

The VICTORY FLEET



A Digest of Production News
with Suggestion Bulletins

Division of Public Relations
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WOMEN IN SHIPYARDS

"A shipyard is no place for a woman." This expression of a traditional attitude is yielding to the necessity for employing women in order to increase production in the face of manpower shortages. Commissioner Vickery has set a goal of 35% women in shipyards by the end of 1943. That this goal can not only be reached but that in the attainment a material contribution will be made toward increasing production is testified by shipyard executives and workers, government offices such as the Women's Bureau of the Dept. of Labor, WPB, WMC, the Office of Education, the Navy, the Maritime Commission, and the records of the many women already successfully employed in shipyards. This testimony is herewith presented.

DO GOOD WORK - On the whole, says one Marinship official, women have done an excellent job. They are good workmen and can weld and burn as well as any man. Foremen and leadmen have reported that they take direction well, are careful of tools and much easier on them than the men; that they adapt themselves to new conditions readily, have the patience to do repetitive work, require less supervision than men, have established an enviable record on safety and absenteeism, and have a low turnover rate. When the women had demonstrated their ability to do a workmanlike job, the men who were most positive in their objections went just as far in the opposite direction in sponsoring the women and in doing everything possible to assist them.

The average woman at Marinship was found to be between 26 and 35 years of age, between 5'3" and 5'6" in height, weighed approximately 130 pounds, was married with no children, had had some high school training and previous work experience in the low income occupations

NOT AMAZONS - There is practically no work in a shipyard that cannot be handled by a woman with the proper qualifications,

as is shown by the jobs women already hold. Shipyard work does not necessarily require great strength; cranes are available for heavy lifting. The husky women do the heavy work; the small ones are good at fitting in tight spaces. Women are not yet working on the slab where heavy hammers are swung against white-hot steel; nor are there any women riveters as yet reported in Maritime yards, although in Canada some women are riveting ship plates. Todd has hired the first woman chipper.

Women excel at some tasks, especially those requiring detail work, finger dexterity, capacity for taking pains and learning quickly. In general they have disproved the old bugaboos that women have no mechanical ability and that they are a distracting influence in industry.

They are loyal and earnest, seeking no favors because they are women, ingenious in thinking up time-and-labor-saving devices, often so industrious that they increase their job production by over 100%. The patriotism motivating many of these women is embodied in a welder at Marinship who has lost a brother, her husband, and two sons in this war. "I think of the boys at Bataan," she said, "and I'm never tired."

THE WORK THEY DO

USUAL - A common job for women in shipbuilding is some type of welding-- tack, horizontal, vertical, overhead, spot, acetylene. Women are even trainees for heavy welding on boiler plate, and a few are certified welders who can work on high pressure steam coils with confidence. Welders, with helpers in various crafts (electricians, machinists, etc.) and burners still account for a majority of the women. One woman burner does such excellent work that she is called to different parts of the yard whenever an intricate burning pattern has to be executed. The Kaiser company has women in one plant doing all types of installations and fittings on the upper deck. Another West Coast company has women electrical workers in gangs installing power cables; assembling cable hangers, and pulling heavy cables through bulkheads. Others are doing warehousemen's work and operating machines such as drill presses, grinders and lathes; many are checkers.

UNUSUAL - The more unusual jobs performed by women in shipbuilding are as operators of shearing machines on sheet metal--in one case a big square shears cutting metal $3/8$ inch thick; of a power hack saw; of a band saw; of a cut-off saw; of tool grinders; of a turning lathe; of a bridge crane; of a keel bender; as rodman assisting surveyors; as cutter on steel plate with a blowtorch; as solderer; and in at least one instance as a skilled toolmaker.

TECHNICAL - Women must fill engineering jobs in expanding war plants as the armed forces take more and more trained technicians. On the list of critical occupations are professional and technical engineers, machinists, metallurgists, and engineering draftsmen. Women in large numbers are doing engineer testing, gauge testing, inspecting, blueprint reading, microphotography, calibration of instruments. One woman does steel designing for a large shipbuilding company, others are ship architects. Some hold executive positions.

LEADERS - Many women have already advanced to the status of leadermen. Mooreship has three women leadermen laborers who keep the ships "spic and span" and supervise all women laborers on all the hulls. At Marinship a woman foreman has saved thousands of man hours and dollars just by "cleaning house." She saw that much time was being wasted by workers hunting for small parts like dogs and wedges which were strewn around carelessly. Now a large number of women work on reclamation, picking up and restoring parts to the right spot, where they can be readily found, and salvaging many repairable parts that had formerly been scrapped. There are also women leadermen and instructors in welding.

CRAFTSMEN - Evidence that women ship workers have come of age is shown by the number who are becoming skilled shipfitters. At the Charleston, S. C. navy yard crews of women shipfitters and welders are building whole sections from plumbing and leveling to complete erection and welding of plates. The women work under a leaderman shipfitter and have a laborer to aid them in placing heavy metal plates, but otherwise the job is strictly feminine. Under the former plan, these women were given many varying jobs, never knowing why a particular job was done in a particular way. When the crew was formed and started from the keel, seeing the ship take form as assembly continued, they learned what they were doing and why. They developed pride in their work, and production was speeded.

In Savannah, where prejudice against women has only recently been changed to enthusiastic acceptance, women are doing nearly all the lofting in shipyards. Much as they might once have traced a dress pattern, these women now lay out ship templates.

Savannah's Mayor expresses the feeling of many others for women shipworkers: "Hats off to them!...There is nothing they cannot do if they try."

FITTING THE WOMAN TO THE WORK

"Transition from manpower to womanpower on the war production front is not a female problem but an employment problem--a process of adjusting millions of new workers to new jobs," Charlotte Carr, Assistant to the Deputy Chairman of the War Manpower Commission, declares. In making this transition, women workers, industry, and the Government face essentially the same difficulties that would arise if millions of green men workers were to be absorbed hurriedly into expanding industries. "To get the most out of this green hand," Miss Carr said, "she must first be directed to work which matches her abilities, and second must be employed under conditions which make for top efficiency. In the old days we would have called this a placement and personnel management problem. Today we call it womanpower mobilization."

SELECTION - Pre-training aptitude tests and advice by experienced counsellors enable would-be war workers in Detroit to determine what type of work they seem best fitted for. A follow-up service assures that trainees are placed where the demand is most urgent. These "Industrial Clinics," sponsored by the Detroit News and the Board of Education, interest potential workers in training programs, give specific information and demonstrations of courses taught, as well as aptitude tests and training.

TRAINEES - More than 50 per cent of the trainees in vocational schools now are girls and women, many of whom have previously worked only in their own homes. According to "Education for Victory," there were 45,230 women in pre-employment courses on December 31, 1942, and 32,330 women in supplementary (on-job) training courses. These courses, in a wide variety of subjects, including ship-fitting, marine electricity, machine shop, lofting, carpentry, plumbing and pipe-fitting, and the most popular, welding, prepare inexperienced workers to do simple jobs, beginners to do more skilled work, and skilled workers to teach their skills to others.

One shipyard at Camden, N. J., has an extensive training program to instruct women in the intricacies of machinery. Women are trained to be competent helpers in machine shops, to know the tools needed by machinists on sight and to handle them with care. They are entrusted with filing rough edges of tools and lubricating the machinery, jobs requiring extreme care.

At the Simplex Wire & Cable Co. the Engineering Laboratory has opened a school for beginners. Acting on the theory that the girls in the laboratory will do their work better and enjoy it more if they know what they are doing with all those gadgets that they manipulate, the instructor talks about the mathematics of electricity, about volts, and amperes, and current and resistance, and assigns reading.

Foremen should be especially adapted and trained for the job of teaching women. Some women workers act as instructors.

INDUCTION - Much of the bewildering strangeness of a huge shipyard, which may completely discourage a woman working for the first time in such an atmosphere, is made understandable by the induction schools operated by many yards. Swan Island and Oregon Ship have recently instituted such a course. Divided into two periods, the first two and a half hours cover the more important phases of operations and procedures, such as layout of the shipyard, identification and work badges, medical and insurance services, transportation, housing, etc. This information is presented by means of movie slides, posters, handbooks and direct discussion of employees' questions. The classroom period over, the new employees are escorted in groups into the yards and to the departments to which they have been assigned. They are welcomed by the chief clerk who outlines department rules shows location of tool rooms, rest rooms, assigns their letter day off, and introduces each employee to her leadman.

HEALTH AND HAPPINESS

Conditions both on the job and in the community must make it possible for women to work efficiently.--Charlotte Carr, assistant to Deputy Chairman, WMC.

WORKING CONDITIONS - Progressive managements are adapting their production methods to fit women's height and strength, raising or lowering benches or machines to improve work layout and reduce lifting weight, installing conveyors, adjustable seats and wooden platforms. Comparatively simple adjustments are usually all that are needed. Special attention should be given to lifting and conveying devices, as strain of improper lifting is particularly harmful to women. New workers should be instructed in the proper way to lift, with feet close together and knees bent, with the strain then put on the legs rather than the back. They should also be taught the best ways to carry a load, on the shoulder if possible.

All possible methods of protection against injury from unguarded machinery, excessive speed, muscular strain, explosive chemicals, fumes, acids, dusts, or other harmful substances or conditions should be taken, especially when women are employed on processes new to them. Women are likely to be more seriously affected than men by some poisons. Constant study of such materials, their use, and protection from them should be carried on.

Adequately equipped lunch rooms, dressing rooms and rest rooms are necessary not only for convenience of the worker but for health. Lunches should never be eaten where clothes or tools that may carry poisons are in use. Facilities for getting a good noon meal reduce sickness, absenteeism, and fatigue. Good washing facilities for both men and women help prevent dermatitis.

SAFELY DRESSED - One of the most important conditions for a woman's safety in a shipyard is the clothing she wears. Large buttons, numerous pockets, fancy cuffs, flying hair, jewelry, clothes too tight or too loose or not giving protection from wet, cold, heat, fire - all these should be taboo.

It will be necessary to provide in their place however, clothing that is comfortable, well-fitting, and attractive as well as safe. The Navy-Maritime Commission Conference on Shipyard Health and Safety, the Women's Bureau of the Dept. of Labor have set up certain standards for women's safety clothing; the Dept. of Commerce Bureau of Standards and the American Standards Association are attempting to set up standards for materials and types.

Two films for teaching safety and health habits to new women workers are "Safely Yours," and "Danger--Women at Work."

COUNSELLORS - The mental welfare of women workers is as important as their physical welfare. The appointment of a well-qualified woman with responsibility for conditions and policies especially affecting women is important. At Oregon Ship and Marinship and other yards such women counsellors constitute a service group to give suggestions about clothing, nursery schools, housing, and personal problems. They spot jobs that women can do as men are called into service. They see that women are adjusted to their jobs and to their co-workers.

RECREATION - Although women workers have not caused any great moral problem in plants where men are also working, the community conditions in many industrial boom towns are conducive to moral laxity and restlessness. Recreational programs - parties, sports, clubs - sponsored by the community or plant and planned by the workers themselves, are the best correctives and morale builders.

Provision of nurseries by plants, community, or government is one way to relieve mothers for war work without endangering the health or social development of their children. When older children are given a responsible share in community activities, they too are helped and their parents relieved of distracting worry.

EMPLOYMENT OF WOMEN IN SHIPYARDS

Q. WHY IS THE QUESTION OF EMPLOYING WOMEN IN SHIPYARDS RAISED AT THIS TIME?

A. To maintain increasing production in the face of manpower shortages, 35% of the employees in shipyards by the end of 1943 should be women.

Q. HOW MANY WOMEN ARE NOW WORKING IN MARITIME SHIPYARDS?

A. In the summer of 1942 women wage earners in all commercial shipyards averaged 0.5% of the working force. A steadily increasing number of women have been taken on in Maritime emergency cargo yards, so that in March, 1943, Maritime yards employed an average of 6.48% women. In individual yards the rate varies from 0% to 17.8%. (See face of this bulletin.)

Q. HOW DO SHIPYARDS COMPARE WITH OTHER ESSENTIAL INDUSTRIES IN EMPLOYMENT OF WOMEN?

A. By March, 1943, women held more than 10% of all the factory jobs in each of ten major war industries except tanks and shipbuilding. Comparable figures according to the WPB Statistics Division were:

	<u>Women Employed Jan.-March, 1943</u>
Aircraft	
Airframes	36.8%
Engines	18.0
Propellers	14.7
Ordnance	
Small arms	25.2
Artillery	12.5
Small arms ammunition	46.1
Artillery ammunition	34.8
Tanks and combat vehicles	7.0
Fire control equipment	35.9

Q. IS THE NECESSARY WOMANPOWER AVAILABLE?

A. The potential labor reserve of women has been estimated by the Bureau of the Census to have been about 4,500,000 at the end of 1942. Further expansion of women in plants depends upon the extension of recruitment, training, and placement programs, upon wider acceptance of women factory workers on the part of employers, labor unions and civic groups, and upon the adjustment of work and living conditions in communities to enable women with family responsibilities to continue to manage their homes while working. With more and more industries turning to women to solve their manpower shortages, the wise employer will not wait until this market too has been depleted of the best workers.

(For other information on the subject of women in shipyards, see Victory Fleet Nos. 9-p.3, 15-p.3, 18-p.2, 24-p.4, 27-p.3, 32-p.4, 40-p.3-4, 41-p.4.)

PERCENT OF WOMEN IN MARITIME SHIPYARDS*

March 1943

National Average - 6.48%

By Zones

Atlantic - 3.88%
 Gulf - 5.74%
 Pacific - 8.95%
 Great Lakes - 1.21%

Yards Having 5000 or more wage-earners	%	Percent of Women Employed - March 1943				
		5%	10%	15%	20%	
Kaiser Co. (Swan Island) ---	17.8			95		
Oregon Shipbuilding Corp. --	15.5	15	2	15		
J.A. Jones, Brunswick YD ---	15.1	96	0 1/2	14		
Richmond SY #3 & #3A -----	14.6	95	2 1/2	92		
Kaiser Co. (Vancouver) -----	14.1	9	44 2/5	216		
Richmond Shipyard #2 -----	11.9					
Southeastern SB Corp. -----	10.6	215				
Moore Dry Dock Co. -----	9.4					
J.A. Jones, Panama City YD -	8.9					
Alabama DD & SB Co. -----	8.4					
Richmond Shipyard #1 -----	8.3					
Walsh-Kaiser Co. -----	8.1					
Ingalls Shipbuilding Corp. -	8.1		13 2/9			
New England SB Corp. -----	7.7					
Gulf Shipbuilding Corp. ----	7.4					
Marinship Corp. -----	6.6					
Houston Shipbuilding Corp. -	6.0					
North Carolina SB Corp. ----	5.0	15.5	2 1/5	15 2		
Pennsylvania SY, Inc. -----	4.3	7.36	5 1/5	12 35 2/3		
Delta SB Co., Inc. -----	2.7			9 44 2/5		
Sun Shipbuilding & DD Co. --	1.7	14 4	3 1/5			
Bethlehem-Fairfield SY Inc.	1.6					
St. Johns River SB Co. -----	1.3					
Western Pipe & Steel Co. ---	1.0					
Federal SB & DD Co. -----	0.3					
California SB Corp. -----	0.3					
Consolidated Steel Corp. ---	0.0					
Bethlehem-Sparrows Point ---	0.0					

* Information from Bureau of Labor Statistics