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H. JACKSON

B-29...The Boeing Superfortress

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IN THIS ISSUE

THE BRIEFING

Take Off For Wichita

The number of additional "subscriptions" to the Boeing Magazine this month would put platoons of boys through college— except that the magazine is distributed free. The readership jump is all in one spot—Wichita, where the Boeing plants have an employee count as large as the Seattle division.

This and succeeding issues will be delivered to employees at the Wichita plant as well as at Seattle, Renton and the branch plants. The magazine is aiming at items of significance for employees in all plants that are engaged in Superfortress work. The only Boeing organization not in this lineup is Boeing Aircraft of Canada, which is busy making PBYs for the Royal Canadian Air Force.

As many employees haven't had a chance to find out much about the other divisions of the Boeing company, the *Boeing Magazine* will carry information on the various plants for all readers.

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Trailblazer

Pilot of the first Superfortress that lifted its wheels from the runway of a Chinese airfield on the way to Yawata, was a man a lot of Boeing people will remember.

Col. Leonard F. Harman led the first group of B-29s to take off on that flight. Briefing his men before the raid Harman said, "We are going to hit the biggest steel mills in the Japanese empire. And if you put your cookies on the target it will be at least 14 months before the Japs can replace the loss." Then he added, "If there ever was a juicy target, this is it."

Col. "Jake" Harman, Col. A. D. Olson, two crew members.

This was the same man who was flying B-29s around at Boeing much of last year. He had been following the B-29s all the way through, from testing to leading it into its first battle. As chief of the production engineering section, bombardment branch, Materiel Command, at Wright Field, Ohio, Colonel Harman made many trips to Seattle during the early days of the development of the B-29. He made the first army test flight of a Superfortress on June 6, 1943, in Seattle and later he performed many of the army's extensive test flights on the airplane.

The photograph on the left was taken on June 27, just before Colonel Harman flew an early B-29 from Seattle to Wichita on the first long distance flight ever made by a Superfortress.

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Redesigned Skin

The monthly *Boeing News,* as of this issue, has changed its name to *Boeing Magazine.* It has also a new style cover. One reason for the shift to *Boeing Magazine* is to distinguish it from the *Boeing News,* weekly edition, and *Planetalk,* Wichita weekly. Another reason is that, with Wichita readers to serve, the monthly publication leans toward more general material and less in the way of immediate and local news. However, all the readers will be concerned with the same project, the B-29.

If the editors seem to have gone overboard on this subject, this time—well, it's certainly a relief that Boeing can at last talk about its Superfortress, and fill the magazine with B-29 portraits.

CONTRIBUTORS — *Photos: Vern Manion (cover, pages 2, 3, 4, 17); Dwight Krehbiel (page 5); Laura Gilpin (page 6); Acme (page 19). Artists: Carter Lucas, Harold Ellis and James Wandesforde.*

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An historic date in the annals of flight is pictured here: the first of the Superfortresses, the XB-29, was airborne for the first time September 21, 1942. The late Eddie Allen, Boeing director of flight and aerodynamics, was the test pilot who lifted it from Boeing Field, Seattle.

BIRTH OF THE B-29

You have to go back—not months but years—for the origins of "Chapter B-29" in the changing history of aerial warfare. Men of vision conceived and drafted it; men and women in many plants—plus the Army Air Forces—put action into this "chapter" to help close the story of World War 2.

By HELEN CALL

THE most important chapter of the aerial war to date has been the story of the Boeing Flying Fortress. A chapter that promises to be even more spectacular is under way now, with the Boeing B-29 Superfortress in combat.

From an historical standpoint, the B-29's importance may be expected to reach far beyond the realm of aviation itself. It is by now a generally accepted conclusion that the fall of Germany and Japan must be preceded by a weight of falling bombs that will virtually crush to death their industrial machines. The B-29's prospective role in this large slice of world history in the making could be read between the lines of General H. H. Arnold's promise that "the B-29 makes possible the softening up attack on Japan very much earlier than would be possible with aircraft hitherto known to combat."

Actually, however, the B-29 is not an aeronautical Johnnie-come-lately, yanked out of a hat as an answer to the Japs' Pearl Harbor challenge or the Nazis' Focke-Wulf. The B-29 first took shape on Boeing drawing boards in Seattle more than four years ago.

Even that date was not the actual start of the 29. Some company officials feel the ship traces back to 1936, the year after the original Boeing Flying Fortress, known as the Model 299, was submitted to the Army. It was then that preliminary design engineers began work on even bigger long-range bombers.

From October, 1936, to mid-'39, eight different large bombers reached the preliminary design stage at Boeing. One, the 87,600-pound XB-15, actually was built and flew its way to startling records in load-carrying and range. From these advanced designs, concocted while the Flying Fortress was being produced and carefully nurtured, Boeing engineers gained a tremendous amount of experience and found the answers to many a problem. The B-29 is the natural culmination of all this.

COLD SHOULDER

In those days military aviation in this country was eating out of a pretty bare cupboard. Congress hadn't yet seen what airpower was capable of doing, and was keeping a tight hold on the purse strings. Consequently, the Army was not in the market for new heavy bomber types. Boeing, which already had revolutionized the bomber business with its Flying Fortress, went ahead with its designs. With an eye cocked on the war clouds that were gathering so ominously, Boeing men felt that the hard-hitting air heavy was a necessity and they pushed it as fast as possible.

BOMBER BULL SESSION

In the spring of 1939, the Army was in a position to talk about actual airplanes with Boeing and other companies. Claire Egtvedt, then president and now chairman of Boeing, met with General Arnold at Langley Field, Virginia, for the first of a number of discussions on what the Army wanted in the way of a larger heavy bomber. He met with other Air Corps officials later in Washington and in Dayton.

By late 1939 the Army had issued a document entitled R40-B, a competition inviting aircraft companies to submit designs for a long-range bomber to supplement the Flying Fortress. With the invitation came the Army's requirements for performance, weight, carrying ability, range and armament. The 1939 concept of bomb load is scarcely believable in light of today's tremendous lethal tonnage and the weight the B-29 eventually was to succeed in lifting.

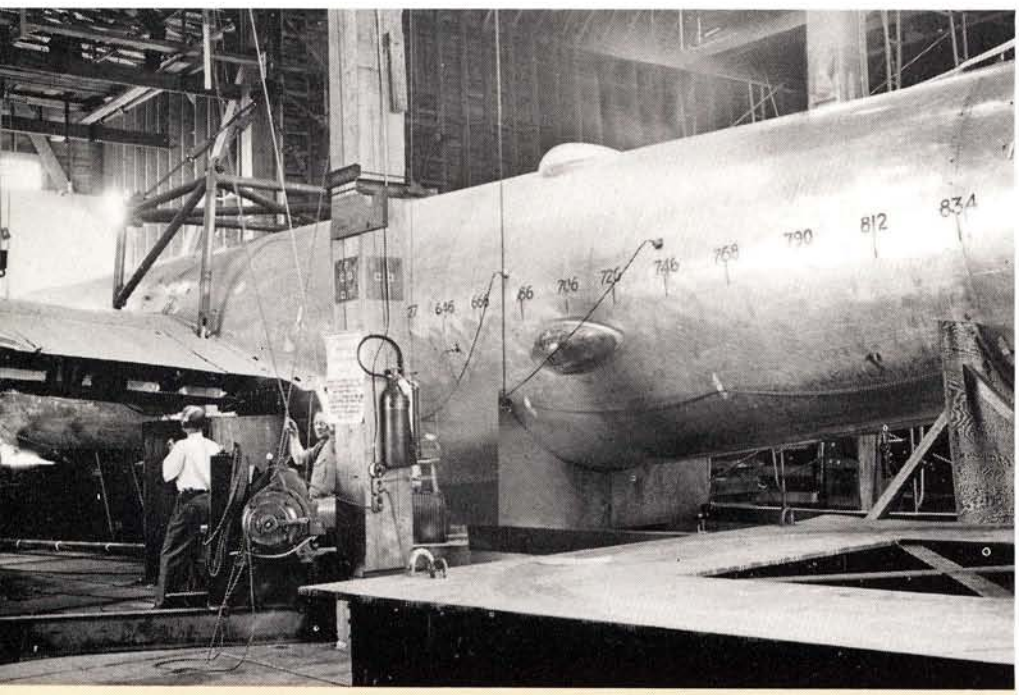
In December of 1939, Boeing showed the Army its new bomber design. This

was the Model 341, and it was radically different from anything the Army had seen in the past. But by that time the war in Europe was under way, the Army hastened to up its size and armament requirements for the plane. The companies who had submitted the most promising designs were asked to revise them accordingly.

AERONAUTICAL UTOPIA

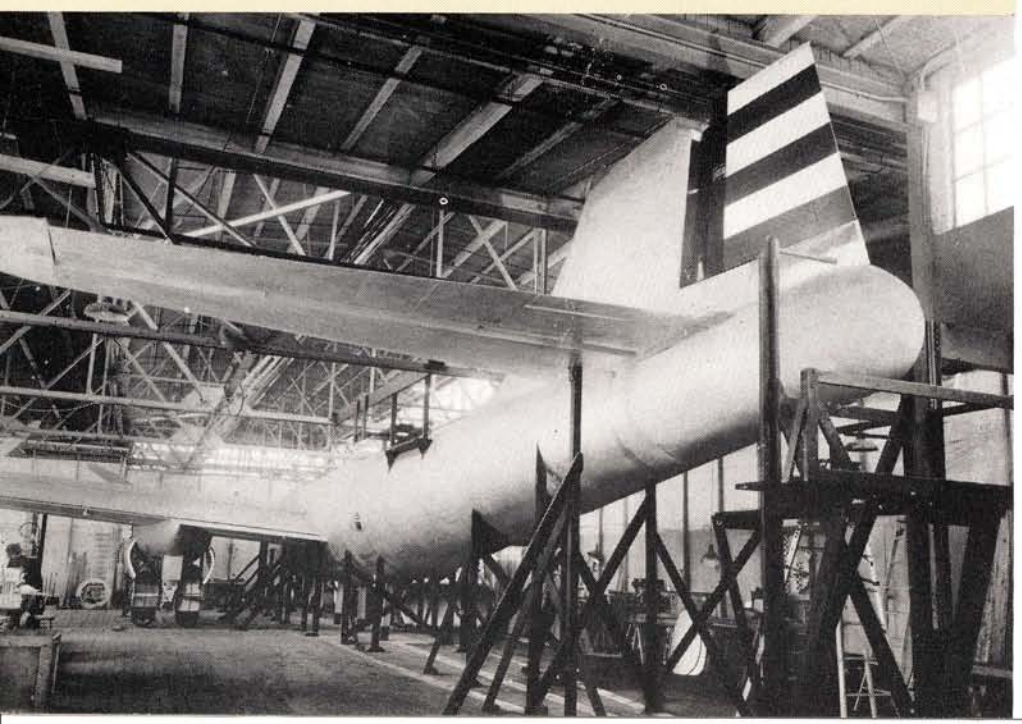
Boeing engineers went back to work, in what they knew was a race against time and against rapidly moving world developments. Their job was to turn out an airplane with characteristics that no other manufacturer had yet managed to roll into one plane—characteristics that in 1940 seemed virtually fantastic.

The Army was asking for speed and performance as well as tremendous load-carrying capacity, traits which normally do not go together at all. Besides, the new bomber had to be one that could be turned out in quantity. Designing the plane for easy and speedy construction was one of the biggest problems involved.



ABOVE—*The body of the B-29 is trussed in the "torture chamber" to be tested for gun fire absorption. All sections of the bomber also underwent stress and tortional tests.*

BELOW—*While the B-29 was being designed, a full scale, wooden model was built. This mockup gave engineers, toolers and production men the answer to many questions.*



In March, 1940, Boeing came up with its Model 345. Air Corps representatives came to Seattle, looked at the design and were happy. On May 15 they said, "That looks good; build us one." In July they produced a formal contract for the experimental model, to be known as the XB-29.

SAMPLE SUPERFORTS

Three of these X, or sample, models were to be built altogether. Almost before Boeing-Seattle's Plant 1 could get the blueprints unfolded to build them, a production and tooling program for the secret new bomber was begun. Never before had a production program of this scope been started when the airplane design was still being worked on, but there was no time to lose.

With the design in hand, and the manufacturing program developing, Boeing rushed ahead to get the experimental B-29s under way. Complete detail on the designs was not yet finished, wind tunnel testing was still going on. Besides these delays, materials were hard to get and experienced workers were rare. And the U. S. was crying for speed.

GROWING PAINS

The first experimental plane was something of a piecemeal proposition. The parts for which the designs were complete were made first, whether this was the logical sequence for airplane building or not. The plane almost literally grew up full of holes. Sometimes a section would have to be left out and filled in later when the drawing was finished and the part could be made.

When a work slowdown seemed imminent from lack of material, scouts were sent out on its trail. When the missing material was discovered on some lagging freight, it was jerked off and rushed to the plant by plane.

STEP-MOTHER PLANE

While the building of the three experimental ships was under way, each section of the plane already was getting a thorough testing. A B-17C was commandeered as a vehicle for testing the B-29's control surfaces. Models of the surfaces, scaled to B-17 dimensions, were grafted on to the Fortress and flown for tryout. Then ailerons and landing gear were given life-like test runs with other planes pinch-hitting for the unfinished B-29. When these models of Superfortress parts performed for the aerodynamicists, they indicated how they would fly on the full-size bomber.

Another type of tryouts was engineering's famous "tests to destruction,"

(Continued on Page 18)

Clean in flight as a silver bullet, the Boeing Superfortress resembles a huge, winged torpedo in this close-up photograph taken from another plane. Here the six great wheels of the tricycle landing gear are retracted, tucked behind their doors. Armament is still being deleted from all the B-29 photographs.

WORLD WIDE WINGS

Secrecy still shrouds many of its vital statistics, but here's a "fact sheet" that sketches what can be told about the Superfortress, now rolling out of Boeing plants and soaring away to far battlefronts.

EXACTLY what is this huge Boeing B-29, the Superfortress which has for the first time put Japan itself under the bombsights of land-based airpower? What sort of a sky giant is it that is important enough to bring about a radical reorganization of the Army Air Forces—the creation of a world-wide task force?

Briefly, the B-29 is the first plane ever built that combines tremendous size and tremendous carrying capacity with the speed of a fighter plane.

Not only is the Superfortress design extraordinary from a standpoint of performance; even though it is one of the most intricate of modern machines, it can be produced by quantity methods. It is the first aircraft ever to bat 1000 on these three all-important points: size, performance, and adaptability to mass production.

The B-29, as its first mission indicated, is designed for a different job than the B-17. It is designed for a job no other bomber in the world can do. For that job it carries a bigger bomb load, has longer range, higher speed and greater service altitude than any other bomber.

It is half again as big as the Fortress, and its gross weight is twice as much. The Superfortress' wing span measures 141.2 feet, its length is 98 feet and height 27 feet. In comparison, the B-17 has a wing span of 103 feet, a length of 75 feet and height of 19 feet.

Four great eighteen-cylinder, air-cooled Wright Cyclone engines power the B-29. Each is rated at 2000 horsepower and 2200 horsepower for takeoff, nearly twice the power of the Flying Fortress. The B-29 is equipped with the largest propellers on any present airplane. They are four-blade Hamilton Standard propellers with a diameter of 16½ feet. Each Superfortress engine has not one, but two exhaust-driven turbo superchargers. No single supercharger is large enough to take care of engines of such unprecedented horsepower.

Except for the hydraulic braking system, the new Boeing equipment is all-electrically operated. It is the nearest any plane has yet come to being all-electric.

Basic in the structure of the B-29 is

(Continued on Page 17)

WICHITA TO YAWATA

The Superfortresses that hit Yawata on the first strike at the heart of Japan came from Boeing's midwest plant at Wichita, Kansas. How those B-29s were produced is a story earmarked in manufacturing annals as a phenomenal job.

By REYNOLDS PHILLIPS

AT the heart of the Allied nations' big bomber program and the center of U.S. bomber production, has been Boeing. The remarkable success of the B-17 has accounted for this. Now the B-29 has become the most important war order in the country, and Boeing is swinging into full stride on the biggest production job ever handed a manufacturer.

Building the B-29 is no simple task. It is not a matter of just constructing a new style plane at the same old stand, in the same old way. This production problem was a brand new brain twister. A gigantic overall plan had to be devised with ideas and methods so new that building the B-29 is almost as revolutionary as its design.

Out in front, with completed B-29s ready for the army, has been the Boeing Wichita plant which produced its first Superfortress in June 1943. After company executives and production men at Seattle had worked out the giant plan for buildings, equipment and overall method, the job of actually putting the plan to work—turning theory into practice—was heaped into the lap of the Wichita plant.

The Wichita people picked up the challenge, set out to match the enthusiasm of U. S. citizens with planes. And not only did the Wichita people build every one of the B-29s that hit Japan in the mid-June attack, but they still are building the bulk of all America's Superfortresses while the other plants that were assigned later to the program are getting into full stride.

THE HEAVYWEIGHT RING

It is the greatest coordinated manufacturing enterprise in the history of American industry. Parts for the B-29 are pouring from hundreds of factories spread in a network clear across the United States. Completed super-bombers are, or shortly will be, rolling out the doors of four major aircraft plants, beside Seattle's part in the program.

The B-29 being a Boeing-designed product, it is only natural that a Boeing plant should be the first to build it in quantity. The way Boeing got started at the job, however, is one of the most extraordinary production stories of the war.

DELAY DITCHED

In getting the B-29 off the drawing boards, into the assembly jigs and finally into the air, Boeing squeezed what normally would have been a six-year program into just two years. The most remarkable feature of this was that production actually was under way at Boeing-Wichita while the experimental program on the B-29 was still being carried on at Boeing-Seattle.

To appreciate this fully, you've got to understand how it was in pre-war days when the Army Air Corps went about buying a new airplane. First the manufacturer built the X-models, the experimental ships, and let the Army study them thoroughly. If the Army liked them, it ordered a few more—after the original experimental program was complete. These few—known as the YB, or service test, models—were then turned over to various squadrons and flown like

It took a hundredth of a second to take this picture of fourteen B-29 Superfortresses lined up on the flight apron at the Boeing Wichita plant. For that hundredth of a second to come and go, there had to be long years of dreaming, planning, building, testing. Culmination of all that is the fleets of B-29's like these, which are presently engaged in changing the face of the entire world.

mad for a year. In that period the Army tried to work out the "bugs," learned all about the planes, and if it still liked them it was then ready to place a production order.

With the B-29, the Army moved, comparatively speaking, like a Panzer division. In July, 1940, it had given Boeing a contract to design and build an experimental bomber, the XB-29. The army sat on the edge of its chair hardly able to contain itself while the experimental models were being built. Finally, on May 18, 1941, the army decided the B-29 was going to suit them anyway, even though they hadn't tested it. They gave the go ahead signal to tool up for production.

WICHITA GETS UNDERWAY

This unprecedented pre-test ordering was a departure dictated by the imminence of war, and made possible by the army's faith in Boeing's ability to design and produce the best bomber in the world.

The army wanted this most important weapon built at an inland plant, so Boeing began preparations at Wichita. Earlier in the year the Wichita Division's Plant 2, a relatively small unit, had been erected for the production of Flying Fortress wings. Now, on June 24, 1941, ground was broken for the construction of a huge new factory, incorporating the smaller unit as one section of a completely modern, integrated aircraft manufacturing plant.

Through the rest of 1941 and into the next year, the plant was under top-speed construction. As fast as the contractors roofed over, trussed and paved a few square feet, jigs and tools for the B-29 were moved in. During the first ten months of 1942, Seattle rushed the major tool designs to Wichita where they were built and set up. Some of them were the biggest jigs ever to be used. At the same time, Wichita designed and got going much of their fabricating dies and sub-assembly equipment.

It was a brave program for a factory whose experience had been in the building of small planes, notably the PT-17 Boeing Kaydet, most widely used of all primary trainers. The Wichita folks got some big plane know-how through turning out the outboard wing panels, ailerons, elevators and rudders for the Flying Fortress through half of 1941 and part of '42.

B-29s NOSE OUT GLIDERS

More experience, in the form of a proving ground for new people, came in July, 1942, when Boeing began to build CG-4 gliders at Wichita. The gliders, destined for use in the European invasion, were assembled in the as yet unfinished Plant 2 and were literally pushed out of the plant by the oncoming B-29 production lines as the plant was finished and B-29 production got under way.

Meanwhile, through 1942 and early 1943, people were swarming into Wichita from Kansas, Oklahoma, Missouri and

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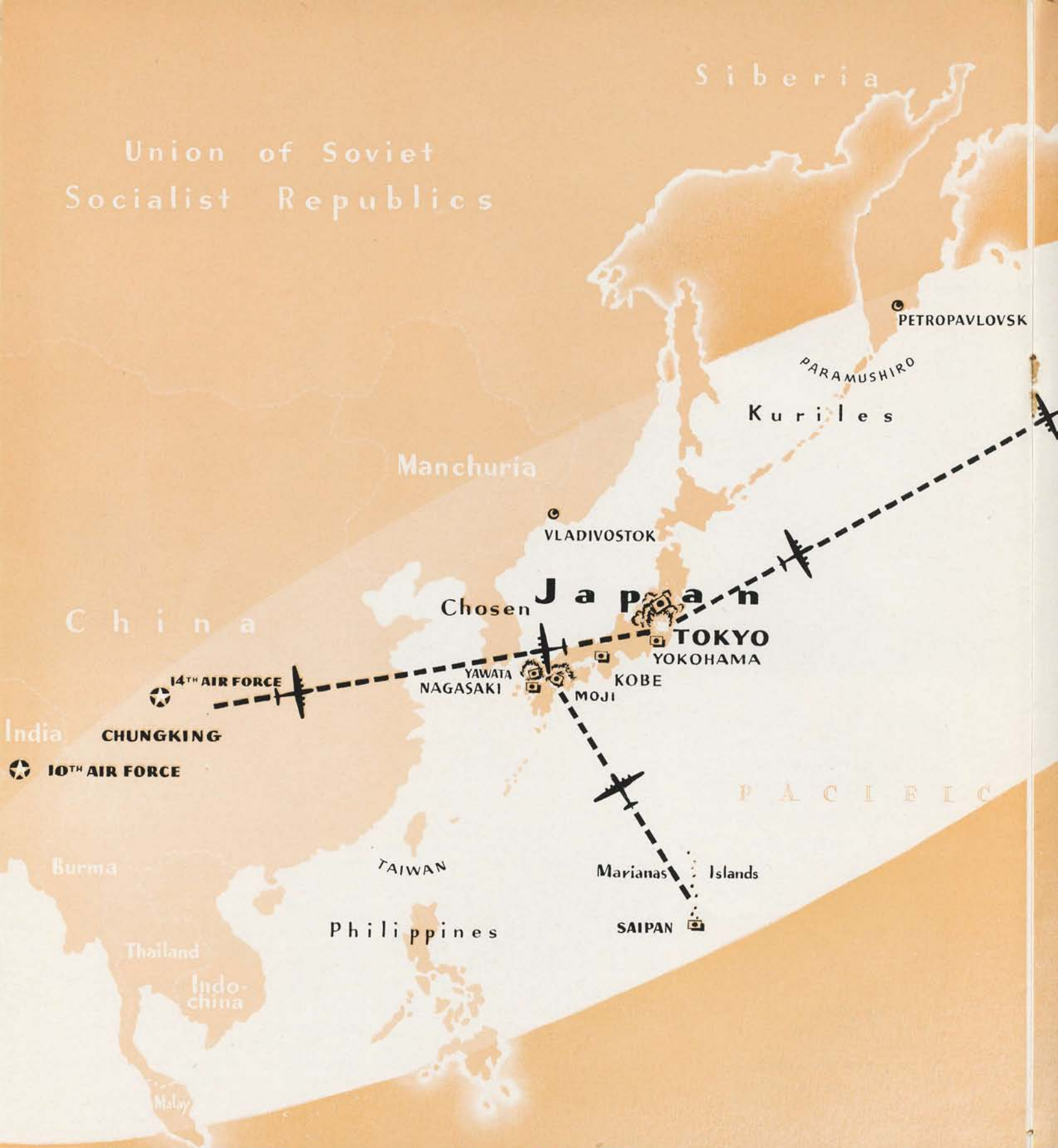
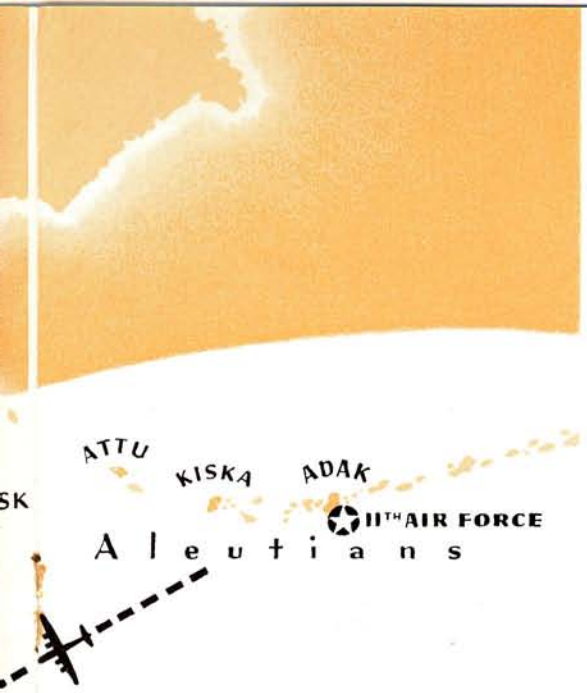


THE NOOSE TIGHT



OCEAN

TENS

MAP BY HAROLD ELLIS

In the dates of August 17, 1942, and June 15, 1944, the Axis will find a deadly parallel. The first brought the Boeing Flying Fortress' first foray into Hitler's Europe, a successful raid on Rouen. The second saw Boeing Superfortresses strike their first blow at Japan, heralding the destruction of the Nip empire of aggression.

IF Japanese leaders are still investing their own money in Imperial war bonds since mid-June, it can be only because they no longer expect to be able to use it in their old age anyhow. For even to their myopic eyes, the handwriting on the palace wall now must be clear.

The June 15 smash by Boeing B-29s at the Yawata steel works and the July 7 bombing of Yawata and the Sasebo naval base have demonstrated that the most advanced aerial weapon yet developed has put the entire map of Nippon under U. S. bombsights. It is only a matter of time now—time for production at home, time for bringing up of supplies, for stepped-up attacks over Japan.

DOUBLE THREAT PLAY

The Superfortress raid brought into the open, for the first time, the general U. S. strategy for the destruction of Hirohito's empire. It was no coincidence that the attack came while Yank troops were storming the island of Saipan, in the Marianas, just 1,500 miles south of Tokyo. Together, the two dramatic events make a picture very much like a noose being gradually tightened about the throat of Japan.

Saipan, perhaps, is the most daring Allied stroke of the Pacific war. The equivalent of a long dash to the opponents' twenty-yard line, it puts U. S. men, U. S. ships and U. S. planes squarely in Japan's front yard. As the Japs undoubtedly realize, Saipan appears in nearly every way except area a better base for American planes than the Chinese fields from which the B-29s have operated.

In the first place, Saipan is considerably nearer the heart of Japan than is the Western China springboard used by B-29s. In the second and more important place, Saipan does not have the almost insurmountable problems of supply that will make China-based raids difficult.

SAIPAN STRATEGY

For the Yawata raid, for instance, all gas, bombs and equipment had to be flown by the B-29s themselves across the treacherous "hump" of the Himalayas from India. Supplies can be brought to Saipan direct from the U. S. or Pearl Harbor by freighter and tanker. Thus the logistics involved in supplying a bomber force based in the Marianas should not be a great deal more complicated than supplying England-based B-17s of the 8th Air Force.

Besides Saipan and China, there is still a third possible avenue of attack open to the B-29s of the new 20th Air Force—the Aleutians. But with Saipan in American hands, the Alaskan chain may not be needed for strikes at the Japanese homeland.

NIPS MORE THAN NIPPED

About the June raid, however, this much is clear: The start was a much more auspicious one than the opening aerial assaults on the continent of Europe in 1942. The attack was not an exhibition, nor a morale-builder such as the Doolittle visit to Tokyo. The first raid over Yawata was only the beginning. The fact that the B-29s mean business was brought home in the second raid on Japan.

In the formation of the 20th Air Force, a radical innovation in the organization and use of American airpower was set up. A task force, patterned after the Navy's striking units, the 20th can be shifted to any war theater in the world. It can be used where and when it is needed most.

As General Marshall, the Army's chief of staff, described it: "The attack on Japan by the Superfortress B-29 introduces a new type of offensive against the enemy, and also creates a new problem in the application of military force. . . . The power of these new bombers is so great that the joint chiefs of staff felt that it would be uneconomical to confine the Superfortress organization to a single theater."

AXIS BACK BUSTER

Military authorities have predicted that Japan's industrial machine will crumble more quickly than Germany's, once it has been subjected to a regular diet of bombs. But "more quickly" is a term that justifies no premature tossing of hats in the air — for Germany's industrial heart, though stricken, still pumps munitions to her fighting arms.

And in terms of flying hours, our airmen still have spent precious little time over the Japanese homeland "casing" the Superfortress' future jobs as Europe has been scouted in hundreds of missions, by tens of thousands of planes. The problem is to hit Japan as hard and as often as Germany is being hit. A big share of that load is up to American aircraft workers building the Boeing B-29.

ENTRY OF THE GLADIATOR

When Superforts first roared over Japan it was the start of an aerial campaign all the U. S. had been waiting for. It was a campaign the men of the 20th Bomber Command had long been waiting for too. And they drew a tough assignment in "Target, Yawata!"

THE afternoon was getting along, it was about the time that most people go out for a cup of coffee. But on a coolie-built airfield in western China, tense, excited 20th Bomber Command crews were loading their gear on the planes. They'd spent a day going over their plan of attack—every step of the greatest bombing raid ever attempted.

Ground crews were adding the last spit and polish to the giant bombers. They were fixing up their babies for the first mission they had ever been on. Here at last was the long-awaited, long dreamed of bombing of Japan by B-29s.

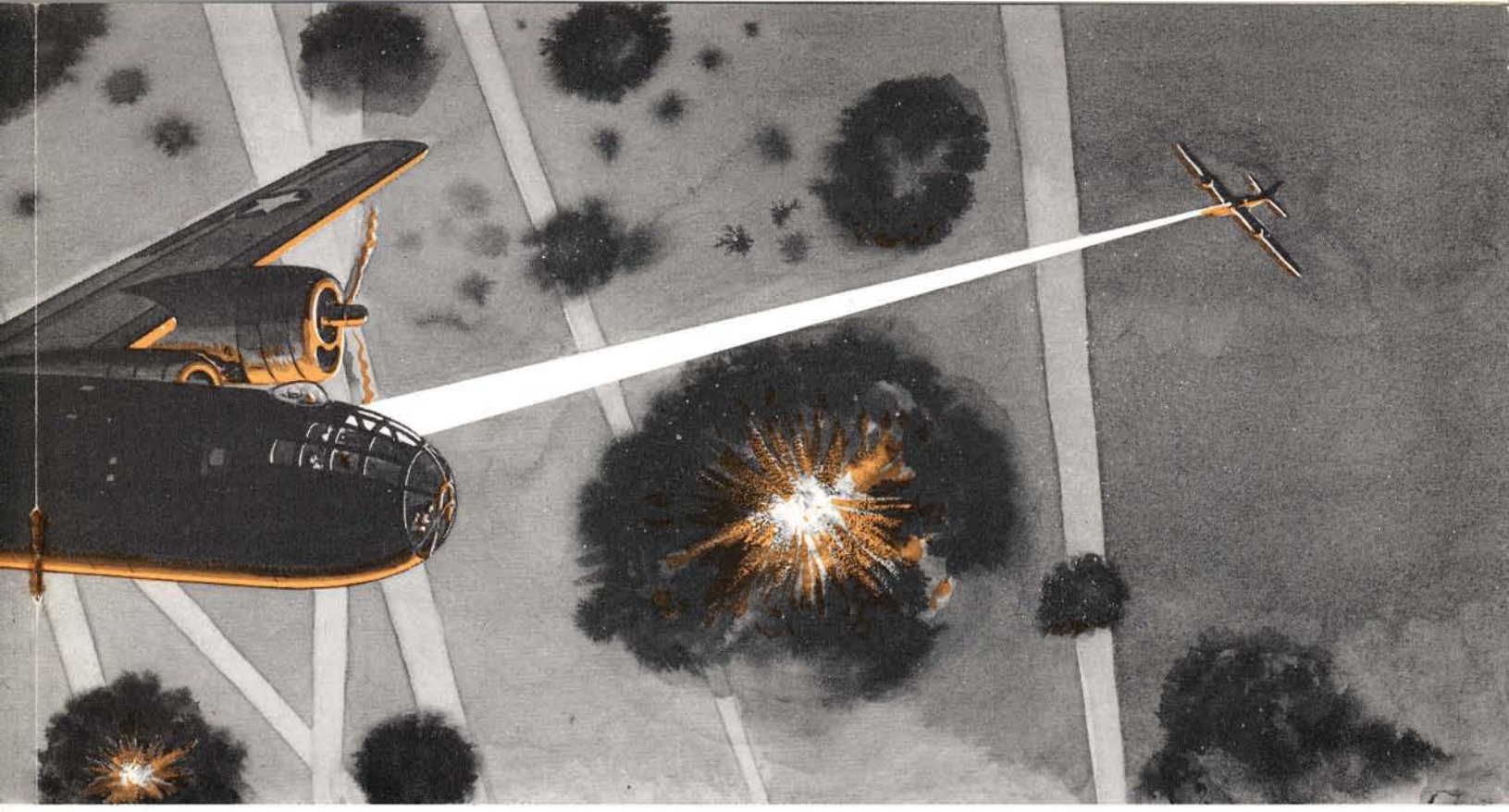
The task force of B-29s imported from the Boeing Wichita plant sat on the field up to their ears in bombs and gasoline. They were going to need plenty of both. This trip would be longer than 2000 miles and their target was the important steel and iron works at Yawata.

ZERO HOUR

One by one the sleek bombers taxied to the end of the runway. Each turned and gathering up all its power, tore down the runway at tremendous speed, then gracefully lifted 60 tons of potential destruction into the air.

The crew looked down on the Chinese countryside with its walled towns and white pagodas, watched the world's most ancient civilization fall below the wings of the world's most highly developed weapon of war. The pilots headed their ships up into the overcast sky to vault the range of mountains that separated them from the China coast.

The crews tried to settle down. They fiddled with their gear, tested their equipment, tried the chicken sandwiches. Now they were over the vast plains of central China obscured by low lying clouds. Below them were Jap camps and some of the biggest Japanese air bases in



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ILLUSTRATED BY
CARTER LUCAS

The Jap planes snarled up through the dark at the Yanks, picking out their targets with their own searchlights.

China. This was dangerous territory.

It was beginning to grow dark. Suddenly a searchlight stemmed up from below. If they should be spotted now—! The light poked around the sky uncertainly. Then, satisfied, it went out.

The crews on the B-29s took a deep breath again. Orders came over the interphone from the pilots, "Put on flak vests and helmets." The crews got into their armor. Gunners looked to their weapons. Faces were strained to the plexiglass blisters to watch for Jap fighters.

Now the flight of long-nosed Dragon Flies were heading out over the Yellow Sea. Only a few minutes separated them from their target. Far below they could see the occasional twinkle of a ship light.

The armada of Superfortresses nosed over the southernmost Jap island and in toward their target. Through breaks in the clouds the first group of eight B-29s could see the city of Yawata sprawled out below them. Up ahead were the coke ovens and open hearth furnaces of the Nips' biggest steel mill.

INTO THE FLAK

Now the Japs had discovered them, and flak was spreading around. The sharp metal bits bounded off the bombers' hides. Searchlights bisected the sky in frantic arcs. The first B-29 headed square into a maelstrom of flak for its bombing run. The others followed in rapid succession. As they came in, searchlights pinned them against the sky. Inside the planes it was as bright as a spotlighted stage. The first B-29 loosed its tons of bombs. They sailed down toward the target. The Superfort dodged to the side, out of the cone of searchlights, while bombs from B-29s above and below went careening earthward.

As the Superfortresses roared away from the fires and explosions that marked Yawata the flak dropped off, a signal that night fighters were on the way. The Jap planes snarled up through the dark at the Yanks, picking out their targets with searchlights. But when the last B-29 had vanished into the darkness on its way back home, the combat score was 0-0. Later four B-29s were counted lost, one from flak, the others from accidents or forced landings.

With the bedlam of destruction left on that Jap island, the Nips no longer had to worry, in suspense, about the B-29 and whether it could reach them. Now they knew, too well, that it could.

ボイン斬聞 昭和十九年七月

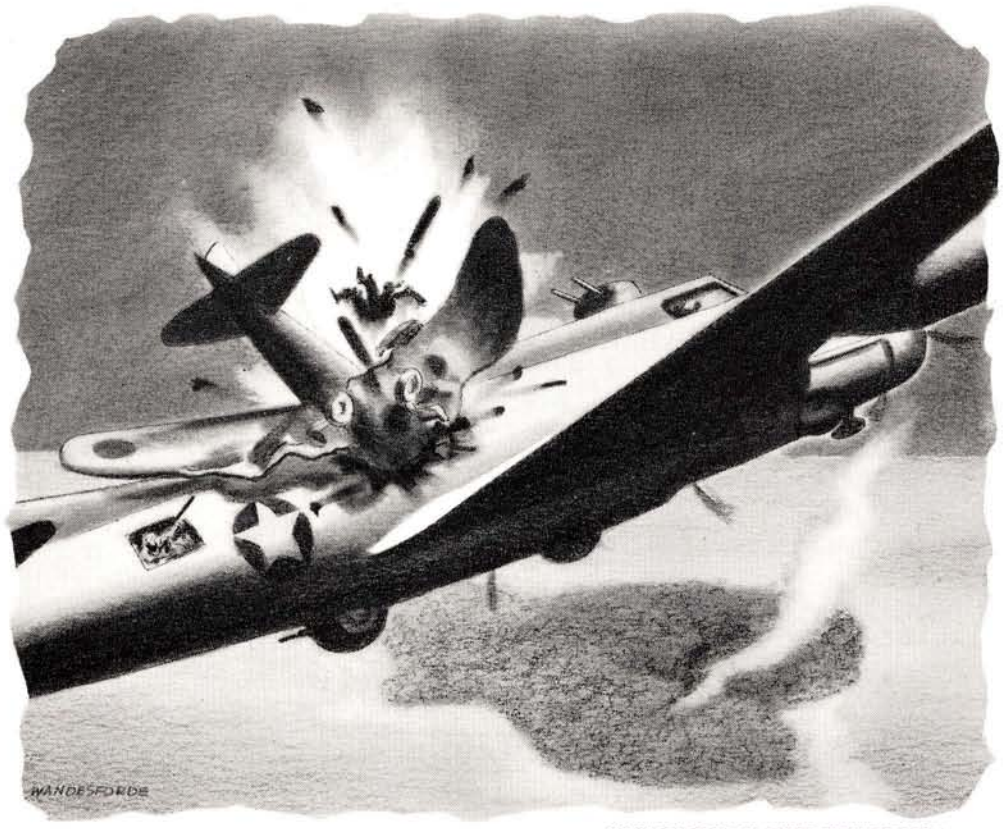


ILLUSTRATION BY JAMES WANDESFORDE

Approved procedure in combating Flying Fortress: Hari-kari.

如何にボイン十七を破るか

"At long last, the brilliant military experts of our Emperor have devised a way to battle and bring down, **in-evitably,** ***the insolent Boeing B-17 heavy bomber, known as the Flying Fortress. Your most humble magazine,*** **Fuji,** ***is deeply honored to bring to you this inside story of the ingenuity of our Imperial Air Force leaders. The conversations of four noble sons of the Emperor, who are flying officers, are written down in this article. They report that the hairy foreigners in their Boeing B-17s have been struck all of a heap by this new highly effective method.***

"OUR greatest problem has been the enemy's Boeing B-17 heavy bomber. We met these first in Burma, where Ashibara brought one down. Afterwards, however, they added some special equipment to them and they reappeared at Guadalcanal.

"We intended to treat these B-17s as before, but this time could do nothing against them. They were most insolent and overbearing in their behavior. Ships could not bring us supplies, so we were without food. If we did nothing, we should starve helplessly. By some means or other, these Boeings had to be brought down—such was our problem.

"In Japan, too, all the experts were assembled trying to devise a way to bring down a Boeing, but no good idea occurred to them. Yet to leave the problem unsolved meant that we should starve by inches. At last, on the front line, one was brought down by flying up against it.

"It was just then that I was going out to Guadalcanal. The enemy was afraid of this kind of fighting and so the Boeings did not appear again for some time. If they were struck all of a heap, they had no way of defending themselves. So for two or three weeks they didn't appear.

"In the interval we completed our transfer from Guadalcanal without further loss. If the Boeings had been rampaging around we could not possibly have effected our transfer.

"When our experts in Japan heard about this, they couldn't contain themselves. By burning midnight oil, they quickly made the necessary alterations in our equipment and sent them out to the front line.

"When they arrived, knowing that something 'big' had come, we were quite excited. Afterwards, when the enemy came over, the commander-in-chief called up a certain pilot and said, 'You are the Nasu-no-yoichi of the Showa Era. Come back with the enemy destroyed!'

"The pilot was deeply moved, and mounting up in the plane he displayed the valor of a Nasu-no-yoichi and brought down the enemy at the first attack . . ."

Jiro Chikushi, a squadron leader, commented on the necessity of killing the "hairy foreigners"—the name he gives Americans. "If I had a son, I would say to him, 'Be an airman. If you can't shoot down the enemy's plane, then crash into him.' Only a parent could say that . . ."

(The quotations in the above article were originally printed as an interview in the Japanese magazine, **Fuji,** ***a copy of which was picked up on an island captured from the Nips. The U. S. Army Air Forces magazine,*** **Air Force,** ***recently printed this Jap pilots' bull session.*** **Boeing News** ***reprints it to reveal the Japs' "secret weapon": hari-kari—a procedure they have injected into air battle as the only sure way to down a B-17. We wonder how they will go about tackling the B-29?***

(Translation of the Japanese characters on the right: "How To Destroy a Boeing B-17." On the left: Boeing News, July, 1944. The three top characters in the stack on the left are Nipponese symbols for "Boeing".)

HOW ARE WE DOING?

On this and the succeeding three pages is a summary of Boeing's financial report, outlined for employees who would like to know what happens to the money the army has spent for Boeing planes. The figures include operations in both Kansas and Washington.

NO GROUP of people on the home front is closer to the war than the people who comprise the several divisions of Boeing.

The B-17s designed and built by Boeing employees have been systematically destroying the German production machine and Germany's defensive air power, making it possible to invade the continent successfully.

Earlier, in 1942, they were given a major share of the credit for stopping the Jap tide short of Australia. Their B-29s have put an entirely new complexion on the war with Japan. And most of America's pilots learned to fly in the first place in a Boeing PT-17 Kaydet trainer.

Thus, as 70,000 individuals and as a tightly-knit organization, Boeing has had and will continue to have a tremendous effect upon the war. What, exactly, is this organization, Boeing?

19,000 OWNERS

The papa of all the various Boeing plants is the Boeing Airplane Company, owned by 19,000 stockholders throughout the country. There is a distinction between the Boeing Airplane Company and the Boeing Aircraft Company. Boeing Airplane Company, in addition to being the parent company, with headquarters in Seattle, is also an operating company through its Wichita Division, located at Wichita, Kansas. All of the capital stock of the Boeing Aircraft Company, which is the operating company in the State of Washington, is owned by Boeing Airplane Company.

Boeing Aircraft Company has two main divisions, both in the Seattle area—the Renton Division located near Renton, Washington, and the Seattle Division. Boeing Aircraft Company also owns all the capital stock of Boeing Aircraft of Canada Limited, at Vancouver, British Columbia.

All three of the domestic divisions have shifted to B-29 production, or are in the process of doing so. The only exception is Vancouver, with its three factories, where PBY flying boats are being built for the Royal Canadian Air Force.

The Wichita Division, with a background of small plane manufacture, was the first plant to launch production of the B-29. Throughout 1943 it turned them out, and today it is building them in quantity in its big Plant 2, constructed specifically for the job.

EXIT TRAINER PLANT

Boeing - Wichita's Plant 1, roughly comparable in size to the Seattle Division's Plant 1, has turned out more training planes than any other factory in the country. Shortly its ten thousandth since Pearl Harbor will leave the door. With the Army Air Forces' expansion program at an end, however, Plant 1's trainer production has been reduced to a comparative trickle and a great percentage of its effort is now going into assembly for the B-29.

The Renton plant has been turning out B-29s since the first of this year. Under the integrated Seattle-Renton plan the big bombers will be a 50-50 proposition. Seattle's Plant 2 and branch plants will fabricate parts and assemblies; the Renton factory will perform the final assembly work and turn out the completed plane. Each plant will be used for the part of the job for which its facility is best suited. The result will be considerably more production than the two plants could turn out independently.

WORLD RECORD

At the Seattle plant, conversion is well under way from Fortress production to Superfortress manufacture. As the conversion began this spring, Seattle's B-17 production was just setting a world's record. In March, Flying Fortresses were being turned out at the rate of nearly one every hour throughout the two main shifts of each working day. Production had increased 92 per cent from January, 1943 to December. The delivery rate by the end of 1943 was more than three times the scheduled maximum monthly production for which the Seattle plant was originally planned and it reached four times the amount in March, 1944.

BOEING CALIFORTRESSES

Production of the Boeing B-17 Flying Fortress will be continued by both the Lockheed and Douglas companies under the existing cooperative arrangements.

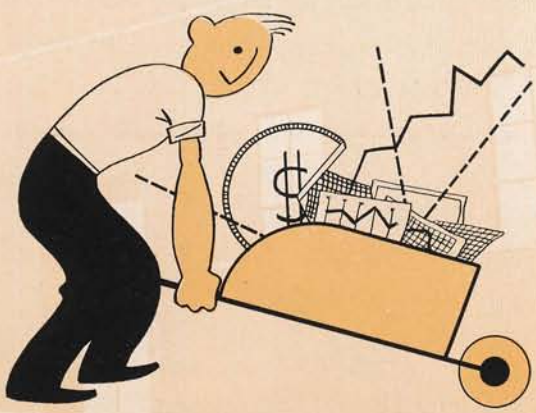
Although all Seattle's actual production is turned out at its huge Plant 2, the division has two other plants as well. Plant 1, which has produced Boeing planes since before World War I, has been reserved for experimental work today. It was here that the first experimental models of the B-29 were built. Plant 3, though no longer engaged in actual manufacture, plays a vital part in keeping the materials flowing. There are also Boeing branch plants located in Tacoma, Everett, Bellingham, Aberdeen and Chehalis, Washington, which produce subassemblies. Also on the Seattle roster are numerous leased warehouses and buildings.

PRODUCTION HUB

The Boeing company, as the hub of the nation's heavy bomber program, has turned in the best record of any in ability to put its factories to their most efficient use. Now Boeing is providing the leadership for the largest cooperative production program of the war, which with the B-17 and B-29 programs, involves six major companies as prime contractors.

All this, then, is Boeing. What Boeing and its people have contributed to the war, you know already. Most of the statistics involved in making their accomplishments you probably don't know. Some of them are presented on the following three pages—a financial and production report on Boeing for the year 1943.

The little gentleman below will conduct you on a figurative tour.

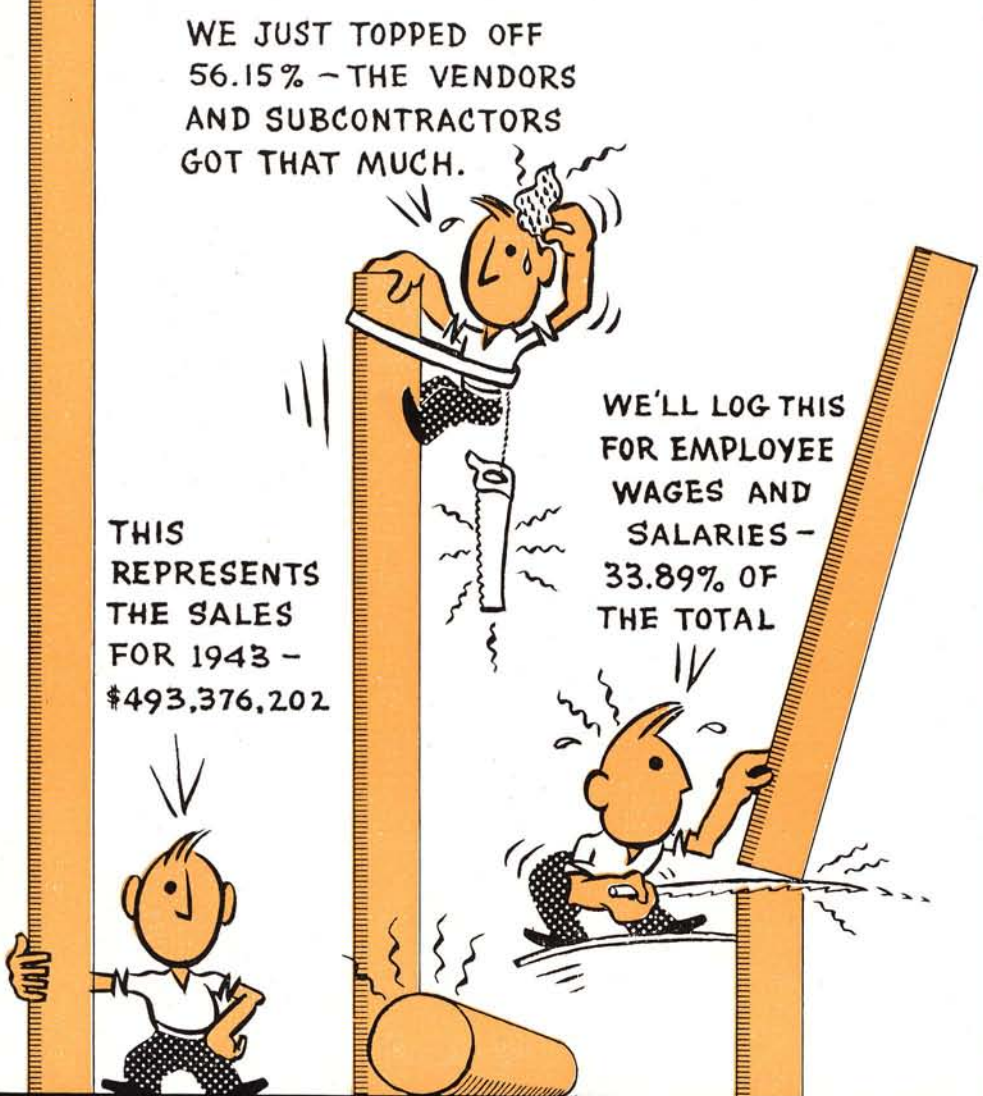


ILLUSTRATIONS ON PAGES 13, 14, 15 AND 16
BY CARTER LUCAS

Where Does the Money Go?

JUST like most people who live on a budget, Boeing Airplane Company spends the money it receives for its product on the factory equivalent of food, clothes, services, insurance, rent, depreciation and savings. Boeing operates on cost-plus-a-fixed-fee contracts, which means that the company bids for the business with an estimate of what the work will cost. When that amount is decided upon, a certain sum is tacked on the end as the contractor's fee, out of which must be paid those expenses which the government does not allow as cost, as well as dividends or interest on stockholders' investments, reserves against post-war conversion expenses, etc., and reinvestment in the business. Examples of money re-invested in the business are Boeing's new wind tunnel and the new cafeteria at Seattle; expenditures for research into post-war products; advertising to build post-war market acceptance, and reserve funds against some of the indeterminate expenses and losses at the close of the war.

Over half the money paid Boeing for planes goes right through the company's hands and on to the firms which turn out raw materials and parts. Employee wages and salaries take nearly a third of the total. The average wages per employee in 1943 was $2720. The amount of government taxes for 1943 was $34,128,005. The company's contracts for 1943 are still subject to possible re-negotiation which would further reduce the earnings.



Here's Boeing's stack of chips. In 1943 the company sold $493,376,202 worth of airplanes to the U. S. Army.

Over half of this amount goes to pay for raw material and parts. Paid out: $277,011,253. Left: $216,364,949.

A third of the 493 million gross sales goes to employees. The payroll is $167,237,445. $49,127,503 is the remainder.

"Seven Lean Years"

BEING a pioneer sometimes proves quite an expensive and unprofitable business. Through most of the thirties, the Boeing Aircraft Company was developing new airplane designs and opening up fields of aviation that were entirely new.

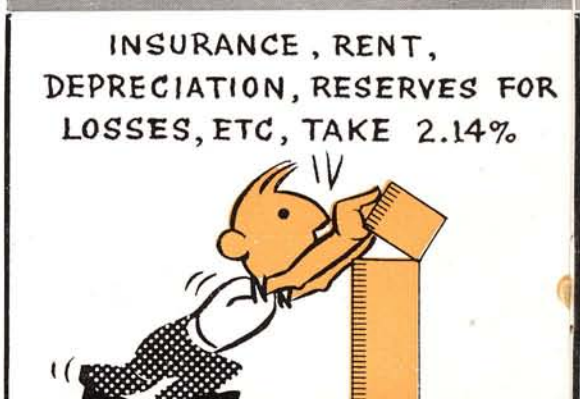
During most of that time Boeing was steadily losing money. The company was experimenting—a kind of work that kept it financially out on a limb.

Sticking to its vision of the type of airplane that it felt was needed for our national defense, Boeing kept to research, in spite of the red ink on the books. The company was endeavoring both to advance airplane design and to develop a product that would meet the needs of the future and provide volume manufacture. There was no such thing as a heavy bomber, so in 1934 and '35 at the invitation of the Army, Boeing developed a battleship of the air—the Flying Fortress.

In those days the Army was actually buying very few bombers, and the work was barely enough to keep Boeing alive. But they asked Boeing to keep up its experiments.

Even while the Fortress was being developed, Boeing designed and began building its famous Clippers to make a reality of transoceanic air travel. In the late thirties it brought out the Stratoliner, pioneering air transport in the substratosphere.

The Clippers and Stratoliners were likewise a costly development, aimed at the creation of a future market. Then the war intervened. But it was this very development work, that kept Boeing in the red in pre-war years, which enabled America to have the weapons it needed to do the toughest bombardment jobs when war came.



After paying for the costs of running and maintaining factories, which amounts to $10,516,627, there's $38,610,876 left.

1934 — The Boeing company begins work on the model 299, the original Flying Fortress. They lose money—out $225,977.

1935 — Model 299 flew this year. Other sales were small, and on the financial report Boeing's deficit sank to $514,121.

1936 — More experimental work and research. But there were few sales and at year's end the deficit stood at $345,757.

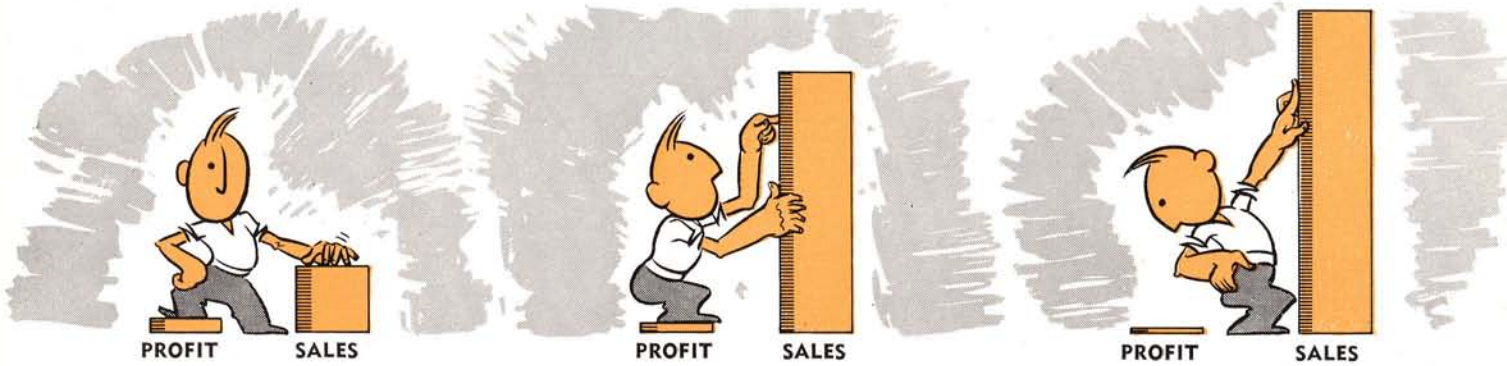
1937 — More development work on B-17s, but only 13 bombers sold. A small profit brought down the deficit to $314,731.

1938 — Research progresses on four-engine craft. The army is encouraging but has few funds. Boeing's deficit hits $872,369.

1939 — Stratoliners, Clippers, B-17s — all advances in aviation — but an inventor's life is hungry. Deficit skids to $4,149,653!

1940 — The Army begins calling for B-17s. Boeing supplies them. Limited profits brought down the deficit to $3,775,206.

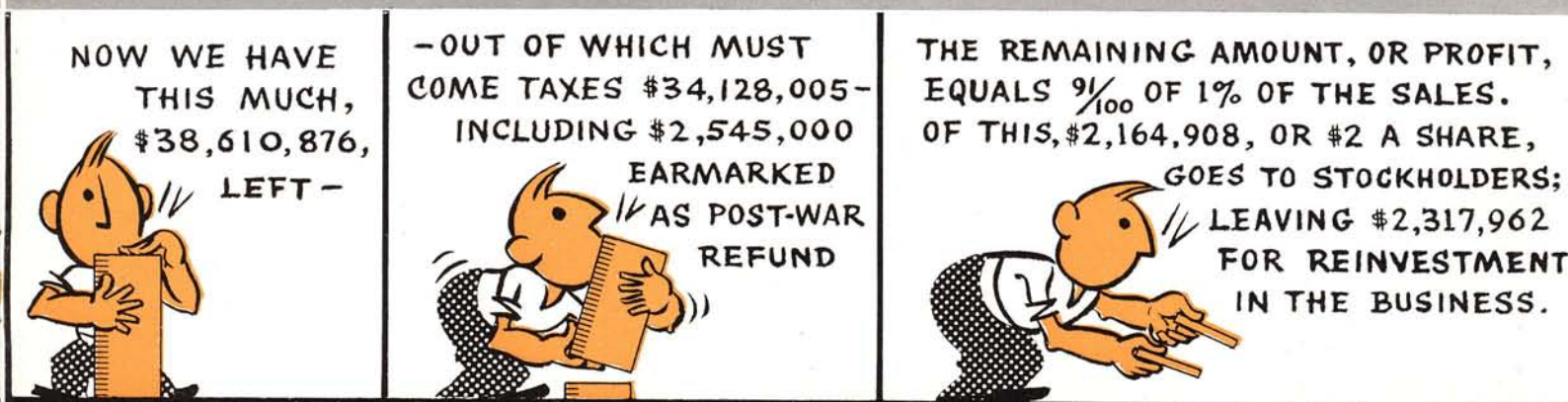
1941 — Boeing's starvation years result in its being ready to produce the war's most effective weapon — the Flying Fortress.



1941 — This $6,113,143 profit (see 1941 cartoon above) was earned on $97,210,-314 in sales. Profit is 6% of gross sales.

1942 — Sales go up four times, to $390,-108,863, but profit goes down to $5,237,-623, a cut to about 1⅓ per cent of sales.

1943 — More Fortresses. Each cost Uncle Sam less. Sales, $493,188,160; profit down a million to 9/10 of 1 per cent.

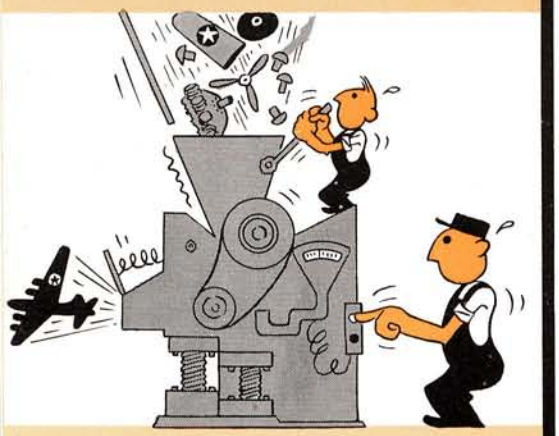


This is the remainder, 7.82%, that will be divided among the government, the stockholders and the business.

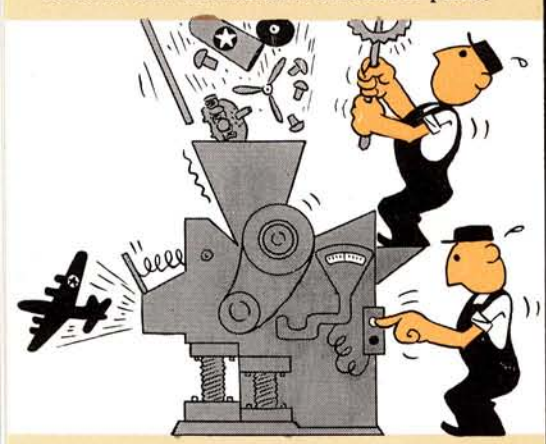
Back to the government for federal, state and local taxes goes 88.4% of this amount. This leaves a profit of $4,482,870.

Past losses have saddled the company with an exceptionally high excess profits tax rate as the record of those years determines today's industry tax. So earnings are low compared with other businesses.

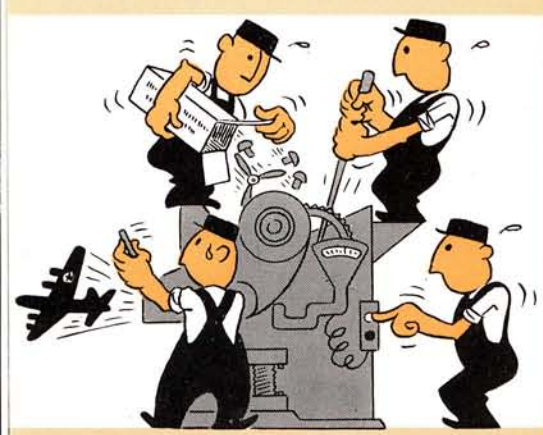
Boeing — Here is one man at work on a Flying Fortress. At Boeing it takes .9 of a manhour to turn out one pound of airframe.



Next best heavy bomber plant — In this factory it takes a "man and a boy" or 1.1 manhours to turn out the same amount of plane.



Average of all bomber plants — Two men produce the same amount of airframe. (Statistically, 1.9 manhours per pound of frame.)



Aircraft industry average — 3.6 or four times the man hours. All-around efficiency accounts for Boeing's lead in use of manpower.

HOW BOEING BREAKS PRODUCTION RECORDS

ON the previous page there are three figures under 1941, 1942 and 1943 showing how sales deliveries skyrocketed and the profit dropped off a million or so each year from the previous year. What it doesn't show is that not only did the dollar volume of sales increase five times over a two-year period but production of Flying Fortresses went up more than that.

The answer to this is, of course, that the price of Fortresses to the Army constantly has been lowered. In 1943 the Army spent five times as much for Fortresses as in 1941 but got more than sixteen times as many planes. This big saving to the Army was accomplished through efficient production methods, new tooling and smart use of manpower as shown by the charts on this page. The figures from which the Boeing record is taken were compiled by the Army Air Forces Materiel Command.

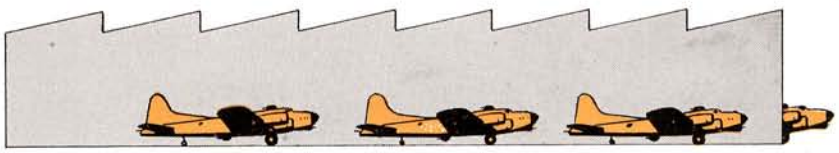
In the first category—the man-hours required to do the job—Boeing ranked tops in average monthly output for the year. On the left of this page are illustrations that show, comparatively, how efficient aircraft plants were during 1943 at producing with the manpower they had.

The second measure of efficiency is the production in terms of pounds per unit of factory area. Boeing again held first place for the year in the average number of pounds of airframe produced monthly per square foot of direct floor area.

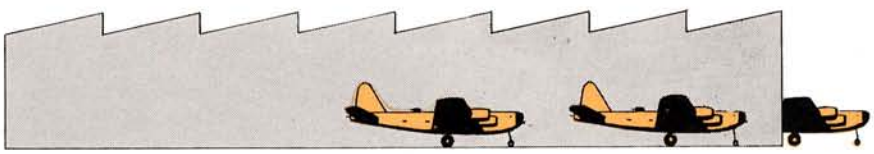
Obviously, a huge factory should be able to turn out a larger quantity than a small factory. Therefore, this pounds-per-square-foot business is a good means of comparing the production of varisized plants.

In the illustrations below are indicated the relative efficiency of certain aircraft plants in this category.

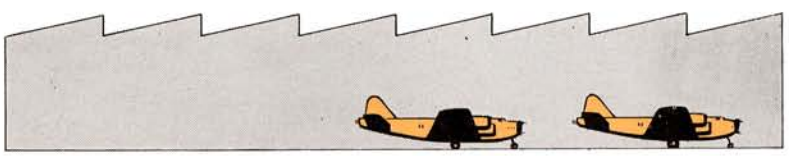
Both Boeing ratings are for the Seattle plant, producing B-17s, since this is the only Boeing plant which was in full production throughout the year, while other plants were getting started on the B-29.



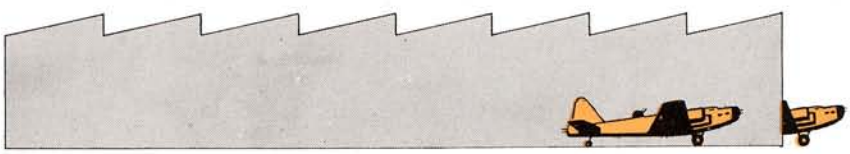
Boeing — At the Seattle plant 3.23 pounds of airframe per square foot are produced each month. Or if you want to look at it as airplanes, here are three and a quarter of them beside a symbolic plant — in this case, Boeing-Seattle.



Next best heavy bomber plant — The closest competition to Boeing for efficiency in relation to space is a plant turning out 2.5 pounds per square foot. In the drawing this is indicated graphically in the form of two and a half bombers.



Average of all heavy bomber plants — Two pounds per square foot of floor area is not a bad average in bomber plant production, but it's far below the Boeing record. This gauge is one of the few efficiency measuring-sticks available.



Aircraft industry average — In spite of its amazing war production record, the aircraft industry average, in comparison to Boeing's 3.23, is 1.3 pounds per square foot per month. This includes everything from fighters to cargo planes.

World Wide Wings

(Continued from Page 5)

the pressurized cabin which by maintaining sea level conditions, allows the crew to fly in rarefied atmosphere without oxygen masks. Working on the same principle as the engine supercharger, cabin pressurization is achieved by supercharging the thin air to low altitude pressure and maintaining normal oxygen in the cabin atmosphere.

The B-29 is the first bomber to have two bomb bays. Together, they are designed to carry an equal weight of large bombs or small bombs, or a combination load. Armament on the heavily defended bomber consists of power turrets with multiple gun installations of .50 caliber machine guns and a 20-mm. cannon.

FLYING BULLET

The long cylindrical shape of the Superfortress balances on a tricycle landing gear, its long jutting nose close to the ground. Squatting at this angle, instead of at the customary jaunty uptilt of the B-17, the B-29 exhibits a swan back, swooping up to a dorsal fin and a tail held high off the ground.

The sinister appearance of the bomber is enhanced by its long slender wing and the oval engine nacelles with one enormous mouth-like duct on the face of each nacelle. The one large duct takes the place of a quantity of them in the wings. This new nacelle design alone was the result of more than a year's experimentation with models of nacelles.

Due largely to nearly 9000 hours of wind tunnel tests, the B-29 is aerodynamically "cleaner" than any other large plane ever built, its design the closest to streamlined perfection yet achieved. So "clean" is the ship, in fact, that when the wheels are lowered it doubles the plane's drag. The landing gear is completely retractable. The huge oleos with their four-eight-inch wheels, fold up inside the wing behind a closed door.

A double-wheeled nose wheel, the first ever built into an airplane, is placed close under the Superfortress' "greenhouse," or plexiglass nose.

WING LIFTS 60 TONS

The Superfortress' wing is built about a new and outstanding development in airfoil sections, named the Boeing "117" airfoil. The wing incorporates the best combination of aerodynamic characteristics ever packed into one wing—both flight performance and landing performance.

Built into the "117" are a huge set of wing flaps that take up nearly 20 per cent of the wing area. They give the B-29 a landing speed in the same range as the Fortress, in spite of the fact that the B-29 is twice as heavy and much faster. The big flaps also give the B-29 astonishing take-off performance. It requires no special concessions in airfields, can take off from normal-size runways.

In appearance, the dorsal fin of the B-29 resembles the famous but smaller dorsal of the B-17. Actually, it is part of a tail configuration worked out by long wind tunnel testing. Despite its great size, the tail can be handled by the pilot without the assistance of a power boost, thus retaining feel of control.

Boeing has spent more than ten years developing heavy bombardment planes and turning out, as well, such famous planes as the Clipper and the Stratoliner. All the best features of these aircraft and the experience and engineering know-how attained in their design are rolled into the Superfortress.

RUNNING MATE

WHEN the Boeing B-29 production men get done, they're going to have a pair of plants hooked closer together than Siamese twins. They're teaming up the Seattle and Renton factories so that B-29s will be turned out in the fastest and most practical way.

With this super-synchronization, the Seattle plant that now produces Flying Fortresses will turn to fabricating B-29 parts from raw materials, and putting together minor assemblies. These parts will travel via Boeing's fleet of trucks from Seattle to the plant at Renton, eight miles away.

While this joint program is being organized, the Renton plant has been turning out complete B-29s on its own hook. In the future, all the west coast built B-29s will fly from the Renton plant. They'll be taking off from the B-29 airport that lies alongside the factory. This was a field that rose from a swamp, a pasture, a nursery and a lake inlet. A river happened to be in the way too, but it was taken care of. When the planes are wheeled from the plant to the apron they cross the river on a floating pontoon bridge.

The huge plant itself, shown in the photo above, is the newest of the Boeing factories. Built in 1942 on the lake shore, it has three huge assembly bays that measure 300 by 650 feet.

Division Manager Fred P. Laudan commented on the plant's first plane production, "Our Renton people who delivered their first B-29 in December, 1943, have done a magnificent job. A large percentage of them never before had worked in any kind of a factory—let alone an aircraft assembly—before coming here."

But Laudan at the same time emphasized that the big test of Renton's ability to perform lies in the months ahead.

Birth of the B-29

(Continued from Page 4)

carried out on full-size sections of the new ship. Each major section of the plane was crushed or pulled to bits in the Plant 1 "torture chamber." Here a collection of torture-chamber machinery worked over each part of the plane to determine how much punishment it could stand. The wings, for instance, were crumpled by an ingenious system of hydraulic jacks that applied more than 300,000 pounds of pressure to their surfaces.

THROUGH THE WRINGER

The tail went through a similar Inquisition test. Parts of the plane used in the "torture chamber" were built full scale and complete in form. A free drop test, without parachute, was doled out to a complete airframe structure. They raised the airframe from the floor and let it thump. The plane was unperturbed by this rough life, so sections of it were taken out, stood against a wall, and riddled by 20 mm. cannon shells and machine gun bullets to find out how well it would withstand gunfire.

Meanwhile, the three XB-29s were being constructed to carry on the test program in the air. The first XB-29 made its initial test flight on September 21, 1942, with the late Eddie Allen, Boeing director of flight and aerodynamics, at the controls.

AIRPLANE OBSTACLE COURSE

This was the beginning of the greatest test program ever conducted on any airplane. Allen laid out a flight program for the airplane both stripped and completely equipped. At first the schedule called for 52 hours of flight test time. Then the program was extended to 252 flight hours on the three experimental Superfortresses.

The purpose of the test flights was to demonstrate the B-29's stability and handling, to prove its speed, critical altitude, landing and takeoff distances, load and range. In addition, the B-29 carries many items of equipment never before put on a plane. These required test flight check-ups.

Even now, with B-29s in production and in combat, tests on the Superfortress continue. Test flights, wind tunnel work, flight testing of scaled-down parts on actual airplanes and exhaustive structural tests are still being carried on. As long as there is a B-29, Boeing engineers will be working over it, improving and adding more lethal power to the Allies' big bruiser.

WICHITA TO YAWATA

(Continued from Page 7)

Arkansas. Boeing put thousands of these hardy midwesterners to work building trainers, gliders and B-17 parts, preparing them for the larger job of producing B-29s.

By late 1942 the jigs for the superbombers were in place, and already filling with parts that streamed from the fabrication shops. Under the lash of war urgency, production was forced ahead so relentlessly that the first few thousand parts were fabricated by hand because the tools were not yet available. This alone saved several weeks' time in a production program where the word was "Rush!" With this early start, production planes were actually under construction at Wichita before the original experimental model made its first flight, on September 21, 1942, in Seattle.

The experimental models then nearing completion at Seattle, though not yet flown, served as pilot ships on which drawings were proven before being forwarded to Wichita.

AERIAL TRYOUT

As an automobile design is ultimately proven in driving the product, the proof of an airplane is in the flying. Never yet have designers put a new type plane into the air without finding hundreds of "bugs" that must be ironed out. In late 1942 and early '43, Eddie Allen and his flight and aerodynamics group in Seattle launched the most extensive flight test program ever undertaken. There were changes to be made on the B-29, as there are on any ship when it goes through tests, but on the whole the Superfortress was one of the "cleanest" ships, from the standpoint of amount of changes necessary, ever to come from the boards of aircraft designers. No changes of the basic design were required.

Static tests were being carried on simultaneously with production in Wichita. The wing, for instance, was put under test and it was decided to "beef" it up a little. Changes were made in the designs and were quickly passed along to Wichita engineers, to be translated into new tools and incorporated into the production lines. This caught Wichita at a bad time—just when they were getting their wing construction in hand. The complications arising on already moving production lines in Wichita were terrific but unavoidable. But there just wasn't time to completely finish the preliminary work before production was under way. It was a choice between having or not having a combat airplane for several years.

On February 18, tragedy took a hand in the B-29 program. The first experimental ship crashed in Seattle, carrying to their deaths Eddie Allen and his crew of ten top research engineers. Aside from the stunning loss of some of the most valuable men in aviation, the accident held up the flight and experimental program of the B-29 for several months and added a great deal to the amount of testing to be done.

Then the No. 2 experimental ship took to the air and was flown to Wichita by Col. Leonard F. Harman, who later was commanding officer of one group of B-29s on their first attack on Japan.

READIED FOR YAWATA

When Brigadier General Kenneth B. Wolfe took over expediting of the B-29 program, the army made many test flights on early B-29s and determined on the spot what combat modifications would be necessary for the China to Japan raid, a strategic military move that was just then taking shape. These modifications were then incorporated into the airplane on the production line at Wichita.

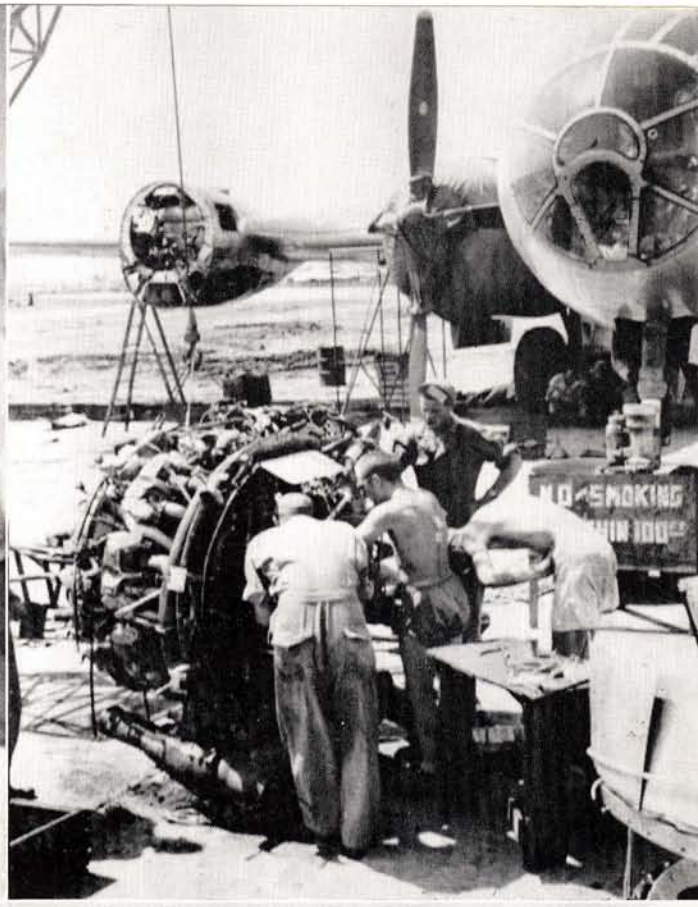
Wichita was anxious to keep all changes up to the minute. At one time 1200 mechanics were drawn off the assembly line and went to work on the open-air flight apron in bitterly cold weather, making changes inside the wings of semi-completed B-29s. At another stage 586,000 plugs, connecting ten plus miles of electric wiring in each B-29, had to be knocked down, changed and resoldered.

Each of these changes whether dictated by flight and static tests or by shifting tactics and requirements on the combat fronts, took its toll in production hours, yet each of them was necessary. Each was a part of the price that had to be paid if America's most urgent, most unorthodox industrial program were to be a success.

For all Boeing employees on the B-29 it's been a steady *drive, drive* all the way. On December 13, 1943, Wichita employees willingly went on a ten-hour day, to keep the Twenty-Nines moving.

They received their first reward June 29, last year, when their first production B-29 had its maiden flight—just two years and five days after ground was broken for their Plant 2.

They had a greater reward June 15, this year, when their own big babies struck Japan.



the DRAGON FLIES

FROM the Superfortress airfields of western China comes the first nickname for the Boeing B-29. Over there, her crews call the long-nosed, tapering bomber "The Dragon Fly."

These pictures of the newly celebrated monsters being sleeked and fed for the actual attack, were the first direct telephotos from the Orient.

ABOVE—Brig. Gen. K. B. Wolfe, left, commanding general of the newly formed Twentieth Bomber Command, and his chief of staff, Col. Charles A. Horn, discuss the scenery—of Japan. The photo of the men who plotted the B-29s' first mission, was taken at an air base in India.

UPPER RIGHT—Long before the raiders could fly, ground crews spent hundreds of sweating hours grooming the Dragon Flies for their lightning thrust.

CENTER—Crew members of one of the Superfortresses prance off with brave spirit to inaugurate the army's latest air route—a B-29 bomb run direct to Japan.

BELOW—This Yank dragon thunders up from the field, off to spout fire and brimstone at the Japs, then back to its lair in China, the homeland of dragons.

The B-29 is shown here without its armament. The plane in the background is a Boeing Flying Fortress

Shortening the road to Tokyo

When word flashed around the world that B-29 Superfortress crews had ended the training stage and gone into action against Japan, it was cheering war news.

But behind that news is an even deeper significance. For the Boeing Superfortress marks the greatest single advance in aviation since the war began.

Many details of the B-29's performance must still remain military secrets but it can be stated without qualification that this is the most potent weapon of air warfare ever developed.

Half again as large as the Boeing Flying Fortress, the Superfortress is faster, carries a far heavier bomb-load and has greater range than any other bomber in combat today.

The same Boeing engineering staff that designed the B-17 Flying Fortress is responsible for the Boeing B-29. Working closely with the Army Air Forces Materiel Command, these men have incorporated in the new Superfortress many of Boeing's unique principles of design. Only the keen engineering vision and production skill which enabled Boeing to give America the 247, first modern-type commercial transport — the Flying Fortress—the famous Stratoliners and transocean Clippers—could have done this job and done it in time.

So urgent do military authorities regard the need for this new Boeing bomber that they have requested several of the nation's largest aircraft factories, in addition to the Boeing plants, to build it.

How many of the B-29 Superfortresses are to be built, and where and how they will be used, must remain restricted information. But you can rest assured that in the hands of courageous, keenly trained American crews these great ships are a formidable weapon for Victory.

DESIGNERS OF THE FLYING FORTRESS • THE NEW B-29 SUPERFORTRESS • THE STRATOLINER • TRANSOCEAN CLIPPERS **BOEING**