the professional and technical positions in the Federal service in which women are making notable contributions to the war program are:

Bacteriologist.
Biochemist.
Business specialist.
Club organization specialist.
Commercial specialist.
Commodity specialist.
Community organization analyst.
Cryptanalyst.
Economic analyst.
Economic planning consultant.
Economic warfare analyst.
Economist:
    Business.
    Home.
    Home (extension).
    Medical.
Education specialist:
    Elementary.
    Exceptional children.
    Home economics.
    Parent.
Employee relations consultant.
Employment analyst.
Employment specialist.
Home marketing specialist.
Industrial analyst.
Industrial specialist.
Information specialist.
Laboratory technician.
Leasing and occupancy analyst.
Library material specialist.
Medical officer.
Meteorologist.
Microscopist.
Nutrition specialist.
Nutritionist.
Personnel research technician.
Physical analyst.
Price analyst.
Program specialist.
Public health nursing consultant.
Public welfare consultant.
School program specialist.
Social science analyst.
Social scientist.
Social welfare officer.
Statistical analyst.
Statistical research consultant.
Statistician:
    Health and disability studies.
    Venereal diseases.
Student personnel administration specialist.
Surgeon.
Technical aid.
Technical analyst.
Translator.
Zoologist.

The war program of the Federal service has accentuated tenfold the need for professional and technical workers. Critical labor shortages have developed in engineering (all branches) and in the physical sciences (physicists, chemists, metallurgists, geologists, meteorologists); in management and administration (administrative analysts, industrial consult-

ants, personnel managers, housing managers); in the social sciences (technical experts, statisticians, transportation economists, marketing analysts); in the field of accounting (cost auditors and purchasing officers); and in medicine and related fields (nurses, medical officers, physiotherapy aids, occupational therapists, dental hygienists).

As the central personnel agency of the Government, the Civil Service Commission has found it increasingly difficult to recruit an adequate number of trained personnel in many occupations requiring college training. Critical shortages exist in such fields as engineering, drafting, meteorology, physics, and chemistry. It is more and more imperative that professionally and technically trained women take war jobs in which they can fully utilize their highest skills and talents, lest the war program be seriously crippled.

It is estimated that there are approximately 3,500,000 women in America who have either received college degrees or certificates, or have had 1, 2, or 3 years of college training. The Civil Service Commission has recognized the importance of this vast reservoir of trained womanpower. As the recruiting agency of the Government, it seeks to draw from it women who are qualified through training to fill critical war-service positions in Federal war agencies. The Commission has sought to do this through wholesale shortcuts in its recruiting methods and through numerous procedural innovations designed to facilitate the task of supplying emergency personnel.

Age, physical, and even educational requirements have been liberalized in many of the professional civil-service examinations announced by the Commission to secure professional and scientific workers. Such examinations are continuously open to applicants, and the great majority of them are "unassembled"—that is to say, applicants are rated on their sworn statements as to their education and experience, and on corroborative evidence gathered by the Commission; they are not required to assemble for a written test.

Under the Engineering, Science, and Management War Training Program, sponsored by the U. S. Office of Education, training courses are available to women who need "refresher" training, or more specific training, in order to qualify for war jobs.

Records of persons qualified for Government jobs in the professional and subprofessional fields are maintained in the Commission's examining units. The persons who submitted their records—in the form of applications for employment—did so as an indication of their willingness to fill war-service jobs. By reference to these records, the Commission has supplied hundreds of qualified women to fill critical positions in Federal agencies.

But the response to the Commission's efforts to induce professionally trained women to submit statements of their qualifications has been below expectations.

A number of conditions contribute to this situation. First, many women have responded to the call of the volunteer services (Red Cross, U. S. O., WAAC, WAVES, etc.); second, more money is finding its way into households because of the increased earning power of men, so that there is less inducement for women to seek employment; third, and quite likely the most important of all, is the simple fact that comparatively few women have received training in the professional fields in which critical war jobs exist.

During the past several years, the Federal Government has looked with increasing interest upon the annual "crop" of students graduating from the colleges and universities. These students, in the view of Federal appointing officers, were the best prospects that could be found for appointment to junior-grade professional positions. The Civil Service Commission has reached out for these students, announcing, at least once each year, a "junior professional assistant" examination. The first "JPA" examination was announced in February 1939, and six others had been announced by July 1942.

In sampling the data compiled on the junior professional assistant examinations held during 1941 and the early part of

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1942 (for the purpose of giving some idea as to what "optional subjects" both women and men undergraduate and graduate students were choosing), the following information was revealed:

OPTIONAL SUBJECTS CHOSEN BY APPLICANTS FOR THE JUNIOR PROFESSIONAL ASSISTANT EXAMINATIONS HELD DURING 1941 AND THE EARLY PART OF 1942

EXAMINATION ANNOUNCED JAN. 6, 1941

Optional Subject	Applied		Passed	
	Men	Women	Men	Women
Junior administrative technician	2,815	913	546	111
Junior agronomist	634	1	168	.....
Junior in animal nutrition	234	.....	33	.....
Junior biologist (wildlife)	1,314	419	255	15
Junior business analyst	2,488	313	825	57
Junior chemist	3,341	454	908	38
Junior economist	2,792	725	976	192
Junior engineer	3,894	6	3,754	3
Junior forester	983	.....	326	.....
Junior geologist	1,071	85	456	23
Junior home economist	6	1,821	2	285
Junior horticulturist	282	26	38	.....
Junior legal assistant	3,560	304	1,077	57
Junior meteorologist	1,133	135	428	9
Junior physicist	743	57	280	19
Junior range conservationist	447	3	164	.....
Junior soil scientist	466	3	193	2
Junior writing and editing assistant	2,372	2,536	760	478
Junior zoologist (parasitology)	200	46	28	3

EXAMINATION ANNOUNCED OCT. 20, 1941

Optional Subject	Applied		Passed	
	Men	Women	Men	Women
Junior administrative technician	2,968	1,105	2,071	742
Junior business analyst	2,406	456	1,891	309
Junior economist	2,280	686	1,653	491

Optional Subject	Applied		Passed	
	Men	Women	Men	Women
Junior agricultural economist	126	6	47	2
Junior agronomist	257	2	85	1
Junior aquatic biologist	184	106	95	34
Junior archivist	561	459	249	113
Junior bacteriologist	344	267	124	73
Junior biologist (wildlife)	408	184	117	15
Junior chemist	2,163	416	1,968	373
Junior entomologist	268	21	129	5
Junior forester	433	. . . .	96	. . . .
Junior geologist	383	57	258	18
Junior in household equipment	20	92	11	35
Junior olericulturist	54	4	8	. . . .
Junior pomologist	89	2	23	. . . .
Junior public welfare assistant	500	1,160	250	603
Junior range conservationist	199	2	67	1
Junior soil scientist	248	4	96	3
Junior State Department assistant	1,206	472	613	170
Junior statistician	991	814	873	626

Data are not available on the number of appointments which have been made from the lists of those persons who qualified in the various options under each examination announced.

Following a survey by the American Council on Education to determine the approximate number of undergraduate women students with training in the fields listed below who graduated from the colleges, universities, professional and technological schools and teachers colleges between February (or March) 1942 and December 1942 (or January 1943), the following estimates were made:

Field	*Women graduates*
Management and administration	2,974
Agriculture and biology	3,000
Medicine and related fields	5,558
Engineering and physical sciences	2,545
Social sciences	24,139
Arts and languages	9,036
TOTAL	47,252

In addition, it was estimated that 8,000 women graduate students would become available for full-time employment during the same period.

There is every indication in these data that (*a*) women in large numbers are not specializing in those professions in which the more critical shortages of workers are found and (*b*) those who have specialized in such professions have not applied for examination under the options in the junior professional assistant examinations which relate to the jobs in which workers are needed in the greatest numbers.

Perhaps the most valuable single step which has been taken to inform college and university students of war jobs in the Federal service is the publication of "Civilian War Service Opportunities for College and University Students." Prepared by the United States Civil Service Commission and distributed by the American Council on Education, it lists those examinations requiring college education, and the remarks which have been made on the need for women in some of the professions covered by the examinations are not only of current but of historic importance. Notable ones follow:

Chemist (Junior), $2,000.

Women have special opportunities as a result of the war demand for technically trained persons in chemistry in navy yards, arsenals, and other Government laboratories. More women should be encouraged to enter the various fields of chemistry.

Economist (any specialized branch), $2,600 to $6,500.

Women to a much greater extent may well be encouraged to enter all fields of economics.

Engineer (Junior), all branches, $2,000.

Women.—More women should be induced to enter the engineering fields. This is a big opportunity for women interested in engineering.

Engineering Aid (photogrammetric, geodetic, hydrographic, topographic), $1,440 to $2,600.

Women to a much greater extent should be encouraged to go into this field. Women are now being appointed in considerable numbers.

Engineering Draftsman (20 options), $1,440 to $2,600 a year.

Women can well fill positions in all these options. Women are now readily accepted for all drafting positions.

Inspector, Engineering Materials (steel hulls, mechanical, electrical, radio), $1,800 to $2,600.

Women can qualify. War demands are increasing opportunities for the appointment of women.

Inspector, Ordnance Material, $1,620 to $2,600.

Women are being appointed to the lower positions in increasing numbers. Greater use of women in inspection work depends on the scarcity of manpower.

Medical Officer, $3,200 to $4,600.

Women who definitely desire a career in medicine can well be advised to consider opportunities in the Federal civil service.

Metallurgist, $2,000 to $5,600.

Women are eligible. War demands are increasing their opportunities in metallurgy.

Meteorologist, $2,000 to $5,600.

Women should be encouraged to enter this field.

Naval Architect, $2,600 to $5,600.

Women may well be encouraged to enter this field of engineering. Qualified women are readily accepted now.

Physicist (Junior), $2,000.

Women to a much greater extent should be encouraged to enter the field of physics. Special opportunities are now open to women in the lower grades.

Physiotherapy Aid, $1,620 to $1,800.

Women can be used more extensively than ever in this position. Men are still being accepted but in limited number because of the need for men in the armed forces.

Radio Mechanic-Technician, $1,440 to $2,600 a year.

Women may be accepted. War demands are increasing opportunities for women appointees.

Radio Monitoring Officer, $2,600 to $3,200.

Women may be accepted.

Shipyard Inspector (hull, outfitting, machinery, electrical, joiner), $2,300 to $3,500.

Women may be accepted.

Technical and Scientific Aid, $1,620 to $2,600.

Women are urgently needed who have completed 2 years of college work with courses in mathematics, at least through trigonometry.

Technologist, $2,000 to $5,600.

Women to a much greater extent should be encouraged to enter the various technological fields. Women are readily accepted for appointment.

Training Specialist, $2,600 to $5,600.

Women are eligible. Certain phases of Government work offer exceptional opportunities.

Veterinarian, $2,000 to $2,600.

Women to a greater extent can well be advised to consider this field of medical science.

The Search for The Stenographer-Typist

THE PAPER work of total war has created an unprecedented demand in Government establishments everywhere for the services of the typist and the stenographer. One of the most spectacular and stirring phases of the behind-the-lines activity of the second year of the emergency is the Civil Service Commission's recruitment of these workers. By the tens of thousands, they have been recruited, examined, and placed in Federal war agencies.

In December 1938, only 53,000 stenographers, typists, and secretaries were on the Federal rolls; 45,000 were women. By August 1941, the number had increased to an estimated total of 85,000. More than 150,000 stenographers, typists, and secretaries were at work in the executive branch of the Federal Government in June 1942; about 130,000 were women.

The upward trend in the number of appointments made from the Federal civil-service registers (lists of eligibles) for stenographers and typists during the past 3 years clearly indicates the phenomenal growth in the demand for such workers. From June 1939 to June 1940, more than 2,800 appointments were made from the stenographer registers, and more than 5,500 from the typist registers. During the next 12 months, approximately 15,000 stenographers and 25,000 typists were appointed. Figures on the number of appointments made during the 12-month period ending June 30, 1942, are not available; however, by subtracting the estimate of total stenographer-typist employment in August 1941 from that made for June 1942, it may be seen that the number of appointments to new positions alone was 65,000, without counting appointments necessitated by the turnover inevitable to so large a number as 150,000 positions. Even before the emer-

gency, women were receiving the vast majority of appointments to stenographer-typist positions and, of course, war conditions have greatly augmented the percentage of women appointed.

The tremendous increase in the number of stenographers and typists employed by Federal agencies was the most sensational part of a general expansion of personnel which was required to take care of the vast projects of the defense and war programs. The recruiting facilities of the Civil Service Commission were taxed to the extreme in the effort to meet the demand. Every conceivable avenue through which potential stenographers and typists might be quickly reached was explored. Examinations were held daily. Examining procedures were simplified and requirements were lowered.

In preceding years, persons who applied for stenographer and typist examinations were required to file their applications by a specified date. Often applicants waited many months before they were examined, and, if eligible, they sometimes waited several more months before they were finally certified for appointment and placed on the job. These delays were caused by the staggering number of applications filed and the resulting examination workload.

Early in May 1941, however, because of the enormous increase in the demand for qualified stenographer-typist eligibles, the announcement of the stenographer and typist examination for appointment to the departmental service at Washington, D. C., was amended to provide for (*a*) the *continuous* acceptance of applications, (*b*) the examination of persons whose applications were received prior to May 28, 1941, within 2 weeks from that date, (*c*) the examination of groups of applicants at periodic intervals thereafter (the intervals depending upon the number of applications received), and (*d*) the acceptance of a subsequent application card from a person who had previously failed in the examination, after a lapse of *only* 3 *months* from the date of filing of the previous application.

On December 15, 1941, the passing grade in the typing part of the junior typist examination was lowered from 70 to 60.

In the amendment effecting this change, it was also provided that a subsequent application card would be accepted from a person who had previously been rated ineligible *after a lapse of only 30 days* from the date of filing of the previous application.

On January 26, 1942, the required rate of dictation for the junior stenographer examination was lowered from 96 to 80 words per minute. The restriction that a person who had been rated ineligible as a junior stenographer must wait 30 days before a second application would be accepted was removed.

Subsequent amendments of the examination requirements followed.

On April 13, 1942, the rate of dictation was reestablished at 96 words a minute. A rating of 70 was reestablished as a minimum in each test in either of the examinations. The general test (designed to test mental alertness and understanding of the fundamentals of English) was now included for qualifying purposes only—that is, contrary to long practice, it was no longer an element which affected the final numerical rating of the competitor; the competitor either passed it (and won the right to be rated in the other tests making up the examination) or failed it (and lost the right to be rated in the other tests).

May 4, 1942: Applications from persons who had reached their sixteenth birthday were accepted in the case of applicants residing in Washington, D. C., or within a 50-mile radius.

June 15, 1942: Applications from all persons who had not reached their eighteenth birthday, but would reach that birthday by October 1, 1942, were accepted.

With the declaration of war, the demand for qualified stenographers and typists became acute. In one instance, 670 stenographers were needed in Washington immediately. The Civil Service Commission was given 8 days in which to bring them to Washington and put them on the job. A press release issued by the Commission on December 27, 1941, tells the story of the speed attained in filling the positions:

> By the closing hour on the date set, the 670 stenographers were on the job and 48 more were ready for duty. The majority were recruited by the Commission's regional staffs and the others were obtained from the lists of

eligibles maintained in the Commission's central office. When they arrived at the Nation's capital, they went direct to the Civil Service Commission, where they were fingerprinted and then sent at once to the jobs waiting for them. More stenographers continue to arrive in Washington by every train and bus to meet the continuing need.

A thousand stenographers were placed on war jobs in Washington during the week ending January 28, 1942.

It became apparent, however, that further "corner cutting" would be necessary if recruiting was to keep pace with the continually increasing demand for this class of war worker. There was a growing uneasiness on the part of the press (an uneasiness which was reflected in public opinion) as the number of Government employees continued to mount. Were so many stenographers and typists really necessary to carry on the war? Was it possible that the war could be lost because of inability to recruit them? There were reports of complaints that stenographers and typists were hurried to Washington and assigned to "useless" stenographic pools; that there were thousands upon thousands of stenographers and typists already in the Government who were at work on jobs not requiring stenographic skill; and that new stenographers and typists were being assigned to clerical positions.

In November 1941, the Civil Service Commission requested the heads of the departments and independent establishments of the Government immediately to examine their personnel with a view to reassigning to stenographic positions any persons serving in a clerical capacity who might be competent stenographers and whose ability in the stenographic field was not being utilized. However, new appointees to stenographic positions continued to complain that they were being assigned to duties not requiring stenographic skill, and early in 1942 the Commission made another effort to adjust the matter, asking the heads of the agencies to submit the names of all persons appointed as stenographers on or after July 1, 1941, who were at the time devoting 50 percent or more of their time to clerical duties.

In taking this action, it was not the intention of the Commission to disparage the work being done by women in clerical

(as distinguished from typing and stenographic) positions. The girls grading civil-service examination papers, the telephone operators, the fingerprinters, the file clerks, are as important to the war program as the stenographers and typists. But stenographers and typists were needed in large numbers, and one way of increasing the supply was to see to it that persons qualified to perform typing and stenographic work were not placed in jobs for which recruits were more easily obtainable.

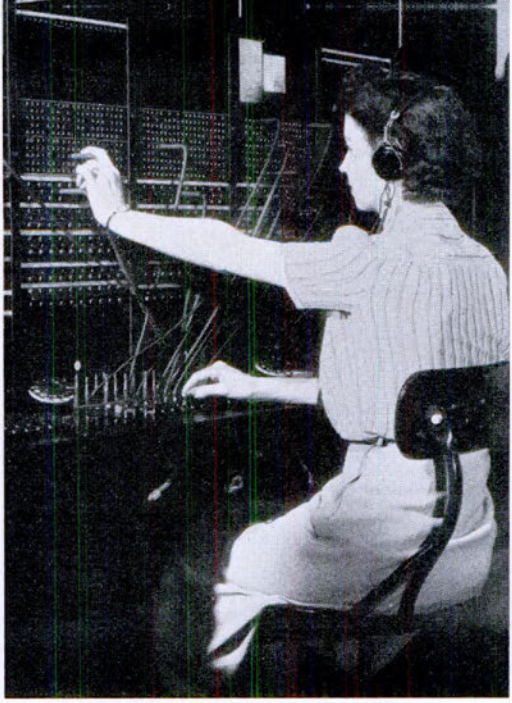
The Civil Service Commission relied heavily on the Directors of the 13 United States Civil Service Regions in the recruiting of potential stenographers and typists for appointment to war jobs in Washington.

Quotas were assigned to each region according to the needs of the service. The following quotas, assigned to the 13 regions for the month of June 1942, are typical:

QUOTAS ASSIGNED TO EACH OF THE 13 CIVIL SERVICE REGIONS IN RECRUITING STENOGRAPHERS AND TYPISTS FOR THE MONTH OF JUNE 1942

Region	Week ending June 6, 1942		Week ending June 13, 1942		Week ending June 20, 1942		Week ending June 27, 1942	
	Stenographer	Typist	Stenographer	Typist	Stenographer	Typist	Stenographer	Typist
1	85	120	40	86	60	86	60	40
2	105	155	60	64	70	64	70	60
3	80	105	45	78	70	78	70	45
4	60	70	60	140	95	140	95	60
5	80	115	65	74	85	74	85	65
6	80	115	45	70	65	70	65	45
7	100	150	75	94	90	94	90	75
8	55	105	40	32	50	32	50	40
9	55	110	25	76	30	76	30	25
10	45	60	25	56	30	56	30	25
11	15	15	5	12	15	12	15	5
12	25	20	10	17	30	17	30	10
13	5	10	5	8	10	8	10	5
TOTAL	790	1,150	500	807	700	807	700	500

In sampling the data received from the various regional offices on the number of persons examined in the stenographer and typist examinations, and the number who passed, the



WOMEN WAR WORKERS IN THE CLERICAL FORCES
OF THE GOVERNMENT

following was considered noteworthy and typical of the successful manner in which the various regions met their quotas:

Fifth United States Civil Service Region (Tennessee, South Carolina, Mississippi, Alabama, Georgia, Florida):

	Examined	*Passed*
Junior Typist	22,284	12,539
Junior Stenographer	10,350	5,467
TOTAL	32,634	18,006

Sixth United States Civil Service Region (Indiana, Ohio, Kentucky):

	Examined	*Passed*
Stenographer-Typist	35,000	10,000 (Approximate)

Tenth United States Civil Service Region (Texas, Louisiana):

	Examined	*Passed*
Stenographer	10,648	3,062
Typist	18,861	8,445
TOTAL	29,509	11,507

Special representatives of the Commission "beat the bushes" of the countryside. "Itinerant" examiners went into schools, factories, and homes in their search for available stenographers and typists. Appeals were made through the press and over the radio. Business colleges trained students day and night. Patriotic posters set forth a vibrant appeal to girls—VICTORY WAITS ON *YOUR* FINGERS: KEEP 'EM FLYING, MISS U. S. A.

The result of this concerted action brought thousands of war workers to the National Capital. The great majority were girls and women—in fact, the number of girls was so large that national attention became focused on the "Government girl." Magazines and newspapers featured her. The movies discovered her. Her work, her life in Washington, her ambitions, became public property.

The "Government girl" continues to arrive in the National Capital. Many more stories—feature and fiction—will be told about her. Yet there is one unglamorous fact about her that is in danger of being obscured: Her contribution to the job of winning the war is of genuine importance.

A Million Women in The Federal Service—1943

At the end of the period covered in this study, that is to say, June 30, 1942, about 14,000,000 women workers were on jobs in the United States.

Out of this vast resource of womanpower (representing more than one-fourth of the country's total employment), 2,000,000 women were at work in agriculture; 3,000,000 in manufacturing; 400,000 in transportation and public utilities; 800,000 in Government service (Federal, State, and local); 7,000,000 in the retail and wholesale trades, and in the personal, professional, and related services; and 700,000 in miscellaneous employment (mining, construction, business services, amusement, finance, and insurance). Within these various classifications there were 2,500,000 women engaged in actual war work.[1]

Millions of additional women will yet find their way into war work—women who, heretofore, have not found it necessary to work . . . married women with and without children . . . women who have retired because they thought themselves too old to work, but now feel that they must return to work in order to do their bit for their country.

It was estimated in 1942 that the number of women employed in war industries (Government and private) would reach 3,500,000 by the end of that year, and that another 2,500,000 would be added in 1943, bringing the total number of women in war production up to 6,000,000 by the end of 1943.

In the Federal service the total number of women employees is increasing at the rate of 8,000 a week. At the end of 1942 the number of women on Government jobs reached the 600,000

[1] Estimates based on figures compiled by the Women's Bureau, United States Department of Labor, from other Government sources.

mark. June 30, 1943, the end of another Government fiscal year, may find 1,000,000 women working for Uncle Sam.

There is little to wonder about in the fact that women have risen in such large numbers to work, march, and even fight, if necessary, with men against the common enemy; for this is a new kind of war—a war so savagely waged on land, by sea, and in the air that its uncertain geographical fronts leave no peaceful hinterland, but expose all the people—men, women and children—constantly to the danger of sudden attack and possible extermination.

In no other war has women's contribution to the freeing of men for military duty, and their participation in the manufacture of munitions, in the planning of strategy, and in the actual defense of our shores, been so widespread and so profound as it has been since the attack on Pearl Harbor.