

GENERAL SCIENCE

# Need American Efficiency In Planning For Defense

## Germany's Industrial Techniques Were Largely Made in America; Our Task Now To Outplan All Plans

WITH defense plans progressing speedily in Washington, even if the details necessarily are not too widely broadcast, there is prime need of the application of American-created principles of scientific management to the production for defense and armament.

The airplane used so effectively by Germany was essentially, even as recently developed, an American product in its scientific principles. Efficient organization for industrial planning and accomplishment with machines is American in its roots and finest flower.

With brutal purpose and dictated objectives, the German industrial organization was captured and put to work with deadly results. The irony of it is that the techniques used in German industry were largely made-in-America with the purpose of making men secure and free in their work.

Now America's task is to outplan all

other planning, in the words of Wallace Clark of New York, international industrial consultant, who spoke a few days ago at the Stevens Management Conference.

A French writer is quoted as saying that "What the democracies fail to realize is that they are up against planning—not Nazism or totalitarianism but a plan."

A high degree of proficiency is required to set up new producing plants or to change over existing facilities to meet new requirements. But Mr. Clark considers even more difficult the task of setting up a central coordination and control of this vast undertaking.

In this there are four steps, steps that are worth remembering because they are fundamental to doing anything efficiently in this busy world:

1. Securing agreement on what is to be done.

2. Formulating a program.
3. Fixing responsibility and providing the necessary equipment, materials and labor.
4. Carrying out the program in the time allowed.

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GENERAL SCIENCE

## Army, Navy Take Part In Defense Research

BRIG. GEN. G. V. Strong, assistant chief of staff of the Army, and Rear Admiral Harold G. Bowen, director of the Naval Research Laboratory, Anacostia, D. C., are the representatives of the War and Navy Departments upon the newly-created National Defense Research Committee charged by President Roosevelt with correlating and supporting "scientific research on the mechanisms and devices of warfare."

Dr. Richard C. Tolman of the California Institute of Technology was elected vice-chairman of the new committee at its first meeting, and Dr. Irvin Stewart, former Federal Communications Commissioner and chairman of the Committee on Scientific Aids to Learning, was made secretary.

Adoption of a resolution asking the cooperation of the National Academy of Sciences and the National Research Council in carrying out the duties of the committee was announced by Dr. Vannevar Bush, chairman of the committee and president of the Carnegie Institution of Washington. Other committee members are: President Karl T. Compton of Massachusetts Institute of Technology, President James B. Conant of Harvard University, Dr. Frank B. Jewett, president of the National Academy of Sciences, and Commissioner of Patents Conway P. Coe.

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ENGINEERING

## Launch Education Program On Use of Turret Lathes

See Front Cover

THE BOTTLENECK in industrial production about war or peace supplies occurs in machine tools and the men to run them. It takes a long time to train a good machinist. Any aid in training of apprentices or increasing the skill of experienced operators will help America's rearmament program.

Although better known to the general public as builders of telescopes, the Warner & Swasey Company of Cleveland



NATIONAL DEFENSE RESEARCH COMMITTEE

The first meeting of the men who will correlate scientific research on mechanisms of warfare. They are: (seated, left to right) Brig. Gen. G. V. Strong, Dr. James B. Conant, Dr. Vannevar Bush, chairman of the committee, Dr. Richard C. Tolman, vice-chairman, Dr. Frank B. Jewett and (standing) Dr. Karl T. Compton, Dr. Irvin Stewart, secretary to the committee, and Rear Admiral Harold G. Bowen. Also on the committee is Commissioner of Patents Conway P. Coe.

builds many of America's machine tools, particularly lathes. They have just launched an effort to help in making the nation's 55,000 turret lathes more useful by furnishing lecturers, textbooks and a monthly journal to all such machinists. An illustration from a textbook appears on the front cover of this week's SCIENCE NEWS LETTER.

Turret lathes combine all the features

of the ordinary lathes with tooling equipment which makes possible production of duplicate parts in quantity. It is a paradox that whenever the metal working industries reach a high level of operation it is impossible to find enough properly trained skilled mechanics although millions of men are looking for work.

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GENERAL SCIENCE

## American Research Leaders Reviewing British Experience

Nearly a Thousand Names in Britain's Central Register Of Specialists; Plan Now Receiving Study Here

OVER a year ago Great Britain's Ministry of Labor created a list of Englishmen whose scientific, technical and professional qualifications would be particularly valuable in time of war.

Nearly a hundred thousand names were contained in the central register of specialists, as it was called, and about a tenth of these were those capable of engaging in scientific research. Enrollment on the register was not compulsory but voluntary.

When war came to England, both the

government and essential industries turned to the register to obtain competent and qualified additions to the staff. As war produced dislocations, those who lost jobs were able to find others through being listed on the register.

In some cases certain kinds of scientists, such as biologists, whose primary talents were not of immediate and direct aid to the military preparations, were put to tasks in which they previously had had merely a hobby or secondary interest.

While there are some kinds of experts for which there was a demand far beyond the supply, the disorganization of the early months of the war created a large amount of unemployment among scientists, particularly biologists and chemists, who were connected with educational, industrial and governmental laboratories in which work not connected with the war was severely curtailed.

For this reason, shortly before Hitler invaded Holland and Belgium, scientists were allowed to enlist in any of the British military forces in any capacity, whereas at the beginning of the war specialists and experts could serve only in the particular occupation in which they were proficient.

Those organizing American research efforts directed toward national defense are known to be reviewing British experience with such mobilization of scientific skill and brains. Prof. A. V. Hill, secretary of the Royal Society, who was chairman of the scientific committee cooperating with the central register of specialists in London was in the United States for several months this spring and conferred with American scientists.

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AERONAUTICS

## Lending Library to Speed Aviation Progress

TO SPEED aeronautical defense developments, the Institute of the Aeronautical Sciences is establishing a book-lending service available to aeronautical engineers, pilots and students, Maj. Lester D. Gardner, executive vice-president, has announced.

Over 2,000 aeronautical books will be available for distribution by mail and over 100,000 books on general engineering can also be borrowed through an arrangement with the Engineering Societies Library. The Institute, located at Rockefeller Center, also has a reference library of over 10,000 aeronautical books.

The new aeronautical literature lending service, which will include reviews of new books and digests from aeronautical journals, was made possible by an endowment of \$50,000 by Paul Kollsman of New York City and Greenwich, Conn., and the Square D Company of Detroit. Mr. Kollsman is known in aviation circles as a manufacturer of precision aeronautical instruments, most used of which is the sensitive altimeter which gives altitude within five feet.

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ELECTRIC SWITCHING LOCOMOTIVES

The current is supplied by their own Diesel power plants. They are now available in two sizes—660- and 1,000-horsepower, designed for at least 8,000 hours per year of operation, with speeds up to 35 miles per hour. Even more powerful, intended for transcontinental freight service, are the 5,400-horsepower Diesel-electric locomotives recently made for a western railroad.