MILITARY SCIENCE

Navy Growing Fast

Increase in the U. S. fleet since Pearl Harbor is impressive, says "Jane's Fighting Ships." Gun-power of new battleships is terrific.

➤ THE IMPRESSIVE growth of the U. S. Navy since Pearl Harbor is strikingly shown in the 1943 American edition of *Jane's Fighting Ships,* standard British reference work, newly issued in this country. (*Macmillan*)

Topping the list are eight massive battleships and 11 new fleet plane carriers, with a dozen or more additional carriers on the way. At the "little end" are veritable swarms of the craft that make U-boats submerge—permanently: 200 destroyer escorts, 600 sub-chasers. Along with them are listed 200 of another kind of aquatic wasps—motor torpedo boats.

The list of fleet plane carriers does not include the numerous "aircraft escort vessels" created by the conversion of uncompleted 17,600-ton merchant ships, which have done much to win the Battle of the Atlantic from the U-boat packs. Thirteen of these are listed by name, besides "others of which names have not been reported."

Jane's lists all six of the battleships of the 35,000-ton North Carolina class as now in service, together with two of the later 45,000-tonners, the Iowa and the New Jersey. These eight new ships pack more power in their 72 main-battery guns than the ten battleships of Japan's pre-war navy had in the 94 heavy-caliber guns they mounted. A little rapid pencil-and-paper work indicates that the American array of new 16-inch weapons can throw more than one and one-half million pounds of steel at one discharge; the combined batteries of the Jap ships, consisting principally of 14-inch guns, fire a total broadside only a little over one and one-third million pounds. Or in terms of destructive power loosed per broadside, the American guns develop somewhat more than eight million foot-tons, as against only seven million for their Jap opposites.

The section on war losses shows some impressive box scores against the enemy. *Jane's* credits American fighting ships with the destruction of two battleships of the Kongo class off Guadalcanal, but does not admit as substantiated the Army's claim to the destruction of the Haruna in the first days of the Philippine fighting. Jap carriers sunk are listed as five certain and two "possibles." Between 30 and 35 cruisers, and 70 and 75 destroyers, are set down as the Allied toll of the Japanese lighter ships, though with the cautionary note that in these categories accurate tallies are difficult to make under battle conditions.

Among the photographs of warships customary in naval publications there is one of rather unconventional type. It is the only known photograph of the Japanese carrier Syokaku, and was supplied by the U. S. Navy. It shows the big craft staggering through a giant geyser of spray and smoke thrown up by a big bomb that scored a near-miss.

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WINGED CARGO—Here is an interior view of one of the new "cargo-liners" with which United Airlines recently inaugurated a coast-to-coast all-cargo schedule for essential wartime mail and express. The Douglas DC-3 planes, stripped of passenger furnishings, carry three tons of freight, as compared with the average 1,400 pounds transported aboard one of the regular passenger planes.

PUBLIC HEALTH

Drinking Water Should Be Kept Pure to Avoid Typhoid

➤ A GENERATION ago, fall was the big typhoid fever season. Today typhoid fever cases are rare, due chiefly to the fact that water supplies in our cities and towns are carefully protected from pollution. In small towns and on farms, most families have their own water supply, and must be careful of it or the family, and the neighbors too, will be in danger of typhoid and of other diseases spread by polluted water, such as dysentery.

If you have always lived on the farm and had a good well, you are probably proud of its cold, clear water and sure that it is safe. You may even boast that no one ever got sick from drinking water from your well. Remember, however, that the walls of the well may crack, and if they do, polluted water, perhaps from the privy, can seep in. The U. S. Public Health Service calls attention to this danger in a new pamphlet on safe water.

Play safe by having your health department inspect the well from time to time. The wall of a cistern should be inspected every time the cistern is cleaned, the health service advises.

City people who have moved to the

country or to a house just outside town and its water supply are especially likely to be ignorant of the dangers of unsafe water supplies. Polluted water can look safe, smell safe and taste delicious and yet be as dangerous as a drink of poison. Just because the water bubbles from a spring or runs in a fairly swift current down the stream does not mean that it is safe.

Water can be made safe by boiling but many people do not like the taste of boiled water. Boiling the family water supply is something of a nuisance and there is always the danger that someone will carelessly or ignorantly drink the unboiled water. So, if you have your own family water supply, consult your health department and follows its advice.

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PUBLIC HEALTH

Public Needs Protection

Public Health Service expert urges that new textiles should not be put on the market until they are tested for skin irritating properties.

➤ WORKERS with textiles and the public using textiles should be protected from finishes which irritate the skin, Dr. Louis Schwartz, chief of the Dermatosis Investigations Section of the U. S. Public Health Service urged at the National Safety Congress meeting in Chicago.

Protection can be given the worker by mechanical devices, machines designed to keep the worker away from the chemical being applied, or impervious protective clothing, Dr. Schwartz pointed out.

The public which will use these textiles should be protected by having the new finishes tested for their skin-irritating properties before they are put on the market.

Several outbreaks of dermatitis have developed since the war began among workers sewing on a material on which water-proof finish was being used. In other instances workers sewing heavy water-proof duck developed dermatitis because the duck was finished without final washing and drying.

We now have crease-proof finishes, run-proof finishes, fire-proof finishes, mildew-proof finishes and a number of others, the speaker pointed out. "The chemicals used for these finishes all have possibilities of causing dermatitis," Dr. Schwartz said.

The finish should be first tested on animals to determine if it is a primary skin irritant and thus avoid its use on fabrics coming in contact with the skin, he explained. If it passes this test successfully, patch tests should be performed with the finished fabrics on a number of individuals to find out how many cases of dermatitis develop. The same subjects would be re-tested ten days later to determine the skin sensitizing properties of the finish.

The safety record of men with serious physical handicaps is above average, Dr. H. A. Vonachen, medical director of the Caterpillar Tractor Company, told members of the Congress. They make good workers, and absenteeism is low. A survey has been conducted by the Caterpillar Tractor Company to find the jobs that the physically handicapped are capable of performing, so that men returning from service with handicaps may be employed immediately.

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MEDICINE

Red Blood Cells Heal

Infected wounds and unhealed amputation stumps are successfully treated with powder salvaged from plasma production.

➤ SUCCESSFUL use of a blood powder from red blood cells, salvaged from plasma production, in speeding wound healing is reported by Dr. T. H. Seldon and Dr. H. H. Young of the Mayo Clinic.

The red blood cell powder is either dusted on the wound or applied with a sterile spatula. One or two applications are made daily and the wound covered after each with a dry, sterile dressing.

A five-inch-wide varicose ulcer, which almost encircled a patient's leg and had been present for eight years in spite of treatment by the usual accepted methods, was almost completely healed in eight weeks by daily application of the red blood cell powder.

The blood powder has also given good results in a number of wounds following surgical removal of pilonidal cysts and fistulas. Infected wounds, amputation stumps that were not healing, and open chest wounds are among other types treated.

The results are not uniformly beneficial. In three cases the powder caused such severe, irritating, burning pain that it had to be discontinued. The Mayo Clinic doctors believe, however, that further study of the use of the red blood cell powder is warranted. The possibility of using red cells from other than human blood, such as beef blood, so as to have a supply when the source of human blood cells drops off after the war, should also, they suggest, be investigated.

The use in wound treatment of red blood cells salvaged from plasma production was first suggested and tried by Dr. J. J. Moorhead and Dr. L. J. Unger, of New York City. These doctors used the cells in the form of a gelatin-like mass. Difficulty in keeping this semi-liquid material from being absorbed by the dressing or running out of the wound led to development, by Dr. A. E. Osterberg of the Mayo Clinic, of the red blood cell powder.

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INDUSTRY

Franklin Institute Awards Medal for Management

➤ THE VERMILYE MEDAL was awarded at the Franklin Institute to the president of the world's largest telephone system. "In recognition of outstanding contribution in the field of industrial management," the award was given to Walter S. Gifford, president of the American Telephone and Telegraph Company.

The medal was awarded by William M. Vermilye, vice-president of the National City Bank of New York. Lewis H. Brown, president of Johns-Manville Corporation, was its first recipient in 1939.

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