

An Interview with Gene H. Berry and George Wood

This document is a transcript of an interview with Gene H. Berry and George Wood conducted by Adelynne Hiller Whitaker concerning early activity in crop dusting with airplanes. The interview was held at the home of Captain Wood at 3420 Northside Drive, Hapeville, Georgia on September 13, 1972.

Mr. Berry became involved in crop dusting operations as a youth in Louisiana, joining the dusting division of Delta Air Corporation as a mechanic's helper. In later years he became superintendent of maintenance of the dusting division, and at the present time is a drop-press operator, and aircraft and power plant mechanic with Delta Airlines.

Captain Wood joined Delta Air Corporation as a duster pilot, moving on to the airline operations, and is now retired from Delta Airlines.

Mrs. Whitaker is a doctoral candidate at Emory University, writing a dissertation on "Pesticides and Regulation."

Mrs. Whitaker:

Mr. Berry, why don't you tell us something about how you became interested in aviation and in dusting.

Mr. Berry:

Well, to go back to the early days, way back, I was raised on a cotton farm in Louisiana near Monroe. One morning I was dusting in our field, and of course I was riding a mule, and using a saddle gun that had the dust in it. We used calcium arsenic and did two rows at a time, and I would turn the crank and ride the mule down through the field. That particular morning there was an airplane dusting across the river. Each time the plane turned, it would turn right over the field I was dusting, so that was really what got me thinking about airplanes.

Mrs. Whitaker:

How old were you then?

Mr. Berry:

I must have been about fourteen, I guess, at the time, and after I finished high school, I decided it was time for me to go to work for Delta, so I went out there and kept after them until they gave me a job.

Mrs. Whitaker:

And Delta was already at Monroe?

Mr. Berry:

Yes, that was in 1931, but the company was Huff Daland Dusters at the time I first saw the airplanes dusting.

Mrs. Whitaker:

And that is the same company that developed into...

Mr. Berry:

Delta Airlines.

Mrs. Whitaker:

What did you do for them when you first went to work?

Mr. Berry:

I went to work as a mechanic's helper and I worked from there up to superintendent of the shop of the Dusting Division of Delta Airlines.

Mrs. Whitaker:

And you stayed consistently in Monroe through most of those years?

Mr. Berry:

Yes, I was in Monroe until, well, I stayed with the company until 1950, and I left the company and went to farming.

I took a job on a plantation south of Monroe as an assistant farm manager. And then from that to one at Gillam, Louisiana and then, south of Bozier City, Louisiana. I came back with Delta in '59. All during the time I was working on these cotton plantations, we did all our dusting by airplane, and it had developed into spraying, too, by that time.

Mrs. Whitaker:

That was one of the things I wanted to ask you about. When you were first with the company, were they using only the dust?

Mr. Berry:

Only the dust. Calcium arsenic was the one thing we had and then later on, well, I don't remember all the different kinds, but benzene hexachloride was one of the ones that was used. It was real good, and we used tetraethyls also, which were the deadly poisons.

Mrs. Whitaker:

Was that in the fifties?

Mr. Berry:

In the late '40s. Let's see, we built our first sprayer in '48, and right about that time we started...

Mrs. Whitaker:

You began using the new synthetic insecticides at about that time?

Mr. Berry:

And those things, of course, were pretty potent. I guess that's the word you'd use. You had to be pretty careful.

Mrs. Whitaker:

Can you recall what kind of precautions you were instructed to use when handling calcium arsenate in order to protect your health?

Mr. Berry:

Well, it wasn't forced on you or anything like that, but you were told to be careful, of course, and it was poison. We knew that. We had studied about it in school, and we had little masks that when we were working on the airplanes around where there was dust, if we were working around the hopper, we'd put these masks on and if we would get dust on us, we would change clothes and stayed clean. I mean, you had to do that. Of course the calcium arsenic wouldn't burn you or anything like that. The arsenic, if you would breathe it, it would get into your system, but as far as I know, we never got enough of it to hurt us in any way.

Mrs. Whitaker:

And you knew Dr. B. R. Coad?

Mr. Berry:

He was with the company. He was an advisor to Delta back when he was still with the Department of Agriculture in Tallullah, and then, it must have been in '32, he came to work for Delta.

Mrs. Whitaker:

As an entomologist?

Mr. Berry:

Yes.

Mrs. Whitaker:

Did he prepare the poisons himself?

Mr. Berry:

No. They were prepared by the different companies and were ready-mixed in bags or barrels. Used to get them in those hundred pound barrels. They were metal barrels, remember those old metal barrels? We'd just chop them open with a hatchet and pour the material in the hopper.

Mrs. Whitaker:

Do you remember any of the companies that supplied you?

Mr. Berry:

Chipman was one of the main companies, and we used a lot of Sherwin-Williams materials also. And various other companies. I don't remember which ones. It depended on the locality of the country we were in.

Mrs. Whitaker:

When you say locality, they you moved around with the dusters as they went from area to area?

Mr. Berry:

Right. Our headquarters and overhaul shops were in Monroe, Louisiana, and we always had a unit in Mississippi, around Clarksdale, Greenwood, and Greenville and Scott, Mississippi. We had about ten or twelve airplanes in that area every summer. And we also had airplanes in Bryan, Texas. In the winter we would go to Florida and dust vegetables.

Mrs. Whitaker:

Then you dusted vegetables as well as the cotton?

Mr. Berry:

Yes.

Mrs. Whitaker:

Primarily you started out during the summer at Macon, Georgia.

Were they dusting cotton in the Macon area to begin with?

Mr. Berry:

That was all cotton. In other words, that was the reason the company was set up. Huff Daland Dusters was set up to fight the boll weevil. They got so bad in the early twenties it looked like they had to quit raising cotton because they would just eat the crops up and that's the reason that Huff Daland Dusters was formed. They stayed in Macon one year and then they moved to Monroe. I don't know the exact date, but the company changed to Delta Air Service and then to Delta Air Corporation.

Mrs. Whitaker:

And the company had people working for it, ground crews, mechanics, and people who actually poured the poisons in the hopper?

Mr. Berry:

Usually the plantation furnished the loading crews.

Mrs. Whitaker:

Oh, they did?

Mr. Berry:

When we first started using sprayers, we had mixing trucks that we used to mix the materials with water and pump into the tanks in the airplane. We had an operator go with them and that's all he did, was mix these materials and then put it in the airplane.

Mrs. Whitaker:

Now this was the liquid you are talking about. Was there a great deal of technical transition you had to go through with the airplanes when you changed from dust to spray?

Mr. Berry:

We didn't change them. They were either dusters or either sprayers.

Mrs. Whitaker:

Oh, I see.

Mr. Berry:

And the duster had what they call a hopper in it and the sprayers had a tank with pumps and a boom on the wing.

Mrs. Whitaker:

What determined whether you would use dust or spray?

Mr. Berry:

Well, it depended on the kind of poison that they wanted to put on, and then too it depended on several different factors. Now they could use spray in the day with up to as much as a fifteen or twenty mile an hour wind, but you couldn't use

dust, only early in the morning or late in the afternoon when you had moisture on the cotton to hold it or whatever crop you might be dusting.

Mrs. Whitaker:

Which do you think presented the greatest hazard to you as far as staying away from the poison?

Mr. Berry:

Well, you had to be careful with the liquid more so than you did with the dust, I think, because the dust wasn't as bad as the liquid. A lot of that liquid was the kind if you got it on your skin, I expect that tetraethyl was one of them, I think Ortho out in California came out with it, and if you got it on your skin and left it on there, it had a good chance of killing you if there was much of it.

Mrs. Whitaker:

Did you ever yourself experience any kind of bad results from the dust?

Mr. Berry:

No, never did in all the years we worked with it.

Mrs. Whitaker:

Didn't you wear gloves?

Mr. Berry:

I wore gloves mixing the materials. A lot of times when you were working with a spray boom or cleaning out nozzles or something like that, you didn't have time to use gloves or

they were cumbersome. All you had to do was wash your hands real good, and then we had a lot of insecticides that weren't real bad, like toxaphene. That was one that was used a lot.

Mrs. Whitaker:

This is in the later period, then?

Mr. Berry:

We did use some toxaphene dust, but most of it was liquid.

Mrs. Whitaker:

And this would have been in the 1950's.

Mr. Berry:

Yes. And I don't remember all the different brands or types of insecticides that we used, but they were insecticides that were pretty strong, because you'd use about, oh, maybe a pint to the acre and some of them were a half a pint to the acre mixed with either one or two or three gallons of water, whichever was the best, you know. But about three gallons of water mixed with the concentrates and sprayed on the crop was the most desired.

Mrs. Whitaker:

Captain Wood, let me ask you what your recollections are, and how you became interested in the dusting business.

Captain Wood:

Well, going way back to the beginning, I learned to fly in 1929 and then I barnstormed up through the thirties, and things in the flying business was very slow back in those days, no

jobs, and of course, when a guy give up trying to make it on his own, there was a rumor going around that you could go south and dust cotton.

Mrs. Whitaker:

So when you say, "making it on your own," was that in reference to the old air shows...

Capt. Wood:

Yes, and commercial aviation with what use one could be promoted with a plane.

Mrs. Whitaker:

So dusting was a last resort, then, for...

Capt. Wood:

That was usually the last resort for the pilot. They would go down and try out for dusting cotton. I was down in Florida, barnstorming, and Delta Air Corporation had a unit at Homestead, Florida. They were dusting vegetables, so that was the first duster I had ever seen and we operated off of the same field with Delta's dusting unit, and I got acquainted with some of the Delta dusting pilots.

Mrs. Whitaker:

Now these were the other men who were already dusting?

Capt. Wood:

They were dusting pilots on the unit based there. I became acquainted with the chief pilot there and asked him if he knew where I might get a job, and he said, did you ever try

Delta? I said, no, and he said, I'm going in to Monroe in a few days and I'll talk to Mr. Woolman about you. They called me to come down to Monroe to try out for dusting, and I was hired. That was where I started dusting with Delta.

Mrs. Whitaker:

When you say you tried out, did they have you actually go out with dust?

Capt. Wood:

They would have you fly the airplane and tell you what they wanted you to do, then they would decide whether or not you were crop dusting material.

Mrs. Whitaker:

And you would take the chances to get the...

Capt. Wood:

Whether they wanted you, where you would be able to fly...

Mrs. Whitaker:

Of course, you were a very young man at that time?

Capt. Wood:

Rather young.

Mrs. Whitaker:

Did it ever bother you, the danger that was involved with not only the flying, but with handling poisons which...

Capt. Wood:

No, it really didn't. We were too busy to think of any danger. We really didn't realize the danger that possibly could have

been in the poison by breathing or swallowing it. One of the things I do remember about it was when we started out at the beginning of the season for the first week or two it would make some of us ill sometimes, as one's system was not used to the poison.

Mrs. Whitaker:

Then this was the calcium arsenate?

Capt. Wood:

Yes, at times it would make one very sick.

Mrs. Whitaker:

What kind of symptoms? How did you feel? Nauseated?

Capt. Wood:

That's right, like you eat something that was kind of poison. But after a couple of weeks we would get immune to it, and could breathe a lot of it and it wouldn't affect us.

Mrs. Whitaker:

Did you get much of it in the process of dusting? Were the fumes pretty well in back of you?

Capt. Wood:

No, the hoppers were in front of us. We sat behind the hoppers, but they were pretty well sealed. And unless you got a leak in one of them, you usually wouldn't get any poison in the cockpit with you. The worst trouble we had was with the loaders, they were from the plantation, the planters furnished

the loaders. Sometimes they would get a little careless and would spill some of that dust in the cockpit, and of course when they did, and we took off, dust boiled around in the cockpit for practically the rest of the morning, and we breathed quite a lot of it that way. That happened quite often.

Mrs. Whitaker:

What kind of action did you take, other than washing yourself? You mentioned, I think, something about using milk to...

Capt. Wood:

That was for sulphur. Sulphur affected us more than calcium usually, because if you got sulphur in your eyes, it was almost impossible to keep it out, especially if you didn't have much drift in the morning, it would just boil out on the swath and when you come down to the next swath you would have to fly through some of it in order to get your dusting at the proper poundage per acre.

Mrs. Whitaker:

What were you putting this on?

Capt. Wood:

On cotton, mostly for flea hopper. The flea hopper was the first thing that would damage the cotton. That would be the first thing we'd use when we'd start out the season would be sulphur. Before the cotton got too large.

Mrs. Whitaker:

And that was put on in dust form, also?

Capt. Wood:

Yes, it was very inflammable, too. It could ignite, explode. Catch fire.

Mrs. Whitaker:

And you would use the milk to wash...

Capt. Wood:

When you'd get that in your eyes, it was really rough. It would really set you in misery and we would try everything we could think to use as an eye wash because it would be several hours before the effects of it would leave you. We would buy milk and lay down and pour it in our eyes. Everybody seemed to have a new theory he thought would work and we tried several remedies.

Mrs. Whitaker:

Can you remember some of the other remedies?

Capt. Wood:

Well, we used water, milk, honey mixed with water, about everything we would think of. Some had very wild ideas; none of them worked very well.

Mrs. Whitaker:

Did any of you ever become ill enough to see a doctor during the time?

Capt. Wood:

No, the only time I saw a doctor was when I got malaria in

Mississippi. That was the only time.

Mrs. Whitaker:

That you had to have medication?

Capt. Wood:

I was doctored for malaria.

Mrs. Whitaker:

Do either of you have any comment on the effect that the poisons might have had on insects other than the type that you were trying to kill? You were trying to kill the flea hopper and the boll worm, but were you killing other insects as well, that people might have complained about?

Mr. Berry:

Well, now the calcium arsenic of course was very poisonous. It was mixed in a mixture, I don't know how much the percentage was, but it was a small amount of calcium arsenic mixed with a large amount of lime. But if it got on the grass and a rabbit ate it, it would kill the rabbit, just like it would the boll weevill, or if it drifted far enough and they got enough, it would kill a cow. And they had a few instances like that, but I'm sure, of course, that the beneficial insects, too, went right along with the boll weevil.

Mrs. Whitaker:

How about in the springs? Did you hear anything about water pollution? Was anybody concerned about that?

Mr. Berry:

The only thing that I know of where it hurt the fish was from toxaphene.

Mrs. Whitaker:

This was in a later period?

Mr. Berry:

Yes, that was in the fifties. As far as the the calcium arsenic, I don't know of any water pollution at all.

Mrs. Whitaker:

Well, I saw one photograph taken in this period that showed the aircraft coming down about six feet above the cotton plants. People were actually standing to both sides watching this and they were in the drift. They were not concerned about the drift? Did you have many Sunday spectators?

Capt. Wood:

You had a lot of people who would stop along on the highway if you were dusting close to the highway. They would stop and watch you. The people working in the fields would always watch the dusters. Sometimes on Sunday if we were doing evening dusting we would have quite a large gathering of spectators.

Mrs. Whitaker:

Did you ever have any experiences, Capt. Wood, with people having to dodge out of your way?

Capt. Wood:

Yes, there were times that I did. One of the things I might mention, at times some of the people who worked on the plantation would have little gardens out in the cotton field, and the planters would tell us not to pay any attention to them, just go ahead and dust right over them, but, of course, we'd try to shut off as much as possible when we'd pass over them, but usually the drift would settle over and get them anyway.

Mrs. Whitaker:

And these would be vegetables...

Capt. Wood:

Yes, little vegetable gardens and of course calcium dust would kill it completely.

Mrs. Whitaker:

Oh, it would kill the plants?

Capt. Wood:

Yes, it would completely kill the gardens, ruin it.

Mrs. Whitaker:

Were there any repercussions from neighbors of the people, for instance, that you were dusting for?

Capt. Wood:

Sometimes they would throw things at us as we flew over. We tried to protect their gardens even though the plantation owner told us to dust over them. The gardens were not supposed

to be planted in the cotton fields.

Mrs. Whitaker:

For instance, if a cow was accidentally killed by a drift, did the owner of the cow generally show animosity toward the company or to the owner of the land who was using the services of the company?

Capt. Wood:

Oh, yes, Delta had several lawsuits over the loss of cattle.

Mr. Berry:

Well, none of us know too much about it, but I think it was worked out between the planter that we were working for and the company, and of course they'd take care of it, you know.

Capt. Wood:

I know of one time at Indianola, Mississippi, they said I killed nineteen head of cattle, and of course the company said that they were the most precious cows in the state when it came to settlement in the lawsuit.

Mrs. Whitaker:

Did they generally settle out of court, do you know, or were any of these actually taken into court?

Mr. Berry:

As far as I know, it was all out of court. I don't remember a court action, but if there was a pasture close, they'd try to move the cattle. They were pretty cautious about those things.

Mrs. Whitaker:

Delta would try to...

Mr. Berry:

Well, the planter would take care of it, usually.

Capt. Wood:

We had no trouble along these lines unless the drift was reversed by the air movement. Sometimes you'd start dusting and the drift would be from the right but in an hour or so, before you finished it would reverse. If a pasture was located such as to be effected then it could mean trouble. Once a pasture was poisoned, it remained affected until they had rain.

Mr. Berry:

You had to have rain to wash it off. Several big dews would take care of it usually, too.

Mrs. Whitaker:

And the cattle were not allowed to graze...

Mr. Berry:

No, if one drifted over, they usually got them out of there, if it did happen.

Capt. Wood:

Yes, whenever they knew about it, they would make efforts to move them fast.

Mr. Berry:

They tried to be pretty careful about, you know, not dusting

other crops than the cotton or whatever they might be dusting, because, take soybeans, calcium arsenic kills soybeans.

Mrs. Whitaker:

Oh, I didn't know that.

Capt. Wood:

If you dusted a bean patch, it would completely kill the beans. Sometimes a pilot would mistake a bean field for a cotton field.

Mrs. Whitaker:

That sounds like an interesting story.

Capt. Wood:

They gave us a special training course so we could tell cotton from beans, and at 80 miles per hour and six feet high, you could hardly tell the difference if not careful. When young, the plants kind of look alike. You had to be real careful, because sometimes they would have a bean field joining a cotton field, and if you didn't watch the acreage and know your maps good, you'd whiz right on over one of those bean fields and of course, that was the end of the beans.

Mrs. Whitaker:

It sounds as if you might have learned that first hand?

Capt. Wood:

I got in the wrong field once or twice.

Mrs. Whitaker:

What did the company usually do in a case like that? Did they replant for the people, or...

Capt. Wood:

The company would pay for the damage.

Mr. Berry:

I think so, too.

Capt. Wood:

I think they settled out of court.

Mrs. Whitaker:

What do you remember about Dr. Coad himself? What was the extent of his participation after you were both working in this? Is there anything you can recollect about him?

Mr. Berry:

He always headquartered where the largest unit was. If it was in Florida, he went down there in the winter, and if it was in Mississippi, he'd go down there. In the summer, though, he'd work between Bryan, Texas, and Mississippi, and he was pretty close to it. And of course, he didn't stay in Monroe very much because he didn't have time. There were dusters all over the country, you know, and he was with them. But he did stay in the field pretty well, and he had his crew of field men and entomologists under him, and they would all get their instructions from him early in the morning and then

they'd all go out and at night they'd come back in and make their reports.

Mrs. Whitaker:

He conducted experiments right along with this, I suppose, to determine what kind of poison you were going to use?

Mr. Berry:

Yes, he worked pretty close with A&M colleges, especially down in Bryan, Texas.

Mrs. Whitaker:

Bryan and the college there?

Mr. Berry:

He took their recommendations and there were a lot of recommendations he could give them also.

Mrs. Whitaker:

I can imagine.

Mr. Berry:

He had worked out a lot of different formulas in the early days and after he left the Department of Agriculture and went with Delta, he still worked out a lot.

Mrs. Whitaker:

And did you have any personal dealings with him? What kind of man was he? Was he easy to get along with?

Mr. Berry:

Well, I would say he was, yes. Because I worked for him after the airline moved to Atlanta, and he was manager of

the dusting division. I worked directly under him the years I stayed with the company. And we got along all right.

Mrs. Whitaker:

He was a rather forceful man, though, in his opinions?

Mr. Berry:

Yes, when he decided something, that's the way he wanted it. There wasn't any variation, really.

Mrs. Whitaker:

I read an article or a critique of an article that he did about someone who made some claims about dusting that he didn't agree with, and I think he prefaced it with something about "it's pure baloney" and went on from there, and he seems to have been a rather colorful man. Do you have any recollections about him, Captain Wood?

Capt. Wood:

Well, he was a slow, easygoing man, I remember, He usually always wore a pair of leather boots, always smoked a pipe.

Mrs. Whitaker:

Did you, Mr. Berry, continue to supervise the loading of the planes in the later years, in the 1940's?

Mr. Berry:

No, all of my work was with the airplane itself, the construction and the maintenance of it. But we did work out the tank trucks with the pumps on them, and then put an operator on it and sent him out. Sometimes I'd go out into the field

but not too often. The only time I went out was when they had an airplane down, to get it back in the air.

Mrs. Whitaker:

Did you have any number of accidents that you recall?

Mr. Berry:

Yes, we had several accidents while I was with the company.

Mrs. Whitaker:

Do you think that any of them were attributable to the effect of any of the poison on the pilots, perhaps?

Mr. Berry:

I really don't think so. Most of them were from hitting a high line, or, I don't even remember one that was ever from an engine failure. It was usually from hitting something. Do you know of any other than that, George?

Capt. Wood:

The only engine failure that I remember was Stanley Kluzek in the Travelaire. A broken crankshaft, but there was no damage to the airplane. He landed in a cotton field. No, I don't remember any.

Mrs. Whitaker:

When you first quit barnstorming and went to dusting, you were not married at the time?

Capt. Wood:

No.

Mrs. Whitaker:

Were your parents and your family concerned about what you were doing?

Capt. Wood:

No, my mother didn't know that much about dusting. No, there was no concern.

Mrs. Whitaker:

Where did you live? I mean, was there a great deal of fellowship, camaraderie among the dusting pilots? Did you usually stay close to the airport, or did you live separately?

Capt. Wood:

Yes. The pilots were a happy-go-lucky bunch, and got along very well, and most of the time we would stay on the plantation we were dusting on, if it was a real large plantation...

Mr. Berry:

Like Scott, for instance, in Mississippi...

Mrs. Whitaker:

This is what I...

Capt. Wood:

That's right. And then other times we would stay in a hotel in the city and the airplanes would be based out at some field or in some cases at the local airport.

Mrs. Whitaker:

If the plantation did not have a...

Capt. Wood:

And that would be our head base, and of course, in the morning sometimes our morning would start at 2:30 a.m. and we would fly maybe 40 or 70 miles to the plantation we were going to dust and had to be there and loaded up, ready to go at day-break. As soon as it was light enough, we wanted to be ready to go because we had to put out all the dust we could while the dew was on, and we'd have to really get an early start in order to get it all finished.

Mrs. Whitaker:

And you could dust again later in the evening?

Capt. Wood:

At times we did. Some of the planters didn't want evening dusting. They only wanted the morning dusting. Others would use the evening dusting.

Mrs. Whitaker:

About how many hours a day would you estimate that you generally flew?

Capt. Wood:

I would say an average would be about three or four hours. Sometimes it would be more and sometimes less. A lot of times it would depend on the terrain. If we had large fields and no obstructions, we could finish a lot faster, but if we had cut up acreage with trees and high lines and things like that, it was kind of a slow process because you had a lot more

turning and winding around to do which used up time.

Mrs. Whitaker:

Much more dangerous, too, I would think.

Capt. Wood:

Very much so.

Mrs. Whitaker:

Did the CAA supervise or watch your operations very carefully?

Capt. Wood:

No, there was no such thing as an agricultural license at that time. I understand that they have that now. The company had a waiver for us to fly low and covered everything for that kind of flying.

Mrs. Whitaker:

The altitude and everything?

Capt. Wood:

I think it was a low-flying waiver.

Mrs. Whitaker:

Did they ever send anybody out to inspect your equipment or did they depend on the maintenance company?

Mr. Berry:

Yes, they came around once a month, used to a long time ago. And checked your equipment and relicensed your airplane, but then we very seldom had anyone out in the field. They have gone out and looked at different airplanes over different

parts of the country, but then when they started this making mechanics designated inspectors, I was one of the first ones that got one. My inspector's number was 45 and then they knew that I was going to do it right. There wasn't any other way to do it, you know. Now maybe I'd see the district inspector every six months and sometimes I'd have to call him to get him over there if I needed him, but then I took care of all the licensing of the airplanes and all the paper work and everything.

Mrs. Whitaker:

You evidently had a very good record, because I don't recall reading anything about any irregularities.

Mr. Berry:

We did our best. We had the best airplanes in the business. The best maintenance. I don't say that just saying it, it was true.

Mrs. Whitaker:

You started out with Huff Daland Dusters?

Capt. Wood:

Huff Daland Dusters and we had one Travelaire, it was a J5 Travelaire which we used for dusting, and then we later went to Stearman, after the war, PT17, we converted those into dusters and sprayers and used those up until we quit dusting.

Mrs. Whitaker:

I understand you built the Huff Daland yourself.

Mr. Berry:

We built three. We were the factory. In other words, when Huff Daland went to Delta, we had manufacturing rights to the aircraft. In 1937, we built three new airplanes and got three new numbers on them. That was the only outright new airplanes we built. We built a lot and we'd have to have two or three feet of the tail section, or something like some part of the airplane or the fuselage, in order to keep the same number. But it would be a brand new airplane except for maybe that much of it.

Mrs. Whitaker:

You were with the company during World War II.

Mr. Berry:

Yes.

Mrs. Whitaker:

Did you encounter any difficulty getting poisons?

Mr. Berry:

No, because that was an essential business. That cotton of course was essential and so were the vegetables. And we could get parts and dust and fuel pretty regularly. We didn't have much delay on it.

Mrs. Whitaker:

Until DDT and the synthetic insecticides, you stayed with calcium arsenate? Can you recall in what year you first began using another...

Mr. Berry:

No, I don't. But I do remember one thing, and that was after about 1953, the weevil had got immune to benzene hexachloride and toxaphene and other dusts we had, and we went back to calcium arsenic in '53.

Mrs. Whitaker:

Oh, you did.

Mr. Berry:

No, '55 it was. In '55 we dusted with calcium, the only way we could get rid of them. We had to go back to calcium arsenic and then, after that, I think they came out with new synthetics, I don't remember all the different names of them.

Mrs. Whitaker:

And you had mentioned, Capt. Wood, your primary concern was getting the mixture at the right dosage per acre. The company instructed you, then, on this?

Capt. Wood:

Yes, one of the main things, if they would change to a different brand of dust than what we had been using, they would brief us on a probable correct setting to use. The hopper control had a pin and several holes in it, and you set it in the proper notch for the proper poundage. Different dusts would require different settings.

Mr. Berry:

Some of it would seem to be heavier than the other, and it would float faster.

Capt. Wood:

Yes, you had to be real careful cause you'd lose a load of dust in one swath if you didn't get the right setting. One instance I never will forget was down in Florida. A planter had a field of pole beans and there was some certain insect that was about to eat them up so they put pyrethrum on them, and they briefed me, wrapped me all up so that I'd be protected from breathing any of it, and I volunteered. They asked for volunteers to put the pyrethrum out so I volunteered and I must have got a little snuff of it, it sure was potent. Almost made me sick.

Mrs. Whitaker:

What reaction did you have?

Capt. Wood:

Well, it was kind of sickish and it lasted a few hours and then I was all right.

Mr. Berry:

Another dust we used back for aphids, too, was nicotine.

Nicotine dust we used for aphids.

Capt. Wood:

I remember that.

Mr. Berry:

Before we got the synthetics, and then that stuff was terrible.

Mrs. Whitaker:

Really, what...

Mr. Berry:

It would make you sick to breathe it. Really, I guess it's just like, well, nicotine will still affect you. You'd be working on a hopper or something and it would have a lot of nicotine dust in it, and it'd burn your eyes. You'd get where you couldn't hardly breathe 'til you got out of it again.

Capt. Wood:

Like a non-smoker smoking a cigar for the first time.

Mrs. Whitaker:

I wondered if you ever got lightheaded or woozy from this...

Mr. Berry:

I'm sure we did to a certain extent, but I think that nicotine was the worst thing that we had to contend with as far as it affecting you. Now a lot of this other stuff you could get washed off before it would affect you in any way, but we were careful.

Mrs. Whitaker:

What crops did you put the nicotine on? On vegetables?

Mr. Berry:

The only place I remember is on cotton for aphids. And I wasn't too much in contact with the vegetables in Florida because I stayed in the shops in Monroe all winter, overhauling the airplanes. Once in a while I would go down there, but not very often.

Mrs. Whitaker:

I suppose that presented some problems on vegetables. You couldn't dust them too close to harvest and things of that sort. Were you particularly concerned with residue on the vegetables, for instance?

Capt. Wood:

No, one of the things I can remember, they had to be careful and not completely kill out some of the insects because insects eat insects and if they were completely killed, certain species of insects would take over and they would have to find the dust that would combat them. So it was a kind of a technical situation.

Mr. Berry:

It really was, because the ladybugs will do away with the aphids, they will do away with boll worms, the little ones, different kind of worms.

Mrs. Whitaker:

You had to be careful not to...

Mr. Berry:

They tried to put on something. The experimental stations worked pretty well with that to try to find something that they could use that wouldn't... that's one reason, I guess, that the weevil got immune to certain poisons.

Capt. Wood:

Gene, one thing we might mention is that most of our entomo-

logists were college professors and teachers that would go out in the field on their vacations in the summer and...

Mr. Berry:

And work, like Mr. Leo Hartman. Leo Hartman taught me science in high school before, and during the summers he'd work for the company and then finally he just quit teaching and went to the company full time.

Mrs. Whitaker:

I see, as an entomologist for the company.

Mr. Berry:

But they were all, as George says, college graduates and they were scientists. But getting back to the years that we actually quit using calcium arsenic and went to the other dust, I don't remember. I'm sure that there will be some way that you can find out.

Mrs. Whitaker:

Oh, yes, I think that DDT was not even released, it was not even available until the late 1940's. Did you have any experience with DDT?

Mr. Berry:

I think we used some DDT. I remember that we'd have some dust that would be a mixture of maybe some toxaphene, some DDT and something else, you know, that put them together, and that way you could kill a weevil and the boll worm and

aphid or something like that in the same time. Aphid was one of the hardest things to kill, though, seems like.

Mrs. Whitaker:

Did either of you have any experience with the autogyro? I remember reading that during the 1930's it was suggested that the autogyro would be more effective as a duster.

Capt. Wood:

There was one that operated off of the Homestead Airport while we had a unit there. It wasn't with our outfit, it was with, some private fellow had one for dusting down there, and they had quite a bit of complaint about it. The best I can remember, the downflow was too great and some vegetables were damaged.

Mrs. Whitaker:

Oh, it actually damaged the crop itself?

Capt. Wood:

And the helicopter was the same way. They had to be careful with it, it damaged some of the plants.

Mr. Berry:

I don't think they ever were real practical. There was some reason. They never worked out as well as the airplanes.

Mrs. Whitaker:

Delta never did use the helicopters in its operations? I recall seeing some drawings of an airship which was used or was proposed to be used. Did you ever encounter an airship

that was set up for dusting?

Mr. Berry and Capt. Wood:

No, never, no.

Mrs. Whitaker:

I saw some drawings in Scientific American that suggested that the balloon would be ideal because it would move slowly and they could get better coverage.

Mr. Berry:

Well, I think that they finally found out that about 90 miles an hour with a fixed-wing aircraft was really the best. The Huff-Daland Duster was as far as I know the best duster that was built. Of course, after we went to using PT17s, after the war we didn't have all the help we needed, we had run out of airplanes and we had to do something. The expense of building them, too, that's pretty high, and we couldn't build them. But the PT17 made a good duster, but it wouldn't carry the load. The maneuverability of it wasn't as good as the Huff Daland Duster.

Capt. Wood:

The Huff Daland had negative stability built in it and was highly maneuverable.

Mrs. Whitaker:

And most of your flying was in the Huff Daland?

Capt. Wood:

All of mine was in the Huff Daland, dusting for Delta.

Mr. Berry:

I put a hopper in the first PT17 at Number One hangar at Delta in March, 1945, and we flew it to Florida and operated it down there and worked the bugs out of it and then bought more.

Mrs. Whitaker:

That was when the Army then began selling them?

Mr. Berry:

Put the first hopper in the first PT17 that ever was converted.

Mrs. Whitaker:

Well, that's interesting. Do you know what happened to that airplane?

Mr. Berry:

Yes, a man named Rainwater cracked it up in Mississippi. He hit a telephone pole and then went into a bog with it and tore it completely up. There wasn't any usable parts left. The only thing that is left of it is a piece of flying wire about 8 inches long. I use it for a letter opener. Didn't hurt Mr. Rainwater at all, but it sure did tear the airplane up.

Mrs. Whitaker:

Well, that was one of the fortunate things about some of those accidents. They did leave the pilots pretty well intact.

Mr. Berry:

For the twenty years that I worked for Delta, we lost seven pilots.

Mrs. Whitaker:

Well, that's more than I had thought.

Mr. Berry:

The first one that I can remember was a man named Williamson, I believe. He was an army man, and he come over to try out for flying, and he had made several swaths across the field, you know, practicing.

Mrs. Whitaker:

Was he releasing dust?

Mr. Berry:

Yes, we used lime when they were practicing like George says, when they were trying out to see how they were going to do, well, we'd put lime in the hopper and let them lay it so they could see what they were doing. And he pulled up at the end of the field and I suppose what happened, he had been flying an airplane with a lot of power, and he thought this airplane had power, too, and it didn't have as much as he thought or something, anyhow, he spun in.

Capt. Wood:

The Huff Daland was an airplane of its own peculiarities. There was no other airplane that I've ever seen that was like it. It was strictly built for the job that they used it for and when you were flying it on the straightaway, the engine sat way down below the horizon. In other words, you could see 15 or 20 feet in front of you, you were setting out there looking straight ahead. And most of the airplanes back

in those days, when you were flying straight and level, the engine sat way up on the horizon. With a beginner, they'd brief them and explain to them the peculiarities. There was just one person in the airplane, so they had to brief the pilot completely on how to handle it. And for someone who wasn't used to it, a beginner, if he pulled it up to where the engine was like a normal airplane, it would stall. The airplane had no vertical stabilizer on it, vertical fin, it was just the rudder, the whole rudder turned, and the stall characteristics on it were much different than most of the airplanes that were built in those days.

Mrs. Whitaker:

And you would do most of your work between six and eight feet above the crops that you were dusting?

Capt. Wood:

Five to ten feet above cotton, and vegetables about one foot.

Mrs. Whitaker:

Oh, really?

Capt. Wood:

You wanted to get as close as you could.

Mr. Berry:

Drag your wheels in it.

Capt. Wood:

When Luke Carruthers was dusting in Florida one time, the planter was out watching him, and came running back over when

they was loading and said, "Luke, fly just a little lower, just a little lower." So the next load of dust, he dropped the landing gear in the potatoes, and of course he mowed them off about six inches above the ground. So the farmer dashed back over in the pickup truck and said, "Luke, just a little higher, just a little higher." Those pictures were taken at Scott, Mississippi, on the Delta Pine Land company plantation. And it's said to be the world's largest cotton plantation, 33,000 acres, and is owned by an English concern.

Mrs. Whitaker:

Oh, and these are the drums that you are describing to me a moment ago. What was the capacity of those, did you tell me 100 pounds?

Capt. Wood:

100 pounds. There beside them is the loading crew. They have a hatchet they use to chop the tops out...

Mrs. Whitaker:

And take it right out of that into...

Capt. Wood:

And there they are loading. One stands in the cockpit, the others hand the drums up to him. They would have the tops chopped out while we were putting out a load, and when we come back they were really fast, they would pour the 600 pounds in there in just a matter of a couple of minutes or so.

Mrs. Whitaker:

They didn't transfer it to any other container? It would go directly from the drum into the hopper?

Mr. Berry:

One of them would be standing in the cockpit and there would be two of them on the ground and they would just push it up to him and he would catch it and dump it right over in the hopper.

Capt. Wood:

And throw the can out the other side. They dump them right inside here. The pilot would get out and stand out of the way, and as soon as the loader crawled down out of there, the pilot would jump in and be on the way.

Mrs. Whitaker:

Was the engine running?

Capt. Wood:

Yes, the engine was in idle.

Mrs. Whitaker:

They left the engine running through that? and the hopper held about 600 pounds of the calcium arsenate?

Mr. Berry:

Six to eight.

Mrs. Whitaker:

And that was in the Huff Dalands? That was the hopper load?

Capt. Wood:

That's right. Calcium arsenic, 600 pounds would do 100 acres.

Our average was six pounds to the acre.

Mrs. Whitaker:

I see.

Capt. Wood:

Do you think we have anything else here that's worth looking at? He's opening the cans while the airplanes are out dusting.

Mrs. Whitaker:

The company furnished the dust but the planter furnished the loading crew for you?

Mr. Berry:

They furnished the dust and the loading crew.

Mrs. Whitaker:

Oh, I see. They would buy the dust also.

Capt. Wood:

They would buy that dust by the trainload on a plantation like that.

Mrs. Whitaker:

I remember reading something about there being a shortage of calcium arsenate from time to time. Did this actually affect your operations or were you able to get it?

Capt. Wood:

I don't remember any time; of course it could have been when I was at the shop and not out in the field.

Mrs. Whitaker:

And then during World War II, you said you didn't have any trouble at all getting it because of the priority that was given it? Did you have any trouble keeping pilots during that time? What did you do for pilots during the war?

Mr. Berry:

Well, we'd bring George back and make him fly a little, take him off the airline and put him flying.

Capt. Wood:

I was on the airline, the first two years they'd send me over to Mississippi to dust.

Mrs. Whitaker:

Well, that's interesting.

Capt. Wood:

There was two of us. Of course, we didn't mind going in a way, because we were making \$180 a month on the airline and over there we were making about \$500 a month.

Mrs. Whitaker:

It wasn't hard to persuade you?

Capt. Wood:

We didn't mind eating a little dust.

Mr. Berry:

But we didn't seem to have, I don't remember having any trouble getting pilots during the war. Of course, you never would get the same one every year, you know. You'd have a

new pilot next year, and he might be flying in India or somewhere.

Mrs. Whitaker:

Did you ever get men who might be on leave or furlough who would come and fly for you?

Mr. Berry:

I don't remember any like that.

Mrs. Whitaker:

This, the photograph we are looking at, seems to be a field that would be fairly easy to dust. These are just roads?

Mr. Berry:

That was some of the best, there. This was usually experiment cotton, and this was Delta Pine and Land over at Scott, Mississippi, and these were experimental plots.

Mrs. Whitaker:

Of different varieties of cotton?

Mr. Berry:

Yes. And that was about the only place you'd find a square field like that.

Mrs. Whitaker:

You have some pictures here of the... Now was this the one that you reconstructed?

Mr. Berry:

No, this is one of the old original airplanes. I think that this picture was made in Macon, I believe.

Mrs. Whitaker:

What is the symbol that is on the side of the airplane?

Mr. Berry:

Thor, flying over the field, blowing dust on it. Delta's insignia.

Mrs. Whitaker:

And who designed that, do you know?

Mr. Berry:

No, I don't. I kind of think Mrs. Fitzgerald had her hand in that. I think she suggested it.

Capt. Wood:

That was 59, wasn't it?

Mr. Berry:

No, we rebuilt 49.

Capt. Wood:

Oh, was it:

Mrs. Whitaker:

The one they rebuilt that's in the Smithsonian. Tell us about that. I read in the Delta Digest the story of this, and that it was a project that all of you undertook. Do you know who brought the idea up originally?

Mr. Berry:

We had talked about putting one of them in the Smithsonian several years back, I guess in the '50's and then it just died out. They just forgot about it or something, but anyway,

after Mr. Woolman's death, we had, I guess you'd say a lot of junk in one of the buildings over in Monroe. We asked about it, several of us in the company, so the directors gave the airplanes to the employees and we in turn put up the money to rebuild it and also put up or donated our time. When we got it from Monroe, it looked like this.

Mrs. Whitaker:

Just pieces, collected?

Mr. Berry:

There are parts of wings and elevators, stabilizers, two fuselages that were in fair condition, and the gears were in bad shape, the whole thing was in bad shape, but then we made a good airplane out of it. The best one that's ever been built.

Mrs. Whitaker:

I read the story of that.

Mr. Berry:

Yes, that was Henry Elliott's airplane, you know, he was chief pilot for us a long time.

Capt. Wood:

And 49 was his pet.

Mrs. Whitaker:

And that was the one you rebuilt.

Mr. Berry:

And that was the reason I chose that fuselage to use.

Capt. Wood:

I think I have a picture of Henry with that airplane some-
place.

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