The Story of D.W. ONAN and SONS

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American Freedom

American Production

THIS Booklet is dedicated to winning the war, to encouragement of war bond purchases, to men of the Onan organization now fighting for freedom and to those present Onan men and women on production assembly lines.

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NEARLY 25 years ago, D. W. Onan & Sons entered the industrial and manufacturing field and the subsequent building of light and power generators. In a barn in the north section of Minneapolis, D. W. Onan assembled bits of equipment and machinery obtained by a small loan. It was a "one-man" shop. He solicited business with meager success. Later he moved his shop to the basement of his home where his two sons, Bud and Bob, helped Dad produce at night the units sold by day.

WITH the advent of A. C. radio sets, demand rose from rural communities for electric generators of the portable, gasoline-driven type. Domestic use of Onan generators grew with rapidity. A small factory building was erected adjacent to the Onan frame house and production began in earnest.

MAGICALLY, Onan generators found their way to all parts of the planet, providing light and power in 49 foreign countries. The United States defense program and requirements of Allied Nations brought heavy demands for the Onan portable generator. With advent of December 7, 1941, full production at expanded plants was shifted to full war production for the United Nations. A peacetime commodity, used in normal pursuit of happiness in homes and on farms and in industrial concerns, the Onan generator is now garbed in field dress for action on war fronts and military centers. Sixty-five dif-

on war fronts and military centers. Sixty-five different models are now produced for 41 branches of the service for use on land, sea, and in the air.

EARLY MANUFACTURE

THE MANUFACTURE of many types of mechanical equipment preceded the building of electric generating sets by D. W. Onan & Sons. Shown above are several automotive maintenance tools first built by Onan. At left, Dave Onan is shown operating a crating room and contractors' saw, many of which are still in use throughout the world. Below are shown several early models of Onan generating sets.



FIRST ASSEMBLY LINES in Onan's first full-scale production brought the large type generator into general use. Shipped mainly to South America, these generators carried heavy loads on construction and communication projects of all kinds. High quality generators has been the rule since inception of Onan units. Expansion brought full speed ahead. Peace-time production changed overnight to war production to give power and light to our fighting men. Units now produced range from 350 watts to 35,000 watts.

Dave Onan

D.W. ONAN founded the firm on \$100 borrowed capital. Today he operates the world's largest manufacturing concern building gasoline engine-driven electric generating plants only. Dave is on duty seven days a week . . . can operate any one of the factories' machines, perform any single operation in Onan generator production. One of the city's leading civic organization leaders, he has gained a full reservoir of Minneapolis good-will.



Bud

C. W. ONAN has full responsibility of production for his Dad. His knowledge of engines and generators makes him one of the country's top experts.

Bob

R. D. ONAN, younger of the two sons. is personal director and handles all matters of public contact and promotion. He discharges many of his father's duties.





Key Men



FINANCIAL DETAILS and cost accounting is the responsibility of Verne Aanenson who heads a staff of office employees in air-conditioned, sound-proof offices.

G. H. KING is assistant to Bud Onan. He answers the government's questions . . . what do you have? . . when can we get it? . . . how much does it cost?



PLANT ASSISTANT to Bob Onan is Harry Horsley who assists workers with all problems of personal or business nature. His work is important in maintenance of high morale.



FIRST and only secretary of D. W. Onan is Mrs. Nell Tangen. Her responsibilities are heavy and, as all good secretaries, knows her boss "like a book."



PALMER STARK has grown up with the Onan family. Years ago he watched over Bud and Bob as youngsters. Now he superintends one of the plants.





PURCHASING AGENT is Harry Jacobson (above).



MACHINE SHOP and tool and die production is the responsibility of Steen Eklund (above).



OLDEST EMPLOYEE in service, Onan's first office boy, is Julius (Dyke) Grabow (above). Dyke produces all manuals, handbooks and catalogues.





COST ACCOUNTING OFFICE (above) keeps close tab on unit costs and expenses to give the government maximum of product efficiency for minimum cost.



PURCHASING AND BILLING departments (above) keep production rolling, seek out needed materials and provides sufficient stocks to make unit deliveries per schedule.

GUARDS at front office reception room interview callers, pointquick appointments and issue office passes.

FIRST general office (right) has been remodeled to conform with standards of recent expansions,

FULL-TIME plant photographer (below) keeps busy preparing identification badges for all employees.







ALL PLANT and front office workers are registered at entrance gates, guarded 24 hours a day.







Exactness By Skilled Machinists

DRILLING ... TURNING

... increasing the production tempo in the plants' machine shops. Onan electric plants are of the highest quality. Finished generators are used for portable, stationary or emergency stand-by services. Requirements are heavy for war use, performance must be dependable.

THE VAST QUANTITIES of war supplies turned out by Onan rate their high performance commendations because of precision manufacture and operation. Multiple drill presses save time. Castings, received from the nation's top sub-contractors, are finished by and in Onan machine shops.

PLANT SCHOOLS for tool and die makers turn out trained specialists for the Onan organization. Work of an apprentice (above) is checked by a youthful night foreman. Day shift foreman (lower left) works closely with early employees and new tool and die makers alike.

> TOOL AND DIE department is constantly expanded to meet ever increasing needs of production machine installations.

GRINDING AND WELDING for precision, accuracy, for materials that will stand up under combat duty. Onan generators are lightweight, rugged, compact and heavy-duty.



PLANTS OF D. W. ONAN & SONS build generators from start to finish. Each unit is "born" in the Onan organization. Each generator part is machined, every armature and field is wound by Onan. As-

sembly of parts to produce the final product is but one step in generator production. Transformation of wire, steel, castings, etc., into generators is performed in the Onan plants. Each Onan generator contains Onan workmanship and materials from start to finish. The following pages show actual construction methods of unit parts.

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ONE OF THE FIRST STEPS in production is machining and perfection of generator housings for larger units.

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PUNCH PRESS day and night foremen (above right) operate their department at its peak to provide initial process in production of Onan generators. Newest type, automatic presses give this department its outstanding record of keeping ahead at all times. Unique, practical safety guards result in 100% safety.

NUMBER OF LAMINATIONS for armature and field assemblies is re-checked by weight to insure fullbalanced generating performance. No supervisor jobs for foremen . . . they work side-by-side with their men.

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RIG

FROM ARMATURE ASSEMBLIES and copper wire come the units which make their way along production lines to the front lines. Each armature, before wiring, gets a series of basic tests which make for efficiency of unit operation.

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THE INTRICATE processes of winding armatures and fields is carried on by generator production foremen and workers alike. Wire and generators are synonymous to bullets and guns.







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NIMBLE FINGERS of women have increased armature windings production as much as 50%. Fred Anderson (left) of personnel staff is shown with Mrs. Harold Paukert, first woman plant worker in the Onan organization. Mrs. Paukert has the same job her husband, sow in U. S. Army, held for two years.

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WATCH-LIKE precision and accuracy whether in armature or carburctor assemblies results in highest grade construction and attention to infinite detail by hundreds of women . . . housewives . . . sweethearts of servicemen.

DYNAMIC BAL-ANCING of generator rotors insure fine performance, smooth running of finished Onan electric generators. Testing follows each progressive phase of manufacture to send trouble-free, uninterrupted service to fighting forces.



DIPPED in moisture proofing preparation, armatures are baked in ovens to insure long-time operations under all weather conditions, regardless of humidity or temperature extremes.







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Motor Assemblies .

GASOLINE MOTORS which drive the generators are built from start to finish in Onan plants. Forty types of internal combustion engines are manufactured and assembled by expert mechanics on Onan assembly lines. The motor units, combined with generators and controls, incorporate everything needed in a modern power plant.



FROM THESE EVERYDAY OPERATIONS at plants of D. W. Onan & Sons come the light and power for all branches of American and Allied Nations fighting forces. They give the light in field hospitals to enable surgeons to perform delicate operations, they operate X-ray machines. On every Allied war front, these units supply current for light, motors. They operate telephone and radio communication systems. The same peace-time Onan generators now are giving service on the front lines . . . clad in olive drab, otherwise the same.



ASSEMBLY of instrument panels and spray painting in regulation colors move generator units near completion.



LARGE GENERATOR SETS move closer to the war front lines with workmen putting together component parts on the final assembly floors on Onan plants.


COORDINATION and close proximity of all assembly lines, including motor assemblies, sub-assemblies, armature winding and all phases of generator production, makes for fullspeed production, eliminates bottle-necks.

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EVERY NUT AND BOLT for final assembly is inspected by workers and foremen. Ammeters, voltmeters, and all visual instruments must be in perfect working order.

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World's Largest Test Room

"ONAN'S JEEP



EACH ONAN GENERATOR is operated for a specified period before being sent to the field. Hundreds of large units are tested here daily to insure trouble free, uninterrupted service. Master-control gasoline feeds and "gang" exhausts permit attachment of a full compliment of complete units for running tests.

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INDIVIDUAL ATTEN-TION is given each unit in the World's Largest Test Room. Full-output operation, plus meticulous inspection assures efficient fieldperformance.

¥ ¥ MAJOR AND MINOR adjustments and accom-plished by top-notch foremen and govern-ment inspectors on all units. Foremen com-pile test records and an accurate tab is made of test room unit opera-tions and all adjust-ments permanently set.

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THE SEARCH FOR IMPROVEMENTS, new manufacture methods and means of stepping up efficiency of operation continues on full shift by specialists in Experimental Engineering. Modern engineering and precision workmanship of Onan units is constantly improved, day by day and week by week, to guarantee that our fighting forces are supplied with the world's finest and most modern electric generators.



IN FRIGID ZONES, generators must give the same efficient operation as in warmer climates. Wherever our forces may be advancing, from equatorial to arctic zones, temperature extremes have little effect on proper operation of Onan units. This "freezer room" (above) reduces temperatures to as low as 65 degrees below zero . . . 97 degrees below the freezing point!



SHIPS AT SEA, planes, tanks are quickly supplied with completed electric generators. Packing and shipping start units direct to destination points here and abroad. No delay, no piling up of orders, no bottle-neck.

INTERCHANGE of unit assemblies by truck between the five Onan plants and quick shipment is accomplished without delay at this loading platform (above), one of the latest additions to Onan operation efficiency.

OFFICE



10 per cent of earnings in war bonds. Here is presentation of 10% Minute Man award with U. S. Treasury, Federal Reserve bank, city, military and civic officials participating.

ONAN EMPLOYEES invest at least

"... you are settling the pace on the home front as well."... A. J. REYN-OLDS, state administrator of war savings staff. "You are 100% in production and 100% in the investment in the tuture of our country." . LT J. A. ZURFLEU: naval ordnance executive officer.

"You are instrumental in helping Minneapolis maintain its high national rating in war bond purchases." ... MARINER CLARK, Federal Reserve bank. "You of the Onan organization are doing more than your share. . . Minneapolis is proud of you. MAYOR MARVIN L. KLINE.



from the largest units units of 35,000 watts (above) to the smallest 350 watt units (right), in popular use in Mexico, these generators, before Pearl Harbor, turned darkness into light in 49 different countries, producing power for equipment ranging from lawn mowers to homes, hospitals, trucks, telephone systems, dental clinics, theatresóthe list is almost endless. Now these olive drab and navy gray units have turned their generated power into fighting the Axis.

The vanguard of civilization along the Burma road, in deep Asia, the Siberian steppes, in Australian mining fields before December 7, 1941, Onan generators have turned to help the defeat of barbarism and the enemies of earthly civilization.











D.W. ONAN &

Its' Sub-Contractors

FIFTY-ONE SUB-CONTRACTORS and 350 other firms manufacture and supply innumerable items of equipment for Onan generators. Without the excellent quality materials, quick delivery and common understanding of war production requirements, schedules could not be maintained by Onan and high quality generators could not be pushing their way through assembly lines for ultimate war purposes.

American Farm Machinery Co. st. paul, minn.

Armature Rewinding Co. minneapolis, minn.

Atlas Manufacturing Co. st. paul, minn.

Automatic Electric Mfg. Co. mankato, minn.

American Welding & Mfg. Co. warren, ohio

Anaconda Wire & Cable Co. muskegon, mich.

WM. BROS BOILER MFG. CO. MINNEAPOLIS, MINN.

Cedarberg Manufacturing Co. minneapolis, minn.

Central Body Co. minneapolis, minn.

Continental Motor Co. muskegon, mich.

Donaldson Co., Inc. st. paul, minn.

Earll Manufacturing Co. minneapolis, minn.

Excel Auto-Radiator Co. minneapolis, minn. Foley Manufacturing Co. minneapolis, minn.

Gilbert Manufacturing Co. stillwater, minn.

Gregg Manufacturing Co. st. paul, minn.

GROSS-GIVEN MANUFACTURING CO. ST. PAUL, MINN.

Hamilton Manufacturing Co. two rivers, wis.

Highway Safety Appliance, Inc. minneapolis, minn.

HART CARTER CO. MINNEAPOLIS, MINN.

R. C. Hitchcock & Sons minneapolis, minn.

C. J. HOIGAARD COMPANY MINNEAPOLIS, MINN.

Hartman Electrical Mfg. Co. mansfield, ohio

M.A.C. Company minneapolis, minn.

Millerbernd Bros. winsted, minn.

Milwaukee Lace Paper Co. milwaukee, wis.



Its' "Kinfolk"

NEARLY 4,500 EMPLOYEES of sub-contractors work full time at their separate factories in production of items for shipment to D. W. Onan & Sons. Although these workers are not members of the Onan organization, D. W. Onan & Sons considers them as "kinfolk" . . . as much interested in producing the world's best generators for our government as the Onan organization itself.

MINNEAPOLIS ELECTRICAL STEEL MINNEAPOLIS, MINN. SALISBURY SATTERLEE CO. MINNEAPOLIS, MINN.

MINNEAPOLIS-MOLINE POWER CO. MINNEAPOLIS AND HOPKINS, MINN.

MODERN DIE & DROP FORGE CO. BLUE ISLAND, ILL.

North Star Specialty Mfg. Co. MINNEAPOLIS, MINN.

Northwest Automatic Products MINNEAPOLIS, MINN.

Northwest Plastic, Inc. ST. PAUL, MINN.

NEWTON MANUFACTURING CO. NEWTON, IOWA

PERFEX CORP.

MILWAUKEE, WIS.

PIERCE GOVERNOR CO. ANDERSON, IND.

Powell Muffler Co. UTICA, N. Y.

PAUL PUFAL & SONS FOUNDRY ST. PAUL, MINN.

QUEEN STOVE WORKS ALBERT LEA, MINN.

RAO MANUFACTURING CO. MINNEAPOLIS, MINN.

H. J. Shotwell Company MINNEAPOLIS, MINN.

SMITH SYSTEM HEATING CO. MINNEAPOLIS, MINN.

STANLEY IRON WORKS MINNEAPOLIS, MINN.

STATES ELECTRIC CO. MINNEAPOLIS, MINN.

STREMEL BROS. MFG. CO. MINNEAPOLIS, MINN.

STANDARD IRON & WIRE WORKS MINNEAPOLIS, MINN.

TOLEDO STANDARD COMMUTATOR Co. TOLEDO, OHIO

TORO MANUFACTURING CO. MINNEAPOLIS, MINN.

UNIVERSAL FOUNDRY CO. OSHKOSH, WIS.

WESTERN SPRING MEG. CO. MINNEAPOLIS, MINN.

ZENITH CARBURETOR CO. DETROIT, MICH. HONOR ROLL

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'ROUND THE PLANET OF EARTH Onan generators provide light and power.

D.W. ONAN & SONS GENERAL OFFICES: 43 ROYALSTON AVENUE MINNEAPOLIS, MINN., U.S.A.