

Museum of History and Industry
Historical Society of Seattle and King County

Transcript

Harold and Eileen Mansfield - taped interview

December 27, 1984

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This is an interview with Harold Mansfield on December 27, 1984. The interviewer is Lorraine McConaghy for the Museum of History and Industry.

Q. I'd like to start out by asking you how long you had been with Boeing, and what your responsibilities were, as the war began.

Mansfield The war actually began in '39... (laughing)
But you're talking about the year our war began in, 1941.

I'd joined Boeing in 1936. I was fairly young out of journalism school, and had spent a couple of years on the newspaper, the P-I [Seattle Post-Intelligencer]. Then this position opened up with what we came later to call public relations and advertising. It included publications - we had a newspaper that we got out, and whatever other written publications were involved.

When the war came along, I was still involved in that phase of it, but probably more with the employee communications. Both that, and the outside press contacts that were involved with what we were doing in the war.

Q. When you say that the war began in '39, what did you mean?

Mansfield They had been working on plans for aircraft for the French and British involvement in the war in Europe. When the first blitzkrieg occurred - well, the invasion of Poland was in '39 - the next spring were the blitzkrieg attacks on the low countries. At that time, the United States had practically no defense program. Washington looked upon the United States' role as what they called, "the arsenal of democracy," that we'd be able to support our allies in Europe but not get involved. The thought was that the United States would not get involved.

So the matter of war production became immediately a serious matter. The thing was, the Boeing Company had been designing and building huge airplanes, as they were thought of then. The desire in the Pentagon was for large numbers of aircraft that they could contribute and that called for smaller planes. Also, they hadn't had any experience with the big four engine bombers. It was anew concept, and the British were advising against them because they thought they'd be too vulnerable to being shot down - too much tied up, too many eggs in one basket.

For a while, the Boeing Company, in order to get involved in this production, was building a few of its own Flying Fortresses, but larger quantities of a Douglas two engine

attack plane. And the plant expansion was really initiated for that.

So, when Pearl Harbor came along, we were well into production. They had, by that time, decided they needed some Flying Fortresses, and the Douglas attack planes went out the window, and we converted the plant to Flying Fortress production.

Q. That period, the "short of war" period between 1939 and 1941 - the isolationism that you describe. Was Boeing active politically in any way? I have been curious in reading about the relationship between the government, the military, and these large defense contractors, including Boeing. Did you know whether Boeing felt it had the government's ear in any way?

Mansfield Yes and no.

The leaders of the Air Force - then, the Army Air Corps - were strong for the new designs that Boeing had developed, the Flying Fortress. They thought that was just the greatest thing in the world. But, over on the Hill, in Congress, it was always a battle. We regarded it as part of our role to support the Air Force - the Air Corps - in their vision of a more effective air power. And the Congress wasn't willing to go for that at all. Not until we got deep into trouble did the situation change, and they began to order the kind of designs that Boeing had been developing.

That doesn't, perhaps, quite answer your question, but that's my recollection of it.

We weren't politically involved in getting the United States into the war, if that's what you mean. We were thinking in terms of what kind of equipment they needed for defense.

Q. I was actually thinking of a little later, and getting ahead of myself a bit. In doing research, I've found Boeing - Mr. Patterson's name comes up again and again, the assistant to the president of Boeing, testifying before just a succession of House and Senate committees. That's in '42 and '43.

Mansfield By that time, the whole emphasis was on war production. There was the War Production Board, and the War Labor Board, and there were all kinds of activities in Washington trying to maximize the all-out war effort. The War Housing Authority - I can't remember all of the alphabetical names.

We were on a totally military footing. It was just like a military government then. It's true that our people were back there testifying before committees - any committee that was preparing legislation.

I guess the Boeing Company, as we got into the war, had probably the highest priority of any - or very close to the highest - company in the United States. That was because its airplanes, the Flying Fortress and the Superfortress, the B-17 and the B-29, were very soon the planes that they most depended upon for their attack.

So we were highly involved with things that had to do with getting priorities because there were limited materials and they had to go first where the greatest need was.

Q. I'm going to go back to Pearl Harbor, and read a little bit from your book here:

Plant Two was a flowing tide of Flying Fortress parts and assemblies. Employment was up to 18,000. The B-17's and the oncoming B-29's had a top priority for materials...The B-17 schedule was accelerating each month to hit a peak of eighty per month by October 1942...

December 7 came that electrifying unbelievable newscast: "Pearl Harbor has been attacked...Untold damage has been done to the U.S. naval base and to the city of Honolulu itself by unidentified bombing planes.

Phil Johnson called Oliver West. "Meet me at the plant right away."

Rifle-carrying U.S. military police began arriving, barricading the highway past the plant. "Black out all the windows. Guard the Duwamish waterway. See about machine guns on Boeing Field. Scatter the parked planes." Johnson and West didn't go home that night.

Jake Harman called. "Start building airplanes."

"How many?"

"My instructions are you just start building. Never mind the schedules. Tell us how much money and what things you need when." Japanese imperial headquarters announced that Japan had entered a state of war with the United States and Britain. The U.S. Pacific Fleet was immobilized at Pearl Harbor. The formations of planes that appeared suddenly over Oahu had turned the naval base into a mass of wreckage. In Oahu, Seattle, or Emporia, no American that night went back to the same kind of sleep he had awakened from in the morning.

from Vision, Harold Mansfield, (Duell, Sloan and Pearce), pp. 187-188.

Mansfield Well, my recollection was that that day we really didn't know what was going to happen. We might be the number one target for Japan if they were within range, and there was tremendous tension.

It so happened that we had a program scheduled for the night of December 7 at the Civic Auditorium for our employees. We had all kinds of things going to spark up the enthusiasm and urge to produce more product per week and per month, because there was by this time a lot of pressure for production.

I had arranged for a speaker who was involved in the Battle of Britain to come and talk to our people, because it would make them feel like war. Like, there was a war going on. We didn't know that we were going to be in it.

One of the first questions I had was, should we cancel this thing? Might Seattle be bombed? What would be the liabilities of having most of our employees cooped up in the civic auditorium? We didn't know what was going to happen.

We didn't cancel it. I decided that we'd just go

ahead with it, and we did, and it was a very dramatic thing. Here was this occasion where not only were they hearing firsthand from a speaker on the war that was in process, but everyone was on edge because they knew we were in it now.

This sort of thing recurringly happened where we would find we could take advantage of news events to fire up the pitch of concern on the part of employees. Other people were fighting for their lives - these people realized they were working for the lives of other people. And there was that tension.

The other thing was what did we think about what might happen at the plant? You just read something that perhaps recalls the concerns there were then, but that went on for several days. Soon there was somewhat of a relaxation when it didn't appear that the Japanese Navy was that close that we were actually under threat. But nobody knew for sure - they might come down by Alaska, by the Aleutians, or what.

Q. At what point was the plant camouflaged?

Mansfield Well, it was started almost immediately, but it took a long time to cover the plant.

There was another technique that was used at first for defense, and that was barrage balloons. That was something imported from the British experience. They had some success with them. So we put barrage balloons up over the end of the field and up over the plant. You know what I mean by barrage balloons?

Q. I do, but you might explain it for the tape.

Mansfield Well, they're very visible! (chuckling) The idea was that if attack planes approached, they would get tangled up in the balloons and the wires suspended from them. So, for a while, there was kind of an anomaly. We had a partially camouflaged plant so they couldn't find it and barrage balloons which made it very easy to find!

Q. Big arrows up in the air!

What was the nature of the camouflage?

Mansfield Well, first, the plant area, and it was a sprawling plant covering acres and acres. Well, it's approximately the plant which still exists, that we call Plant 2, in Seattle, on the Duwamish Waterway. All of that entire roof was built up into streets and houses, with signs, different colored roofs, different colored houses with different types of roofs. And from the air, it just looked like a part of the city. It was very effectively done - right up to the point where the parking lot started!

There was a start on covering the parking lot with artificial foliage that was woven into chicken wire nets over the tops of the cars, and you'd drive under this. So many acres of area [were] involved in the parking lot, though, that that never got finished.

The field itself was effectively camouflaged. It was made into green colored farm-like areas, and roads, and hills, and all that painted on it. This was painted on the

runways and extended out into the taxi ways and the perimeter. And it was really effective. You could hardly find the field - you wouldn't be able to find the field if it hadn't been for the parking lot and information that the pilots had about what it was supposed to look like. And, of course, some aid from the radio - we didn't have much radar at that time.

Q. In your public relations after Pearl Harbor, did you make much use of the radio here locally?

Mansfield Seattle stations, you mean?

Q. Yes.

Mansfield Mostly just for news purposes. Occasionally there were programs intended to help in this effort to get production and employment. There was a lot of advertising and recruiting for employees, and quite a drive to get women to apply and to undergo training.

The plant gradually was "manned" by Rosie the Riveter.

Q. It's interesting looking at photos in the [1940's] newspapers that most of the Boeing employees are women.

Mansfield They were, because they were the main additional manpower available. Of course, there was a draft going on which kept taking men away.

Q. In that period after Pearl Harbor, was that your primary challenge - to recruit locally? Was that your primary goal?

Mansfield Well, our department was a fairly large department, and it included that responsibility. I personally didn't work so much on the recruitment advertising as on planning of things that would help the war effort. Excuse me, recruitment would be one of those, but I mean that would help in the plant.

We had a pressure schedule at all times that went - well, it would double production in the course of a year, and it was not possible to double employment. So you had to get more and more production out of the employees. That was done partly by methods that would produce more - they had layout boards and all kinds of tooling that would increase production. But there's a limit to how much you could do of that and I always felt that psychology had a big part to play. You could double the production psychologically. That was never proved.

Q. You could have written another book about that!

Mansfield But at the time of Pearl Harbor, the month before Pearl Harbor, the rate was about forty-five Flying Fortresses per month, which is one and a half a day, and they were big airplanes. That's a lot.

By the first of the next year, it was up to sixty because we'd poured on the tempo. Sixty a month.

And then it went up in '42 to 150 a month.

In '43, it was 250 a month.

And in '44, it was up as high as 360 per month, which was ten,

eleven, twelve planes a day! Big planes. And that was just a lot of work.

Q. Was there close cooperation between your office and a like union office?

Mansfield Not really, no. The function of the union then was mainly wage negotiation. There was a problem because part of the War Production Board, War Labor Board effort was to control wage[s] and prices. Along 1943, we weren't able to - there came a flat period where we couldn't increase employment. In fact, it went down. Actually between early '42 and 1944, when, as I say, production increased about six-fold, it was with almost exactly the same number of employees.

There had to be employees hired constantly because of the attrition, the turnover.

Q. Turnover was enormous, just enormous.

Mansfield Yes. But most of that increase in production was accomplished by means other than adding people. In fact, you went from skilled people, from men who had mechanical experience to these women who were quickly trained. A lot of it was accomplished by just the intense pressure that was involved.

Q. The unions, then, did not operate training schools as they did in other defense industries.

Mansfield Yes, they had something. I wasn't too involved with that, but...

Q. I was just wondering what the mechanism was of turning farmers from Wisconsin and housewives from Seattle into airplane builders.

Mansfield Well, the unions cooperated in the training effort. Actually, the training schools - there were training centers outside of the plants in some of the school facilities. I don't remember where they all were. Those were operated by the company, but with union cooperation.

What I was recalling - I didn't really answer your question about the union situation - when I mentioned their concern with negotiating improved rates. The company was sort of on their side for a while because our rates began to be outstripped by the shipyards, and there was a lot of communication with the War Labor Board. And they did approve, in 1943, at that time when we were losing employees, actually the total employment was going down instead of up, and our production schedules kept going up. It was a critical point, and they did authorize a new pattern of job evaluation. Our manpower people worked it up and submitted it. It classified jobs differently and resulted in improved wages for most of the people and a better starting wage that helped with the recruiting. Then the employment did start to go up again.

About the same time, one means that was used to get more people was to go into other communities. There were parts being built in branch plants that were started at about this same time - this employment crisis in '43. Aberdeen, Tacoma,

four years by then, since around '39, when the pressure started. So by the time we came to this war production, there was quite a lot of experience available.

And the same thing is somewhat true of management. There wasn't a sudden expansion - it was just an upgrading of people who'd gained some ability, and they were pretty sharp people. Building an airplane takes quite a lot of knowledge and savvy. They were able to take on bigger assignments...

I remember when the plant expansion began which was in the period when we were supporting the war in Europe. The first unit of Plant 2 had been built for the Flying Fortresses that we did have on order. There were first 13, and then 39, and then 39 plus 42 - those kind of numbers. Then after they recognized that this plane was needed in order to penetrate the German defenses and to bomb out the source of their war equipment, then the first order we got was for 512, and that required a further expansion of the plant.

They could kind of foresee the likelihood of still larger numbers. It ended up being 12,000 Flying Fortresses.

I remember Phil Johnson coming in as president - he had been president of United Airlines, and was a former president of Boeing. He was a great production leader. He had been up in Canada, running the Trans-Canada -

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Airlines. They (West and Johnson) together - they were responsible for founding and forming that airline.

A little guy named Oliver West, who was a production shark. I remember at about this time, when we got the 512 order, when we knew it was coming, he laid out plans that were just amazing to the rest of us.

He said, "While we're at it, let's build an ideal airplane plant."

That was the kind of looking ahead, and vision, that was going on. There were exciting looks at things that had never been considered before.

So when that plant was designed, it was designed for top production. There was overhead clearance that cranes would bring down parts from the balcony - sub-assemblies - and other cranes would leapfrog bodies - whole airplane bodies - over each other. There were long lines of Flying Fortress bodies, and only at the very end did all these things come together into final assembly. So we didn't have the typical Detroit automobile production line, where it starts at one end and things are added and it finally comes out the door. That just didn't fit the kind of highly technical production.

It was done in parts, in different parts of the plants, and then a lot of transportation and all this coming together finally in a fairly small area of final assembly.

Q. Had that modified kind of assembly-line production you describe - had that been introduced because of the semi-skilled workers that were coming in, or was that simply West's best solution to this very complicated...?

Mansfield I think it was both. I think it was partly because of a conception of how you could get the most airplanes out the

door out of a given square footage of plant space.

Willow Run was one plant that was run by Ford in the war production effort that tried to use the long extended line, and it didn't work nearly as well.

Q. What were their problems? Quality problems?

Mansfield Just they couldn't get the production out at the same rate that we were doing by this other method. I guess it was partly because they had never built airplanes before, too, and they had to get management who was capable of doing that.

So that was never too satisfactory an experience. I don't know if Ford would admit that, but that was our perception. (chuckling)

Q. So much of what you've said was what I wanted to read from your book - the second section was so striking to me. You say that:

Plant Two had become an amazing 1,500,000 square feet of production density. Oliver West and his men had developed a multi-line plan of production, a system adapted to the square shape of the plant. There were row upon row of chopped-off sections of bodies and wings, each alive with riveters and installation mechanics, some men, but mostly women in slacks....

Two years ago no one would have believed that that space would be turning out two hundred Flying Fortresses a month. Or that it would be turning out two hundred a month with fewer employees than there were a year ago when they were proud of one hundred a month. Or that Oliver West could sit with his charts and predict three hundred a month a year from now, still with the same number of employees. The "learning curve" on the chart showed convincingly that they were learning how to mass-produce.

from Vision, pp. 213-214.

Mansfield You know, there was another element that we haven't touched on. The government wanted Flying Fortresses, and later B-29's, so badly that they put practically the whole industry to work under a cooperative committee plan that Boeing was responsible for.

The Flying Fortresses were also being built in Lockheed plants, in California, and by Douglas, in California, and the B-29 was being built principally by Boeing in Wichita and later in Renton, our Renton plant, but also by the Bell Company in a big plant at Marietta, GA that later became the Martin Plant, and by Glenn L. Martin in Baltimore. And also General Motors Fisher body plant was involved, but they didn't turn out final airplanes, they turned out bodies.

But there was this tremendous aggregation of cooperative production. The only thing like it that I've ever encountered since was the nationwide effort that went into getting a man on the moon in the Apollo program. It was

Everett, Bellingham - each of those had a branch plant operation that was started then and all managed by the same people that were doing the Seattle production. They had about 600 employees each, so there were about 3000 more employees that were sending truckloads of parts in to be assembled in the main plant.

Q. About that assembly at branch plants - This is a question, I think, about where publicity and security interface. I was surprised to see in the Seattle Times in the fall of '43, a diagram of the B-29 which was a very new aircraft at that time to the public, showing where various parts of it were made. It didn't say what the supplier was, but where they came from. I was surprised. It seemed to me that that might be very important privileged information. I wondered if there was often a tension between what you wanted to tell the public and your own employees in order to involve them and get them excited about production and the requirements of security in wartime.

Mansfield Well, you're right. There was always that two-way pull. We weren't really trying to break down security - we were on the side of security because it involved the defense of our own equipment. But there would come a time when you were correct in releasing something to the press.

In the case of the B-29, that was very secure until the planes came out and were visible to the public. And at that time, the whole story of the B-29 was released that had been held by way of voluntary cooperation on the part of the press. We had about a three-day press announcement of the B-29 - it was in Wichita where the big B-29 production took place. Everybody had a press kit that told the story of everything they'd been holding out of the press until then. That was all voluntary - it wasn't enforced censorship.

But, yes, in connection with the branch plants and suppliers, vendors throughout the country - we tried to get the same pitch of interest and excitement on their part making them feel that they were building something that was critical to the war. They could feel that if they recognized where the part was going. If they didn't, they didn't really feel they were part of the war.

So, it's true, we did use that type of publicity.

Q. You may not know about this, but it's something that I've been curious about. We often talk about training Rosie the Riveter, and Okies and Arkies, and training these people - some of whom, they say, had never worn boots until they walked into the plant. Mustn't there also have been a crisis, perhaps a small crisis, in management? If during the thirties, things were as slow as they were, who led production during the war? Where did the technical people come from? Where did the industrial brains come from, to mastermind the enormous surge in production during the early '40's?

Mansfield I think a lot of it came out of ingenuity. There was an explosion of management - upgrading into assistant foreman, foreman, assistant superintendent, superintendent - all those factory jobs. At the same time, there was a huge pressure on engineering and technical talent. But that had been - the engineering and technical side had been under way for three or

a similar thing, and we were highly involved in that, too, where almost all the industry of the country was involved. The coordination of all these subcontractors whose work went together to make the final effort. Of course, that wasn't production - that was technical cooperation but it involved that many companies.

So this was a learning ground as to how you could do that, how you could make all industry coordinate its efforts so that the end product was successful.

Q. What tools did you use to weld your workforce into one? Were there publications? You've mentioned rallies - were they frequent? Did you use bond drives?

Mansfield Well, yes. All of that. We had a P.A. system where we were making announcements throughout the plant, and we had bulletin boards which were geared to showing schedules the different shops were making and how they were doing.

And we had a poster program that would change weekly or bi-weekly that would be the kind of things supposed to reach the middle of your heart and make it beat faster.

And quite a few assembly programs, where we would turn people out onto the apron in a sort of mass meeting - a rally type of thing. The first one we had - at least the first one after we were in the war - I remember President Roosevelt had soon after Pearl Harbor sought some means of turning fear and defeatism into a more successful enthusiasm and drive. He told a story on the radio about Captain Hewett Wheless, in a Flying Fortress. He and his crew over in the Pacific had battled off 18 pursuing Japanese fighters with the armament, the gun turrets, on the Flying Fortress until finally they were out of ammunition. And they survived all that riddling of fire. There had been experience in Europe already of the Flying Fortress coming home riddled with ack-ack and machine gun fire. This was a case where now the United States was at war.

So in the course of that, President Roosevelt said that Hewett Wheless was returning a war hero, and that he was going to be in the United States. So we immediately asked for him to be brought first to the Boeing plant, and that would be the sort of thing I would be responsible for.

We turned out, I think, 18,000 people gathered there on the front apron - a big mass. We played the tape of President Roosevelt's broadcast, and then as a kind of surprise, introduced Colonel Griffith, our Air Force representative at the plant, and Colonel Griffith introduced Hewett Wheless who was there. Everybody cheered and cheered, and Wheless got up and made a real nice talk.

And that's the sort of thing, well, that turns you on.

Q. Could you see a surge in production after an application like that?

Mansfield I could.

As I say, it was never metered. You couldn't tell that the program specifically gave rise to something but I think I credited for about an, oh, 15% increase in

production the next week, if you'll accept a little personal opinion. (chuckling)

Q. Was there a publication? Was the Boeing News published at that time?

Mansfield Yes. The Boeing News was published in a fairly copious form at that time. We had all kinds of news - everything that would keep people spurred and interested. And there was another edition in Renton, for the Renton plant. So we had two editions going. We had a fair sized staff on that. We also had a kind of employee relations group that arranged for - we had music in the plant, for one thing. We had a little unit that was selecting the right kind of music to make production go faster.

Q. A sort of proto-Muzak.

Mansfield Right, it was.

Then we had programs and entertainment groups to try to keep people from being bored.

Q. Was boredom a problem on the lines, like it is in Detroit?

Mansfield Not really, but you had to keep everybody cheered-up as well as tensed-up.

Q. That's an interesting way of putting it.

Let's see how to say this - optimism about an early end to the war seems to have been a problem that was faced throughout the war as people -

Mansfield Not at all!

Q. ...as people let down. It certainly is a problem that's addressed in editorials and in the newspapers in Seattle.

Mansfield Well, during this big production drive we've been talking about in '42 and '43, there wasn't much optimism. It looked like, "My God, when is the thing ever going to be over?!"

Then finally when there was some success with the war in Europe, we took a lot of pride in the success they were having because the Flying Fortresses were going in, at first, with two and three hundred plane raids, and then it got up to a thousand plane raids. They just destroyed Germany. They destroyed its ability to produce anything. We knew it was going to end, but by that time the Japanese war was a riddle. We were getting nowhere.

Nothing could get at the Japanese in their homeland. That's why the B-29 was regarded as so essential. They first started to fly out of southern China, they went over the hump from India to an airfield in southern China, and they were able to reach Japan from there, but only with relatively small bombloads.

Finally, when the Navy began winning back the Mariannas, and the closer islands, the B-29's moved up and

they could reach Japan proper both with bombs and then it got to be incendiary bombs and finally the atom bomb. From those bases.

But this is in '44 and '45, and even then there wasn't, I didn't think, very much optimism. I don't remember that, were there -

Q. Well, that's interesting.

Mansfield Were there editorials showing that - ?

Q. Yes, I've been mostly working in the summer and fall of '43, and it's a very common thing, perhaps once or twice a week, for someone, either a congressional delegate or a War Production Board person or a War Manpower Commission person to say, "We must not let up now, just because we've invaded Italy, just because of this or that, the war is far from over, and we need to do this, this, and this."

Perhaps optimism was not as common among people who were, well ...

Mansfield Who were right on the war effort. I don't think it was. You know there were a lot of things addressed to the public - they had to get along with less gasoline, and a lot of rationed goods. And you had to maintain their support (a striking clock is heard).

I don't remember it being especially a problem.

Q. It wasn't anything that you spoke to.

Mansfield I suppose we probably did, but looking back on it, I don't have any sense that we had an emergency of that sort.

Q. How cooperative was the local press? Was the local press very useful to you, or did you mostly work within your own plants?

Mansfield Both. I would say the local press and the national press were both extremely cooperative. There were very few times where you really had to battle with the press. They had a good sense of their part of the responsibility for a successful war effort.

As I'd mentioned before, we got cooperation in withholding news that they knew and our argument with the B-29 was when the B-29 finally got into action, we wanted it to be a surprise on the Japanese. And that was fairly successfully accomplished.

Q. When you discussed the Frye Packing Plant tragedy in your book, immediately after that -

Mansfield That was the experimental B-29 that caught on fire and came on -

Q. Right.

Just after that, you described another incident where the aileron controls had been crossed and misconnected. This

plane did not go up into the air, the pilot discovered before it went up, and you suggested - well you said that there was an investigation for sabotage that was inconclusive and turned up nothing.

Was there much concern over sabotage and espionage in the plants? Was there ever reason to fear it?

You sort of hinted at it [in your book], but was it a reality?

Mansfield There was a very active security department, and they were always concerned with it. But it never happened that we knew, that we actually - As I recall, we were fairly clear of that. There were a lot of precautions taken, you're right.

That crossed aileron thing - I don't remember that that ever was actually traced down. I think we concluded it was something in the stress of things.

Q. Just an error.

Mansfield The B-29 accident, since you bring it up, should be put in the context of extreme pressure to get that B-29 in operation faster than normally you would with any new airplane.

There had been problems with the engines, some of them resulting in fires. There had previously been one test flight that Eddie Allen, the test pilot, brought in after it had caught fire.

This happened again and they thought they could make it in. And they almost did. The Frye Packing Plant is on the final approach to the field. But the wing was on fire and they lost it.

We were having an executive staff meeting on the third floor of the Administration Building at the time. I took part in those meetings at that time. And we got that call that Eddie was coming in with the plane on fire, and that's a pretty electrifying call to break up the meeting.

Q. And he was someone who was your friend as well.

Mansfield All the people on it (the plane).

And Eddie Allen was the number one test pilot of the aircraft industry, I always felt. He was a tremendous man - I knew him very well. That was just a heart breaking thing.

And it was because they had to force ahead this schedule with such equipment as they had as fast as they could do it. It was extremely unusual to go into full production - hundreds of airplanes - before the airplane was ... The production was ordered before the first experimental airplane was even built!

The production was proceeding at a tremendous tempo in both Wichita and Renton while this test program was going on. So the results of the test were going to go right into the production line, and they had to have them just as fast as they could get them.

Eddie Allen didn't hold back. He just carried out the program whether the plane was ready or not. That's

what they had to do.

Q. It sounds like the stresses must have been just enormous on the technical staff and upper management at Boeing. Could you see signs of strain in people as the years went by?

Mansfield Well, yes, of course. I was with our president, Phil Johnson, in Wichita when that stress finally resulted in his death. It was partly stress, partly other things.

But, sure, it was a big responsibility.

Q. At one point in your book you say that it had concerned Johnson very much that Boeing was unable to plan for its postwar future. The need for what it could produce was so acute in wartime that the people who worked there were so good they were working themselves out of a job in the postwar world.

Mansfield Well, not only that, but these two airplanes - the B-17's and the B-29's - as I've mentioned, were the top priority war equipment. So while other plants could be starting work on their commercial products, Boeing was required to keep its full attention on these military airplanes.

So that's why Phil was concerned, because he could see the time would come when we might just be out of existence because of inability to get a new product ready.

Quite of a lot of us in the last couple of years ... I was quite involved with that. We had a good deal of research into new type postwar markets, and studies of going even into automobile production. They designed a new type of automobile which we never built, but it would have been a forerunner of what later became the compact car. It was quite a good piece of engineering.

There were studies made on private airplanes - to build private airplanes for the market.

Then, there was a contract obtained for a military transport based on the B-29. Toward the end of the war we got going on a commercial version of that which became the Stratocruiser and that was one type of equipment.

After Phil had his heart attack, his stroke, and they had to find a new president, and it was Bill Allen, he inherited the empty plant because the war orders were cancelled just about the time he was elected president. That was the first thing he did, to authorize going ahead on a production quantity of the Stratocruiser, the design of which had been started in the military cargo models that had been built.

So that eventuality was avoided, of having to go out of business.

Q. For your family, what was the impact of the war? How did you perceive Pearl Harbor?

Mansfield Gee, the thing I remember most - we were kind of scared!

There was all this stuff coming over the radio and in the press next day of what we should do.

Mrs. Mansfield That the Japanese might attack, and that they might attack in Seattle. In fact, very soon, there was an anti-aircraft ...

Mansfield battery emplacement.

Mrs. Mansfield Right over on Sunset Avenue, behind our home. And a large group of soldiers - were there about 200?

Mansfield I suppose.

Mrs. Mansfield - camping over there. There was a sort of a wildernessy place there where they set up camp although there were nice homes all around.

Q. In tents.

Mrs. Mansfield Yes, tents and everything.
They had gun emplacements that they dug out of the hill - two or three of those.

Mansfield It was right in a residential section.

Mrs. Mansfield Very nice homes all around there.

Q. What did your children think of that?

Mrs. Mansfield Well, they were too little to know. All I remember is a friend, after they'd left, our older daughter was about six or seven, and she and a little boy who was visiting us went over there to look at the empty gun emplacement and go down inside it. I couldn't find them. I called and called to get them home.

I went over there with Vicki in my arms, looking for them, and they were playing around in that gun emplacement which was still there, though the soldiers had departed long before.

Mansfield The very first day or two, I remember we went to the lumber yard and got two-by-fours, and fixed up a bomb shelter in the basement because we were all admonished to do that.

Mrs. Mansfield It was just a closet, really, with canned goods and things on the shelves.

Mansfield It was supposed to be something you could live in. And it was supposed to be strong enough to support a collapsing house.

Q. With 2 x 4's you built this?

Mansfield Yes. (chuckling)
And we had to black out the windows and that sort of thing.

But mentioning this artillery base or anti-aircraft - well, which was it?

Mrs. Mansfield It was anti-aircraft because Cecil, my brother-in-law - my sister met him when she was working as a - what do they call those people who watch for airplanes?

Q. Spotters.

Mrs. Mansfield She was in that contingent of volunteers that was working downtown. She met Cecil down there, but then it was his company that moved in over on Sunset Avenue.

Mansfield Yes, he was the young commanding officer.

Mrs. Mansfield He was a lieutenant then.

Mansfield So she ended up marrying him.

Mrs. Mansfield But it was interesting because most of the boys in the anti-aircraft battalion that were there were from New York City, and from Brooklyn

Mansfield "Blaha" and "Shudek" were a couple of the names. And they had this "Noo Joisey" way of talking.

Mrs. Mansfield We were being rationed, of course, for everything then. Meat, and sugar, and butter. I told you how my mother made butter because she couldn't stand the white margarine.

Q. I'm surprised that she could get cream, you know? I was thinking about that.

Mrs. Mansfield Well, the milk then did have cream in it still, you know. It wasn't homogenized. So she had this big, oh, about a two quart glass jar with a plunger in it and she made butter every so often. But we mostly ate margarine.

Mansfield But we had these two New Yorkers over for dinner several times because we enjoyed them. And also that was the name of the game then - you should entertain servicemen anytime you had an opportunity. Which we liked to do - we entertained others, too.

So they brought over a big bag of sugar, wasn't it?

Mrs. Mansfield Oh, yes!

I came home from town or from the store, I guess, and here was a big bag of sugar at the back door! And my mother was shocked - she said, "That's from those Army boys, and they've taken it from the kitchen."

Mansfield It was rationed, of course.

Mrs. Mansfield So she said, "I'm not going to take it. You girls will have to take it back over."

Well, we wouldn't take it over there. We just didn't feel like we wanted to take it over there and show up these boys who had stolen it, no doubt, from the kitchen.

Q. It arrived anonymously?

Mrs. Mansfield Yes, it just was there on the back porch.

My mother said, "I'll use it to make cakes and you can take the cakes over there." So she made five cakes, and we took the cakes over.

But anyway, it was rather scary at first to have all that Army group...