



Transcript for

AUTOMOTIVE DESIGN ORAL HISTORY PROJECT

INTERVIEW WITH JOHN MIDDLESTEAD, 1985

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The Automotive Design Oral History Project, Accession 91.1.1673, consists of over 120 interviews with designers and engineers conducted by David Crippen of The Henry Ford during the 1980s. For more information, please contact staff at the Benson Ford Research Center (research.center@thehenryford.org).

Staff of the Benson Ford Research Center
August 2021

**AUTOMOTIVE DESIGN
ORAL HISTORY PROJECT**

MIDDLESTEAD, JOHN

1985

**EDSEL B. FORD DESIGN HISTORY CENTER
HENRY FORD MUSEUM & GREENFIELD VILLAGE**

We are in Tucson, Arizona, and this is April 16, 1985. We are interviewing a longtime Ford automotive designer, John Middlestead. Mr. Middlestead lives in Tucson in the foothills. A serene and dry area of Arizona. We're asking him to tell us his design career history in his own narrative and at his own pace.

A I'm one of the few people in the automobile design area who was born in Detroit, Michigan. Most everybody was born elsewhere. At the age of nine, we moved to a town called Pleasant Ridge, which is on the North side of Detroit. At the age of five, the art teacher at school said that I had an extraordinary talent of coloring and drawing everything and that I should pursue art. That was the first indication that I had artistic talent.

Then as we progressed into high school, I got more and more into art and drafting. These two subjects are what I excelled in. Back then I didn't know it, but that was the keystone of going into automotive design, because both things -- art and drafting -- are very important.

In the 'Thirties, while I was in high school, I also had an influence from a man who was married to my cousin. He did the advertising for Ford and Packard Motor Company -- magazine ads and brochures.

Q Do you remember his name?

A Frank Williams. He had one floor of the Penobscot Building and about twelve artists.

Q His own agency?

A Right. I was invited down many times to the studio as a kid and went to parties with all these artists. Some of them went on to be

illustrators in New York after World War II because advertising of cars during the war was almost non-existent. But I was really influenced because I saw some top-notch work. The ads dated back to the time when Packed used "Ask the Man Who Owns One," as a slogan.

Q Did you work for Mr. Williams?

A No. Because I was in high school. After high school, I went to Cranbrook Academy of Art and took fine art and design until going in the Army in World War II.

Q Cranbrook is in Bloomfield Hills, Michigan.

A Yes.

Q What type of experiences did you have there at Cranbrook?

A At Cranbrook, I studied under a fellow named Marshall Fredericks who was a sculptor and designer.

Q A well-known sculptor.

A Yes. And his [mentor] was Carl Milles who did the famous fountain and display at Cranbrook. Milles was Swedish. The fountain is still in existence.

I had two instructors, Fredericks and a fellow named Wally Mitchell. I had the two instructors.

Q Did either of these gentlemen contribute to your appreciation of art and drawing?

A Oh, definitely.

Q Can you elaborate on that -- Mr. Fredericks, especially?

A He was a very good craftsman. He could sit down at a board and draw and design anything.

Q Had he gotten into sculpture at this point?

A He did some. But, as it went on -- this is a little side issue -- back in the early 'Fifties [Ford] commissioned Marshall Fredericks to do a Mercury head for [advertising purposes].

Q Can you tell us about that commission?

A The design department thought somebody from the outside could do this head very well.

Q Do you remember who was the spearhead of that particular episode?

A Bill Schmidt was in charge of Mercury at that time, but I don't know who instigated the request.

Q The reason I ask is because we have the original Mercury head at the [Henry Ford] Museum.

A Do you?

Q Yes. In fact, it's in the archives office.

A I believe it's the same one. He sent a bill for us, and we thought, "Good grief, we could have done this ourselves."

Q Do you remember how much it was?

A No. Back in those days, it could have been four hundred dollars or two thousand. Getting back to the days at Cranbrook, personally, I had more influence from the advertising business with my cousin's husband than I did with Cranbrook, because I did fine art there. My cousin always said, "Why bother with fine art because somewhere along the line, you have to make a living." He was right, because for fine art, you can go to any art school, and eighty percent of the students in any of these university art schools are fine art students. You say to the professor, "How are you going to get these guys jobs?" "I don't know." So I had always listened to the cousin who said, "Gosh, you've got to make a dollar here and there."

Q Was this Mr. Williams?

A Yes. Then I went into the service in 1943.

Q Tell us some of your experiences.

A I went into the Combat Engineers. From basic training in Camp Rucker, Alabama, we went to Tennessee on army maneuvers. From Tennessee to California desert maneuvers at Desert Center. On our way from Tennessee to the desert, we stopped at Tucson, and I was nineteen at the time. I remember getting off the train at the station and having doughnuts and coffee from the Red Cross. And Tucson was a very small city at that time. I had no idea I would retire there. Then we went to the desert, and from there I was chosen to go on a cadre, which was non-commissioned officers, to train a new group of engineers, and we went back to Alabama. From there to New York and then overseas to England. This was 1944.

So we saw combat in World War II during the Battle of the Bulge. We put up bridges under fire and [laid out] mine fields, bridges and roads. Not too great.

After three years in the Army, I came back and went to the only art school in Detroit that was not fine art, and that is not in existence any more. Today, it is The Center for Creative Studies, and it was then called Meinzinger.

Q Where was it located?

A On Woodward Avenue near [Grand] Boulevard. But it was the only school that had a course in design, advertising, lettering, and fashion design. It was pretty good at the time. During the time I was going to Meinzinger, I remember my mother doing some church work and calling on a

young lady who was in Ford Hospital with TB. She told me, "I've talked to this young lady, and she says her husband is an artist, also." I said, "Oh." And she said, "She said he is designing cars for Packard Motor Car Company, and you two guys ought to get together." So I went down to see the gal in Ford Hospital. She was kind of a live-in [patient] there. He had worked for Ford in '47/'48 by the name of Bob Jones. He had left Ford at that time to work for Packard. In those days, Packard paid a designer a hundred dollars more a month than Ford. He said, "Why don't you take a look at my portfolio." So I did. And I've always been interested in cars. Back in the early 'Thirties, when I used to look at these ads that the cousin did for Ford with the big fenders, I think all of us that ended up in design used to put a piece of tracing paper over cars and redesign them -- do away with the running board and fenders.

You say, "What was my interest in cars?" I think we used to draw too many cars during classwork in high school. But I looked at this portfolio, and it was down my line, and I said, "My gosh!" Back in those days, you weren't conscious of how to get into the car business as much as you are now with all of the publicity and the schools dedicating themselves to that.

I worked about six months at night on my car portfolio while attending art school. I had two years at Meinzinger and then was interviewed at Ford Motor Company in '49 and was hired. I reported for work December 19, 1949. I was interviewed at the time when Oswald and Snyder left Ford Motor Company.

Q John Oswald and George Snyder who had come over from General Motors?

A Yes. First there was Gregorie, and then Oswald, and Snyder. When they left, and I don't know how long they were at Ford. They were "in disfavor" of some sort.

Q Who was running the Design Center at that time?

A They called on an engineer by the name of Charlie Waterhouse who became design manager. Bill Schmidt was supervisor of Lincoln-Mercury; Bob McGuire, Ford; and Gil Spear was advanced. That's how it was broken down.

Q Where was Gene Bordinat at this time?

A Gene Bordinat was assistant manager under Waterhouse. When I went in '49, I interviewed with Bill Schmidt. When I reported for work, Gene was the first one I saw. He was twenty-seven at that time. A really good-looking guy. He assigned me to the advanced studio under Gil Spear.

Q What sort of questions did they ask you -- Schmidt and Bordinat -- when you interviewed with them?

A I was interviewed by Bill Schmidt. I was not interviewed by Bordinat -- he just met me the first day and assigned me. Mainly your portfolio speaks for itself. If you had a good portfolio, and you could draw cars well, you can do that type of thing.

Q Do you remember anything that Schmidt said to you during that interview that sticks in your mind?

A No, I wish I did. Bill was a personable guy, and he said, "I like what you've got here." Nothing that sticks in my mind that much, except he seemed to be enamored. When you were hired, at that time, they assigned you to the advanced studio under Gil Spear. In the advanced studio, back in those days, you could almost design anything you wanted.

Q How did that work?

A At the time, they were talking about no-wheel cars, air suspension vehicles, and rocket design shapes. They were illustrated with 21st century backgrounds.

Q It was a time of experimentation?

A Yes. And, back when I was a kid, we were all oriented to Buck Rogers and Flash Gordon. The finest artist around at that time did the Flash Gordon cartoon. His name was Alex Raymond. We all admired his artwork. Surprising how certain artists affect you.

Q While in the advanced studio, I was assigned to just do a car.

Q Gil Spear was the head of the advanced studio?

A Yes. And I remember designing this car -- my first attempt, and everybody was enamored with it. It had two tubes on the back similar to what ended up as the X-100 now on display at the Henry Ford Museum. The rendering, itself, ended up in Charlie Waterhouse's office. So, in 1950, I was interviewed again by Bill Schmidt. He said, "I'd like you in my studio." I only had two months in advanced, and I'm now working for Bill Schmidt and Dave Ash in the Lincoln-Mercury studio.

Q Schmidt had which studio?

A Lincoln-Mercury interior and exterior.

Q David Ash was his second-in-command?

A Nope. It didn't work that way. Bill Schmidt was section supervisor. Ash was the supervisor of the instrument panel studio which included accessories. In that studio, we had -- we used to do that in the old days -- hard and soft trim, which means an instrument panel studio where you did nothing but instrument panels and accessories. Then you had another studio that did soft trim -- seats -- only.

Q When you say the hard trim, what do you mean?

A The hard trim is usually instrument panels. The soft trim was the doors, fabric and seats. There was also a separate exterior studio. Exterior sheet metal shapes were styled in clay. At that time they painted the finished clay models. We had not developed Di-Noc.

Q Can you tell us what that is?

A Di-Noc. That's the plastic film that goes over a clay surface.

Q Which is in general use today?

A Yes.

Q You did not have that at that time?

A No. So anytime you did a clay car, the paint shop came in and painted it. Sometimes when you had a change of temperature, it would start to crack. Those were the old days. We also had template makers back in those days. Template makers would be people that came in and took dimensions off the car in profile and then put them on paper. It was done with cardboard and took a lot of time. We now have the scanner in combination with computers.

Q But, in those days, it was hand cut templates? So that would be cardboard?

A They'd cut templates at so many inches along the car. We had quite a template crew. The template would be the cardboard that would show you the shape of the car at various sections.

Q It would have to be fairly malleable to take the curves?

A They would cut it to fit the curves.

Q For our own perception, we need to know exactly how those templates worked. Can you elaborate on that in aural/visual terms?

A With the modern thing -- the scanner. You have a little needle that goes right down the surface of the car all way down from top to bottom, and it records the ins and outs of this on a computer. Back in the old days, the fellows would use the template, and they'd have to cut cardboard and section that car. Then they'd take the cardboard and put it on a drafting table, and they would trace the contour.

Q Then what would they do with it?

A They'd do it every so many inches all the way through the car. That's the only way you could get a drawing.

Q How would you make the...?

A The template would be to put a piece of cardboard sideways and then cut the cardboard to fit the contour of the car.

Q I want our listeners to be sure that they know exactly what a template did in aural terms.

A A guy would hold up a rectangular piece of cardboard at right angles to the car and start cutting away the surface of the cardboard at the point at which it fit the clay, and you'd keep cutting the cardboard more and more until it fit snugly against the clay and followed the contour on the leading edge of the cardboard template. They would be very good cutters with scissors. They'd do it in four inch sections like that all the way down the car. And you come to a fender, and the same things apply. You have a side template, and you have a top template, and then you marry the two.

Q But, when you get to the crown, where were you going?

A The way we'd do this thing -- you've got to remember that you're not using cardboard flat against a car; you're using it at right angles.

Q For a visual affect?

A That's right. Suppose I wanted a template, I'd push this thing back here, and start cutting away that surface until this point hit the top of the seam, and that one the bottom, so I'd get that curve. It's hard to explain. But these are things that we did.

I was in the instrument panel section, and we did instrument panels and accessories for Lincoln-Mercury. In those days, we did accessory exterior sun visors, spotlights, rear view mirrors, and special wheel covers.

Q How did you do them?

A We rendered them from the mind onto the paper.

Q And that means a final drawing, not a sketch?

A There's a sketch on tracing paper, and then the rendering goes from there. Back in those days, we did it on black paper or colored paper with airbrush.

Q With colored pencils?

A Both. Sometimes we did a lot of things with Prisma Color, which was a colored pencil.

Q That was the manufacturer's name?

A Yes.

Q It wasn't a generic type?

A No.

Q It was simply a colored crayon pencil?

A Oh, yes. But we also used a lot of airbrush in those days, and we did full-size renderings.

Q Was airbrush fairly new?

A No. In the early 'Fifties, that was what everybody used. You were issued an airbrush and Prisma Colors.

Q A pastel or watercolor?

A Yes. We did, back in those days, full-size cars in airbrush with watercolor paints.

Q When you say airbrush, do you mean the paint was forced by some mode of action through a brush?

A An airbrush is like a pencil, except you have about thirty pounds of air going through it, and a paint cup that's attached to it, and you....

Q So the air and the paint is forced through the brush?

A Right.

Q You control the paint flow?

A That's right, yes. So, back in those days, we did full-size, airbrush drawings of cars, instrument panels, steering wheels. Most everything was airbrushed.

Q All of this had to be carefully rendered, visually, before it could be done?

A Yes. Then we had shows to management, just like they do today.

Q Once you've gotten the final renderings, then you'd have to present it as parts of a vehicle to the styling committee?

A Yes, that's right. Like today is steering wheel day. Then they'd have instrument panel day, and lettering day, and....

Q Would the styling committee consist of both body engineers and stylists?

A Back in those days, yes.

Q I feel that this is important and that we detail exactly what you're talking about.

A I guess what bothers all of us is that while it's so natural for us to talk about this, the average person doesn't know it.

Q But it's helpful to our listeners. Let's start with the movement that you made from Gil Spear's advance studio to Bill Schmidt's and Dave Ash's studios. You were about to say just what Dave Ash did.

A He had instruments panels, and we had a fellow named Don Byrus. He went to Chrysler, and I don't know whether he's still there. He had soft trim. And a fellow named Bob Weiland had the exterior of the Mercury. And a fellow named Don DeLaRossa had the Lincoln exterior. We all worked for Bill Schmidt. Then on the Ford side, there was Bob McGuire, and Art Querfeld, soft trim, and John Najjar had the hard trim. John was the counterpart to Dave Ash at that time. Of course, we moved around so much then.

Q Early 'Fifties?

A Yes. And one of the interesting things I did, at that time, was that Gene Bordinat came back and said we had to.... This is '51, and the Korean War was going. They sent myself and a fellow named Bill Mason, (who left Ford Motor Company and went to Chicago a couple of years after that), but the two of us went to the Tank Arsenal in Detroit and represented Ford Motor Company in design of some specialized tank equipment. The project was about a month, and it was high security stuff. The tank people had some ideas, but they wanted them to be put on paper.

Typical of what they wanted, my project was to render a control tank with satellite tanks, unmanned, that would be radio-controlled to go

over any terrain. So we had to illustrate these things. Another fellow had a piggyback tank that had an extra engine, so that if one engine went, they could put another in without too much trouble.

Q This was sort of the advanced studio of the tank arsenal?

A That's right. But we were under high security. That was an interesting thing. We did a good job for Ford on that one.

Q Did Ford have any tank contracts that you were working on?

A No, not that I know of. What I do know is that two of us went from Ford, two from Chrysler, and two from General Motors, so there were six designers there. That much I do know. But who got the contracts, I don't know, but Chrysler had a few.

Q They were the big tank producers?

A Right.

Q So, as far as you know, your designs got into final production?

A Only as the modifications of their latest tank.

After one month at the Tank Arsenal, I went back to my regular duties doing Lincoln and Mercury instrument panels and steering wheels. All the studios, at various times, had extra work to do. Sometimes, as a sideline if we weren't too busy, we'd pitch in and do some exterior design. Every studio did various things. The soft trim, under Don Byrus, had a man named Art Miller and Reg Bennett and Vern Bretmeyer. These were the older artists/illustrators in the design area. They had a lot of experience behind them, but not too much car experience. They did the soft trim. In those days, they did it all with airbrush, and usually every rendering of a soft trim seat design -- either standard or deluxe. I'm just going around the studio and telling you what was interesting

that they did. The soft trim people can get pretty bogged down just doing soft trim, because you just do seat, after seat, after seat. And you did the whole interior -- two doors/four doors -- and you look into the rendering, and you see the back seat, and the front seat, and a little bit of the instrument panel -- not much. But those fellows would make their job more interesting by putting these fancy backgrounds in through the windows. I remember Vern Bretmeyer did one of the Taj Mahal. I think they spent more time on the rendering of what you saw through the window than they did the foreground.

Q Which was?

A You saw the seats, and if you were lucky enough, you saw the design of the seat trim, but, mainly, through the windows, we'd have all this going on. Everyone would try to outdo themselves putting various types of things back there. I remember Bob McGuire did a famous one of a beach scene with some gal running towards the water without much on. They were presented to management at that time. We had a lot of fun in those days, because we could put things in and make quite a thing out of a rendering. It sometimes would take a week to do one rendering of a proposal.

At that time, George Walker was a consultant with two men -- Elwood Engel and Joe Oros. They did not belong to Ford Motor Company, but they had access to us and gave their opinions. Sometimes George would have his crew at his office do some competitive things.

Q What was the big push in the 'Fifties? What were you working on?

A Innovative type things. The Victoria with the roof panel that went back was new. We used to be on a three-year cycle at that time -- the '52, '53 and '54 Ford and Mercury. You had the first year, and then we'd

work diligently on getting the minor changes every year. We'd work a whole year on just getting moldings, and grilles, and ornamentation.

Q At this point, you're still in the Lincoln-Mercury studio?

A Yes. And we were working on instrument panels. Once in a while you'd do extra work in the other studios.

Q Can you give us a thumbnail sketch of a typical day in the Lincoln-Mercury studio under Bill Schmidt, and your relationship with him, and your relationship with the other members of the staff.

A Back in those days, we were all young. We did not have the government situation.

Q Regulation free?

A That's right. There was a lot of fun and camaraderie. I think there was only two hundred and fifty in the whole design area at that time. That includes the shops and [support areas]. Everybody knew everybody. When we had a Christmas party, we could do it in one big room -- the whole group. Bill Schmidt was picked to be on TV. It was the Ed Sullivan show. Schmidt was supposed to be on TV one Sunday night, and we got a communication on this thing, and we were to watch Bill give his pitch on the Mercury.

Q The new Mercury?

A Yes.

Q What year was that?

A '52. So, anyway, Ed Sullivan introduced Bill Schmidt, and it was in the days of live TV. Bill Schmidt froze. Couldn't speak.

Q Did he ever get the message out?

A I don't think he did. Even though it was black and white, you could see him almost getting whiter by the minute.

From that studio, in 1953 I went to -- I've got to back up here, because it has to do with the designing of the Atmos.

Q I suspect that both the advanced studio and the Lincoln-Mercury studio had a lot to do with those early dream cars?

A Yes. Now, the dream cars -- and I'm not going to take any credit away from Joe Oros, but I think he did one of the first dream cars called the X-100.

Q Which is still in the Henry Ford Museum's collection. But the only thing that I contributed on that was that first piece of artwork or design that I did that was in Charlie Waterhouse's office, because it had that kind of rear end.

Q These were advanced concept cars?

A Right. Then in 1953, I was in the Ford exterior studio, again under Dave Ash/Bob McGuire. We were bouncing around quite a bit. In 1953 we went into the new design building.

Q The new styling and engineering center?

A Yes. It was brand new in '53.

Q On Oakwood Boulevard in Dearborn?

A Yes. Bob McGuire headed up Ford studio. He said, "If you take five men that are designing, and you lose one guy per month and let him work on a special project of whatever he wants to do -- just like this guy is gone away -- see what he comes up with." So, at that time, I did some sketching, and some drawing, and a full-size rendering of what was going to be the 1953 Atmos dream car. I had a side view in full-size rendering, which is in airbrush.

Q In other words, you were asked to a special advanced concept vehicle?

A Yes. Just let yourself go.

Q Let your imaginatopm run wild?

A Yes. And I think more things are developed during those times than any other time. So I thought about flying saucers at that time, so I developed a car that had a canopy -- a glass top -- and quite a modern thing with automatic road sensors and a thing called wrist twist steering, which does away with the steering wheel. And fins -- we had quite a thing in '53 with these high fins. So it went to the Chicago Auto Show. It was the next thing to the X-100. Being that I was in Ford studio and did the Atmos. A little later that year Bill Schmidt did a double canopy car for the show, also. It later became the Batmobile.

Q He was still at the Lincoln-Mercury studio?

A Right. The innovation that we used on the Atmos was the wrist twist steering. Later in my career -- ten years later -- engineering had worked out a wrist twist steering on a Thunderbird, and I had a chance to drive that. It had a variable ratio, and they had one on a regular vehicle that we could drive around. It proved to be too novel a thing. People just couldn't get used to that type of thing, but it was the way we were thinking back in the early 'Fifties.

Q Can you describe the wrist twist driving device?

A Yes. It was like two pistol grips with a variable ratio that you held. I had no trouble with it, but, in the long run, the steering wheel is the thing, but who knows?

Q Did you make a full, driveable prototype of the Atmos?

A No. That was only in fiberglass. It was one of the first fiberglass models that Creative Industries did.

Q Was it full-size?

A Yes.

Q This is called the FX [FX = Ford Experimental] Atmos.

A Yes.

Q But you did build a mockup of the grip steering?

A Oh, yes, absolutely. It was an original concept.

Q How did it work?

A If you wanted to go right, you'd go clockwise; left, counterclockwise with both of them.

Q This is the right wheel and left wheel?

A Yes, right. They were both the same.

Q It was a stationary mockup?

A Yes, that's right.

Q It didn't have wheels on it that would turn?

A No. We had nothing. That was in the early days when we didn't do too much mockup. It was just the concept.

Q What sort of reception did this get from your colleagues?

A It was quite far out for its time. It still is, probably, because it had a different seating arrangement. The driver sat in the center, and he had two passengers behind him, so the whole thing was Buck Rogerish.

Q How big was the Atmos mockup?

A It was full-size. It was as large as a Ford.

Q Can you describe the exterior? Did you have the full rein on that?

A Yes.

Q Do you remember some of the exterior innovations?

A On the exterior, we used some stainless steel for design. We had a light in the front that was a bar light. Instead of the headlights, it had a full-width, horizontal light bar between the two fenders. And we had automatic road sensors.

Q What are road sensors?

A If you had a highway that goes across the country, and if you had little stations all along that road that you could key your car into by radar, you'd just say, "Okay, I will plug my automatic sensor in," and then they would pick up impulses from the side of the road.

Q What they do?

A Then you could automatically put on things. So you wouldn't even have to steer. It would automatically take you there.

Q You'd have to have a complicated network of stations?

A Absolutely. The way we thought in those days was something else. But, who knows. The Levacar had no wheels, and they had a mockup of that. Andy Kucher [V.P. of Research at Ford] was the great guy on that. But, that didn't go anywhere.

Q What sort of reception did you get from your superiors? Did they like the Atmos?

A Oh, yes. It was generally liked.

Q Pictures were taken and releases were made?

A Yes, right. The following year Bill Boyer did a thing called the Mystere. That was for the next year's Chicago show.

Q Was the Atmos exhibited at the Chicago automobile show?

A Yes. Then it traveled around. In the early 'Fifties, Chicago was the biggie, and we used to all go there as designers and stay near the

stockyard Inn, and that's where the show was. It used to be a yearly thing.

Q Do you the remember the response you got from the Atmos from your friends and colleagues in the business?

A Some of them thought it was too far out.

Q It drew a lot of kidding?

A At times, yes, because of the glass canopy.

Q It was a single canopy?

A Yes.

Q A single passenger?

A A V in the top. It had an entrance problem. It would be like the gull wing top. The canopy would come up, and you'd get in, and the canopy would come down, which was quite a complicated thing, but who knows when your dreaming.

Q But you were proud of that?

A That's right. From that it led up to 1955 when George Walker....

Q What year was the Atmos?

A It was in the 1953 Chicago Auto Show.

Q What were you doing in the years between '53 and '55? You stayed with the Ford studio?

A At that time, there were two things: John Reinhart had the Ford studio exterior, and then he left to go to Continental to do some work on the Continental Mark II, and Don DeLaRossa went from Lincoln-Mercury to the Ford exterior studio -- a lateral move. I worked for Don for a short time.

Q How did you find him as a superior?

A Don was a nice guy.

Q Was he a good designer?

A Yes. I think he had natural ability. I don't think he had that much formal art training, but he designed well by the seat of his pants and did a fantastic job of full-size renderings. During the early '50's, we used to work on front ends, and back ends, and the tail lamps -- you can't imagine how much work was done on just getting a grille approved back in those days.

Q Can you describe that?

A You were in a three-year cycle. You had carryover sheet metal, which means carryover roof, doors, fenders, and deck. Everything was carried over, but you usually did a side-view change of chrome moldings that were different, and a headlight grille concept that was new, and you did taillights and ornamentation between the taillights. These are things you worked on for the two years after the original car was out. Like the '52, then you worked on a new grille and taillights, and you changed them.

Q Was it usual in those days that it was a three-year run for the car with only minor facelifts?

A Yes. That was usually the deal on autos. If you think back, that's about where we were. But the work involved was extensive. We'd have shows every week on different grilles and show them over, and over, and over again.

Q Until a final approval was given?

A Yes, right. You could work all year for a Ford front end. Once we worked and did something like ninety-seven different grille proposals.

Modelers did them in clay. From the sketching to the clay. I can recall that we did an analysis of how many grilles got to a '54 Ford -- how many grilles did we do? And it was just scads and scads.

Q How many would you say?

A Ninety-seven. From clay to foil.

Q From initial sketch, to rendering, to clay, to foil, which meant the final mockup?

A Right.

Q That would be in what time period?

A In a year. But every week we'd show at least three or four grilles.

Q This seems awfully painstaking. What was the need for that? Can you look back and say, "Why did we do so many?"

A Why did we do so many? That's what you always do, because of the fact that, nowadays, economics says it's ridiculous to do that many. I don't know whether it was to keep five guys busy, or indecision, or change of management topside or just what. I can't tell you. But even for the side trim, we'd do so many of them and go through the thing. We'd show, maybe, twenty-five or thirty side moldings on a car.

Q Who would you show these to?

A Our product planning [group]. I've forgotten when Lee Iacocca came into the thing. Chase Morsey was in the thing before Lee.

Q Wouldn't they be getting tired of seeing these minutely detailed changes?

A I would think so.

Q It seems incredible to an outsider that they want so many minute changes?

A That's right. And we worked overtime doing these things, sometimes all night. Sometimes the modelers would model these grilles all night. There's a modeler from the trade school who came over to the Design Center called Benny Barbera. Benny worked in the Ford studio at that time and would work all night just getting the grille ready for management. At that time, I was a senior designer.

In '54, I went into the interior studio as an assistant section supervisor under Art Querfeld. Art and I had all the Ford and trucks -- instruments panels and soft trim, both. We had a large department. We had about twenty designers; ten on each side. We used to do, at that time, a total of sometimes five instrument panels going at once for the Ford or Mercury. You never settled on one; you'd show them five.

Q Every Friday, was that show and tell day?

A Show and tell. You'd show some item, whether it's a steering wheel or an instrument panel. In those days, in 1953, Ford became very safety-oriented. They started the first -- I give them credit. They had a safety engineering group that used to come and tell us about safety steering wheels. Previous to that, we've had all kinds of designs with sharp centers, and the knobs would be sharp. We, as designers, didn't exactly like what was going on, safety-wise, because it meant we had to do unexciting, flat, dull things. By the same token, I think it was a wise thing. But in '53 and '54, we got into the safety aspect of the instrument panels. In '53 and '54, we started putting crash pads on the instrument panel as an option.

Q You're talking about production cars or in the studios?

A They ended up in production -- the 1956. But we were working two years in advance.

Q Where did this impetus come from? A top-level decision, as early as 1953, to begin to make the car...?

A Safer, you bet. I don't think the public really knows how we got into that. Ford was a pioneer.

Q Can you pinpoint anybody who was the chief exponent of making cars safer at Ford in '53/'54?

A I'm trying to think of this engineer that.... But, anyway, at that time, it was tested and suddenly needed a two inch pad on the instrument panel because some of them were shaping them as sharp.

Q Dashboard or dash panel?

A Dashboard is where your feet go, and it is the panel that separates the engine to the driver's compartment. The dash is the old-time dash where it came up and was from the floorboard up, and then you put instruments on it. We don't like to talk about dash. I think that's a wrong term. How's your dash panel? It's really not the dash panel, because that's behind the instrument panel.

Q The dashboard is actually behind the instrument panel, and you don't see it?

A Right. This has always been a misconception. When you write anything on this thing, you've got to say instrument panel. The general guy says, "How's your dash panel." Well, that's wrong.

Q What is the area above the instrument panel that is padded?

A That's still the instrument panel. That is all instrument panel. We had to do two models in clay; one with a pad and one without.

Q What was the object of that?

A Because at that time all the interior safety things, as well as

seatbelts, came to a head in '56. They were not standard equipment. We offered a safety package as an option.

Q The whole mindset about safety options existed from '53 to '56, and you went about designing them for the instrument panel?

A I think Ford was a pioneer in having a safety program. We knew we had to do something about the sharp knobs and the instrument panel because of the records of deaths and how they happen.

Q One company -- Kaiser-Fraser -- in the early 'Fifties had developed pop-out windshields, padded dashes, padded instrument panels, and, perhaps, other padded protuberances in the cockpit.

A I think they were standard. I don't think you could buy it as an option. As I remember, Kaiser and the padding on it were standard.

Q Did the Kaiser-Fraser package include seatbelts?

A I don't recall who was first with seatbelts. However, I know from a design standpoint, designing a crash pad was new to all of us as designers, because you'd have to make the standard instrument panel without the pad attractive and also add two and a quarter inches to the pad and still make that attractive option. Now, if you would put on seatbelts, and you go forward -- as you go forward into a crash, your head would hit the panel, and that's where you would have the two and a quarter at the impact point. They had some studies on this. And, also, we got into a safety steering wheel program at that time.

Q When you hit the panel, you're talking about the passenger?

A That's the passenger. Then, at the same time, the driver would hit the steering wheel.

Q The upper part of the arc?

A Yes. And the lower part would get into his chest cavity.

Q Very lethal?

A Right. So, anyway, we got into designs that would withstand a crash into the chest and also with the passenger with the head.

Q In terms of the steering wheel and steering column, what innovations did you come up with to lessen the dangers?

A We would distribute the blow a bit by maybe a three-spoke wheel as opposed to a two.

Q Which would have been standard?

A Two had been the standard, because if you can visualize a horizontal spoke situation -- two spokes -- would leave the top free and the bottom free, and if you crashed against that, the bottom would give way, and you'd be right into the steering column. With three spokes, it distributed all the force equally as you'd hit it. And, of course, the three spokes would be a Y formation, and you'd hit that.

Q Was there also an attempt to change the angle of the steering wheel?

A The depth of the column.

Q Tell us about that?

A Obviously, if you hit the steering wheel and it is as equally distributed as far as the blow is concerned, then you go in somewhat, but not touch the column.

Q A deep dish effect?

A That's right. As we went on to the Edsel, we put the transmission in the column. It was also a safety wheel, but it had a [push-button] transmission located in the hub.

Q The top of the steering column was recessed?

A Yes.

Q Was there some thought in those days that there was a vacuum effect with the deep dish steering wheel that when the chest cavity hit the wheel full force that there would be less of an impact because of the angle of the steering structure?

A The depth of it, yes.

Q Did that work out in practice?

A It sure did. And also safety sun visors came in.

Q You had those?

A Yes.*

Q You had the very dangerous rear view mirror? Did you make that padded as well as a breakaway?

A Not that I know of.

Q There was no attempt, at that time, to lessen that impact?

A No. But, back in '56 and '57, these were options, and we had to work around the safety options.

Q There was a problem, then, when you were making the instrument panel with or without padding?

A Yes.

Q So that made it a less attractive...?

A Sometimes it enhanced it, and sometimes it didn't, because the one that didn't have the padding would be quite flat.

Q Were you fascinated by this new trend, this pioneer innovation by the company, in terms of putting it together as a package?

*Editor's Note: The Kaiser-Fraser models also had padded sun visors.

A Sometimes the safety people -- and that was in the infancy -- they had a safety department, and these fellows would come around and tell us all the no-no's that we couldn't do. And we got kind of annoyed. Now after having free rein on all of this....

Q This is your first taste of regulation?

A That's right. So that happened in '56. The 'Fifties were years where we got into aircraft type design -- fins.

Q That became a design cliché at the time?

A That's right. Back in 1953, we had some cross sections -- a side view of where the head crash would appear. However, it was like the same type of thing that was in 1970 when the government said something about bumper standards. Up until that time, we were using a quarter of an inch or anything that General Motors had as far as clearances from grille to bumper. It took us a long time to develop a good-looking bumper using all the standards. Back in 1953 and '54, when the safety department was made up of about three or four people, they would come and look at our designs and tell us that the knobs were too sharp, and the wheel didn't have enough dish to it, and the padding wasn't quite right, we used to balk at that time and think, "Goddarn it, I wish they'd get out of our hair." Because up until that time, we had free rein, and we did not, seriously, give a lot of thought to these features. We never thought people would die, frankly, when you just got in your car and drove for fun. And all these things came about. So, we're going into '54 and '55, I predict Ford interiors will be -- the only one was the Crown Victoria, and that was a fine interior. We did that in '53 for the '55. I worked on both the exterior and interior of that -- doing that sweeping molding

that took place on the side of the '55 Ford. I remember that we all worked on hundreds and hundreds of moldings. I remember that wild one on the side of the car was picked from a sketch by a fellow named Ken Nelson. We were all striving to do anything that would be approved. Week after week of not having a molding approved, he did this wild thing. I remember that Dave Ash told me to put that on the model form on the clay. So on a Saturday morning I remember doing that molding that was on the Crown Victoria Ford.

Q Can you describe how that molding went?

A It went from the top of the fender in front, and it went right across the fender surface onto the side of the car, which was quite a bend for metal to do. We had to make it in about three pieces. So I remember doing that. Then, I was moved to the interior, and I was promoted to assistant section supervisor. Art Querfeld and I did the interior of the Crown Victoria. We tried to do an interior molding that did a bit of that. It went around the rear seat and came down into a V with a little emblem between the seats in the rear. That car had a lot of innovations, such as a plastic speedometer that you could see through.

Q Do you know whose innovation that was?

A No, I don't. Because we were all working on it: Najjar, Al Mueller and myself. We all did that. In fact, the Atmos in '53 had a plastic speedometer -- see through.

Q When you say plastic, is this a globe of liquid, backlighted?

A No. It had two pieces of glass with a needle between it. It was lit from beneath. We had just got into lighting the plastic like that.

One of the innovations of 1949 Ford was black light in the instrument panel. And that had kind of a phosphorescent glow to it. It had a green glow. That was the first use of that. As I remember, they got into a safety thing -- that phosphorescent paint or some of the ingredients in the thing were unsafe, so that didn't last.

Q Which models did you have the phosphorescent black light on?

A 1949.

Q They dropped it after that?

A I think it was on the '49 and '50 Ford. We also did accessory exterior sun visors.

Q Exterior?

A Yes. We don't have them anymore, but I've seen some real old cars that still have those things, and it was on the exterior. It was a regular visor over the windshield.

Q Part of the metal roof?

A Not part of the roof, it was added on.

Q If it was metal, it wouldn't be much good, would it? It would have to come all the way down?

A It came down just far enough so that it wouldn't obstruct your view.

Q That didn't last very long?

A No, it didn't last very long at all. It went out with the spotlight.

1955 is when we did the '57 Ford. I worked on the exterior design.

Q Was this to be an all-new Ford?

A Yes, all-new Ford. That's the first where they put fins on the car. It was leading into the day of the fin and decorative air scoops.

Now the thing is that, at that time, all of us were delving into aircraft magazines to look for fast looking shapes -- air scoops, body side mouldings, etc.

Q Is this an air scoop?

A Yes.

Q Did it have a use other than decorative?

A Not at that time, it sure didn't. All of us worked on grilles, taillights, and new cars, again with airbrush.

Thinking back to 1953, I was in the Ford exterior studio at the time under Frank Hershey, Bob McGuire and Dave Ash. In this studio of exterior work was Ken Spencer, Jack Mills, George Barbaz, Aldon ("Gib") Giberson and myself. We were doing the exterior of the Ford, but along with that, Joe Oros was a consultant and had a small studio that developed a clay that was going to be the Thunderbird, and Bill Boyer was in the studio at that time. We were mainly getting something together that would compete with General Motors and their sport car. We all got onto the program doing 3/8th renderings of this sporty Thunderbird and all doing our own rendition of that.

Q Joe Oros came up with the original concept?

A No, General Motors did. General Motors with their Corvette.

Q Yes, the impetus, but, did Oros come up with a concept?

A No, we all did. But, at the time, Joe worked on a full-size clay and some of these ideas were put on there, and he guided that clay.

Q So you went from rendering to clay?

A We didn't get it to do a full-size clay; we were just doing the 3/8th renderings, at the time, putting our two cents in on what the Thunderbird could be.

Q Who was doing the clay?

A Joe [Oros] and Bill Boyer in his small studio that was adjacent to where we were. But we did get into the ritual, all of us: Spencer, Mills, Barbaz, Giberson and myself into at least contributing sketches and renderings for what they were worth. It was a car based on this small Ford. It was a classic.

Q You had no idea you were working on a classic?

A No.

Q How did you feel about this?

A We all had fun. We were all excited about that. Anytime any designer can do a small sporty car, that is the thing we'd like to do. There is no question about that.

Q You mentioned earlier that G.M. had quite a success with the Corvette a couple of years earlier?

A Yes. We were called upon to do something in that ballpark.

Q Getting back to the creation of the Thunderbird, is there anyone you could say is really the father of the Thunderbird? I know that journalists and others always want to say, "Who designed the Thunderbird?" But you have given us an idea that no one person designed it; it was a team effort?

A It was a team effort, except that the final cues were put on by Joe Oros and Bill Boyer.

Q They made those decisions from the sketches supplied by you and your colleagues?

A Right. I think that's how it came about. I don't think one person can claim a car. It's an in thing. If you could have five models in the

courtyard, management will like the front end of that car, and the back end of another car and so on, and then you end up marrying them. And you always end up with a committee car, so to speak. Very rarely did we ever have a car. In fact, even the Atmos went from a diamond shaped -- originally, it was so wild -- wheel housing on the thing.

Q This is your original concept?

A Yes. Front and rear wheel, and then two side runners, and it was just so wild that we changed it to the four. So, anyway, somebody changes everything on you. That is my only recollection of the Thunderbird, except that we had to name this car. We had no name for it. I don't know whether this has been told to you before or not; how they got the name?

Q Go ahead.

A One of my colleagues, Aldon Giberson, had spent some time in the Southwest. We all had to write down about five names that we wanted to call this car. He had a coffee cup that had a picture of a Thunderbird on it.

Q Where had he gotten that?

A Out West.

Q Was that Arizona or New Mexico?

A I don't recall, but I think he was in Los Alamos, New Mexico, during the war. He had this Western coffee cup with the Thunderbird on it, and he wrote that down. I remember the fellow in charge of the studio that Bob McGuire worked for was Frank Hershey. Frank Hershey was the one that offered a suit to anybody that named the Thunderbird. And it's after seeing that coffee cup that that thing was thought about. So Gib

Giberson received a suit for that endeavor.*

Q Mr. Giberson was the one who suggested the winning name?

A Right.

Q It was an apt? It worked out just right?

A Just beautiful.

Q Something in Southwestern lore about the Thunderbird being a rather powerful, mythical figure?

A Right. Now that I'm out West, I know that. I don't recall too much more about that situation, because we were working on, obviously, other things, too. You don't just work on Thunderbirds or just this or that.

Q A somewhat fragmented, disoriented life? You're working on bits, and pieces, and parts?

A Yes, that's right. I remember, in those days, all of us, without exception, would work roughly four nights a week and Saturdays.

Q Did you get paid for this?

A Yes. But in the early days of design, we had a lot of design widows, especially if you didn't live in Dearborn. I've located myself in Dearborn at all times, and, therefore, I did have a chance to get home for dinner and then back to work. Sometimes we worked until one, two, three o'clock, depending on whether -- let's say, a Thursday night if you had a Friday show, you'd work almost all night. Regardless of your rank, you'd be there.

Later, in the mid-'Fifties, I worked in the interior studio on the Thunderbird, and I'm doing the Thunderbird. I'm talking about some of

*Editor's Note: See William Boyer's authoritative account of this episode.

the interior innovations that were interesting.

Q The Ford studio?

A Yes, the Ford interior studio.

Q Someone has made a decision to make it a four seater?

A That's right. It used to be the decision was probably wrongly done because the two seater is still the classic, but, at the time, word got down that there was a lot of complaints that you couldn't take your friends to the country club and just the two of you all the time. They said, "Let's make a sporty four passenger." Therefore, you could take your friends to the country club. I remember those days and those words, "Now get that thing a little larger." However, it didn't stop there; it got almost out of sync, and now it's coming back. If you worked as a designer in the studio that did Ford, the thrill was to do the interior of the Thunderbird, back in those days, because that was the one where you could let everything out. All the others, you had to toe the mark for cost and everything, but with the Thunderbird, you'd say, "Let's go."

It was during that time that we developed a pleated coved rear seat. That means that the fabric goes around the corner. So, the interesting part of that is that we had to design the trim and pleat the trim so that it would not pucker going around the corner. We found vertical pleats did the trick.

Q It hadn't been used before?

A That's right. Later in the 'Sixties, we had a speedometer that was unique. The speedometer of the '64 Thunderbird had a bar with the vertical pointer. Previous to this, General Motors had used a big drum back

of the thing, and the needle read on an angle all the time, because the drum was done in such a fashion that it was like a barber pole with a red line going right around it, and this drum turned, and, consequently, you looked through the opening, and the angled line would move up and down the speedometer scale or back and forth.

Q On a horizontal basis?

A Yes. But the line was on an angle. What we did was that I happened to come across this when you put a pencil in water, it changes the angle of the visual look. We thought if we put a half round tube in front of the drum, that would make this instead of being on an angle, it would make it vertical, and that happened. So that was an innovation to the drum-type speedometer.

So we were free, at that time, to do any type of new seating that we liked. Now, along with that, in the 'Sixties, of course, the crash pad had become a standard thing in cars, also the deep dish wheel, and padded sun visors were taken as a fact of life.

Q As were telescoping steering columns and collapsible steering wheels...?

A We did those, too.

Q In the early 'Sixties?

A Yes, or proposed. Also, that that was the era that we had a retractable convertible.

Q Retractable hardtop?

A Yes. The Thunderbird was the ultimate to work on. In 1965....

Q Was Thunderbird part of the Ford studio?

A Yes.

Q But you had a separate niche with the Thunderbird work; the elite of the studio?

A That's right.

Q Did you have trouble convincing everyone that these coved back seats would work?

A They did. They put them in the car, and it turned out beautiful. In 1964, I was sent from the interiors to head up what is called the Fairlane studio. I was in charge of the exterior of the Fairlane car that was just getting started. It was the first year of the mid-size Fairlane -- the design of it. Gale Halderman was my counterpart in Galaxie at that time, and we had also a Falcon studio. We were under, at that time, Bob McNamara.

Q He was to leave in November, 1960, but you were working in '60 on the '62?

A Yes, that's right. I tend to get mixed up in years, because it's always eighteen months to two/three years, and these dates just drive me up the wall.

Q What had been McNamara's contribution?

A Let's dwell on Bob McNamara. We went from a man -- Lewis Crusoe, who had a unique way of stopping in the Design Center -- ever since I was hired there -- and looking at what designers would do and making comments. By the way, Lewis Crusoe was the one that picked my rendering of the Atmos to have for the Chicago show. But he was all for innovation, and he had the philosophy that you had to spend money to make money, and he told all of us that. He used to drop by and see the designers on a one-to-one basis. A very fine guy.

Q Unusual?

A That's right. You got the exact opposite with Bob McNamara.

Q Who, at this point, in '59 is group vice-president and a powerful person?

A Yes. Consequently, when we had models out in the courtyard -- I know George Walker had a lot of trouble with Bob because he really didn't give two hoots for the aesthetics of the car, he just said, "What is this model? A? What does that cost? What does B cost? What does C cost?" And he would take the one that had the least cost. He was, I think, responsible for taking off more of the company product just to make a name for himself in the finance end of the thing. I think that he had to do something, because if you follow a good man, what are you going to do? You've got to better the thing. Okay, you're going to make more money for the company. That's when we got into the pinching of the pennies, almost to the point where we were frustrated as designers that we were held back so much. Plain Jane cars. So that was a frustration.

By the time the car gets to the showroom, that's old stuff to us, and, frankly, we can't even remember what we did. They say, "What is that? I don't like the molding on such and such a car." And you'll say, "Gosh, what molding are they talking about?" So the public is two years or three years behind us.

Q The Fairlane is a lineal descendant of the Comet?

A Yes, that's more or less it. There is nothing to say about that, it's just a car.

Q Another Plain Jane?

A Yes. We were not enamored with that. From there, it's kind of interesting. I jump around from exterior to interior, which had happened

in my career. But in 1965, I had charge of the pre-production interiors. That means that we were working on all the futuristic instrument panels, seats, trucks, the whole company interior-wise. I had charge of doing all the innovative type things, such as, for instance, air-conditioned seats.

Q What do you mean by air-conditioned seats?

A That means that we had a concept of taking the air conditioner through the center of the car and pushing it through a perforated seat. In other words, the vinyl cloth was perforated in such a way that the seat was cooled or heated. They're getting into a bit of that now. That was in 1965 -- twenty years ago.

Q What happened to it?

A I can't tell you, but we were hot for it. I had a patent on that type of thing.

Q Was this yours?

A Yes. I gave Gene Bordinat a pitch on it, and he said, "Have you got that thing patented?" I said, "Okay, we'll get a patent." Then we had such innovations as reversible vinyl and cloth seats. That means that they had an insert that you could reverse.

Q Different colors?

A Yes. We had a patent on that.

Q From a fabric to a leather or a different color?

A That's right.

Q Back to the air-conditioned seats, where was the unit placed?

A It would just be the normal air conditioning, and it would be coming through between the springs and the foam. You had to perforate the foam, and you pipe it in.

Q Did you get that to the mockup stage?

A Yes, we did such a thing.

Q It must have been the sensation of the industry?

A A vendor came along with something very similar to that. He had some kind of a cushion that had some kind of an air situation. I can't even recall, but it was a very thin little cushion that you put over the seat. I think he had a fan -- some kind of an electrical fan....

Q Under the seat?

A Yes, which circulated the air. Ours came from the air conditioning, and that one came from the add on fan. As I remember, you could buy the accessory in those days.

Q Your's was much more practical.

A Heating or cooling came through the perforated seats. We were always worried about -- the guy gets cool from the instrument panel, but he gets out of the car, and his shirt is wet in the back, so we tried to solve that. Sooner or later, we'll get a handle on that.

Q Bordinat asked you to patent it? He said, "This is a great idea?"

A Oh, yes.

Q And did he try to push it with the technical people?

A He used to visit the studio quite often, and he remarked about all these new things we were doing, but left it up to us to pursue.

Q But that never got out of the studio?

A Not by the time I left.

At that same time, we did a station wagon, and we thought, okay, what would you do with a station wagon to make it more unique or serviceable, so we devised of way of having a station wagon camper. We did

that project. That would have fold-down seats -- front seat and the back seat would fold down, and you would have sleeping for a mother and father and two children with a hammock arrangement in the back. You folded the back of the front seat, then the back of the back seat, so you have a bed. They meshed together.

Q Are these pleated vinyl covers?

A Yes. But we had it so they would lay flat. That was one of the projects. The most interesting of all was doing a gas turbine truck. We had to do the interior. We let out our thought processes, and that was fun because, back in those days, you'd get a think tank in the studio, and the designers would just think of what all we could put in that truck.

Q What were the innovations that you proposed?

A The innovations were with the driver and the co-driver. In it, we had to work out a toilet arrangement. We had a lounge chair for the co-driver. He could rest and go down into a bed or sitting up in the driver's control department, and we had a TV for the co-driver. The floor was innovative because it was the first vinyl-embedded plastic. It had some bright strips embedded in it for traction. Then we had a map of the United States on the rear wall of the cab and the directional lighting system that would show up on where you were on the road.

Q Early on board?

A Right. And then we had this lounge for the co-driver. I remember we couldn't somehow work in the shop to do that for the show, and we had to farm it out to a coach company that built hearses. They did a workable lounge for us.

Q At this point, you're just mocking this up in the studio?

A Yes, right. And a great big mockup. We had indirect lighting on the ceiling, and it was a coved ceiling. That means it goes down the corners.

Q Curved from the top down?

A Yes. So it was a unique thing.

Q What reaction did you get from this?

A We modeled it in clay, and cast it in fiberglass, and installed it in the actual vehicle.

Q Which was, I think, a one-off? There was a huge, driveable vehicle made?

A That's right.

Q Did all of your interior innovations get installed in this?

A Yes. And we got a lot of press coverage. Gene [Bordinat] was pretty proud of that.

Q The television worked?

A Yes, it was a small Sony. The other thing that we did was a sports car interior that was in '65. We had a TV thing where there would be a little map in front of you that would show the vehicle location. I think someday we're going to get to that. We had everything computerized like they do on the Continental right now back in '65.

Q You could chart your course on a map?

A That's right. We were even proposing that AAA would cooperate with us and make these automotive maps that could be projected on a screen.

Q What was the reaction to that?

A They still didn't know, technically, how to do some of the things that we did. We also had a little rear view mirror screen, and we

thought we could pipe the rear view onto a screen and do away with the unsightly rear view mirror. The other thing we were getting into was the molded door panels. Of course, that's a thing that's well taken, but, in the early days, we went to see such outfits as Holly Manufacturing Company -- they're outside of Chicago -- and they did American Tourister and Samsonite luggage. We tried to get them to come in and do some of the early molded doors. In fact, we finally did our own. We got into that.

Q Molded plastic?

A Molded doors, yes -- fiberglass.

Q Interiors or exteriors?

A Interior door panels. We showed an interest back in '58-'58.

Q Heretofore, you'd been using vinyl and fabrics?

A Yes. And chipboard, which is just a cardboard. You build up a cardboard panel, and then you'd screw that thing in the door, and that's it. Armrests were added.

Q And you put the material on top?

A Right. Most all your cars today are vinyl molded -- vinyl clad over a form. Back in those days, the concept of molded doors was just breaking through.

Q Who came up with this?

A I can't say that we did, entirely, because Holly came with samples of their molded doors. I'm sure they were not the only ones. They said, "We're doing luggage; can we help you with a door?" So we had them do a few samples. I think that led into all of this, because, past that point, we got into it ourselves -- Ford did.

Q You decided it was a good idea?

A Yes, right.

Q Tourister didn't mind if you...?

A No, we did it differently. We had such things as a keyless entry at that time.

Q How did it work?

A It was in fun. At that time, we used a credit card. We said, "Let's do away with keys." So we put a credit card in there.

Q Plastic card?

A Yes.

Q Which the impression of the card would...?

A Right, open the door.

Q Did that get to the mockup stage?

A No. Keys are still in now, along with a number system.

Q But, did you...?

A Oh, to mock it up, yes. Oh, yes, sure. Then we did a show car called the Aurora.

Q Tell us about that.

A It was a station wagon that had two seats in front, and a lounge in the back, and a TV, etc. That went to the New York World's Fair.

Q What were your lounge innovations in the back? What year was that?

A We had a cove seat in the back. That was done in 1965 and '66. When was the World's Fair?

Q 1964/'65. It's where they introduced the Mustang?

A Yes.

Q They brought the Aurora to the New York World's Fair?

A That's right.

Q A station wagon?

A It was a super station wagon. But mainly the two passengers in the front and this lounge affair in the back.

Q This is interesting because, at this time, Ford vans were quite spartan. They did not have those lush interiors. This is one of the earliest concepts of that?

A Right. It was tastefully done. We had the bar, and television, and all the things that you'd have at home. A little game table in a wagon so that mother and family could play cards and games.

Q That must have garnered quite a bit of attention?

A That's right. But since then, we've had a van that does that.

Q Strangely, station wagons have remained fairly...?

A Utilitarian.

Q So that went to the World's Fair, and you had the satisfaction of seeing the press' reaction to it?

A Right. In late '66, I went to exterior again, and I worked on one of the Mustangs. It must have been the '68 Mustang. I had a lot to do with that particular one, because it came from my studio.

Q In what way? What differences were there?

A It was a new one, we did the clay, and we had scoops on the side. It was a dramatic thing. Also, at that time, a Continental Mark III was done.

Q What were the details of this Mustang that stick in your mind?

A It had all the Mustang cues, except it had a scoop on the rear quarter, and we just made it a little larger. Why we kept getting

larger, I don't know, except we got the front end and overhangs to make it look faster, and we just got a longer looking car.

Q Somewhere in the company, there was a feeling that the Mustang was getting larger and larger?

A So was the Thunderbird.

Q Where did this impulse come from?

A I don't why we started to grow. That's a funny thing. If you'll remember the '58 Lincoln, it had to be longer and wider than any other car on the road. I don't why, at that time, we thought so much about being big. Bigger was better, and that somehow went into the 'Sixties.

Q Was it the racing scene at that time?

A I think that was another thing. But Cadillac was doing it, too. Everybody was doing it. The bigger, the better.

Q As designers, how did you feel about this?

A It took place so gradually. It just didn't happen overnight, that all of a sudden you're going to have that much car. You say, "Okay, we'll put two inches more on overhang. What would that do for us lookwise?" So we put these overhangs on. In fact, we got overhangs that were overhangs back in those days. And you say, "Why did you get those?" Because you wanted a longer, faster-looking vehicle. Longer, lower, wider. Then it got just out of hand on all car lines. I can't single one out.

Q It was infectious?

A Yes.

Q Looking back on it, does it seem ridiculous?

A It does.

Q There might have been some direction from the top. I understand Knudsen, at this point, and his young protege, Larry Shinoda, were pushing these monster Mustangs?

A Let's get into the Thunderbird and the Larry Shinoda one. We did a Montego, and Cougar, and we finally got into the Thunderbird, which came from the same platform. That's what happens, too, when you start sharing platforms. They did it effectively in General Motors, and Knudsen was a past master of marrying platforms to make new cars. Also he was very good on insisting that we carryover doors. Could we use a decklid from one car to another car and so on? This was the intent to save money, at the time, but still do new looking cars. We used decks and doors from various cars. I think that that was the era when we started really getting into mix and matching and sharing of things, because General Motors did it. Later, Gene Bordinat did some of the same things.

Q Of course, it was to save money?

A Yes. Do you remember the Thunderbird? It was even growing to the point where they made a four door. It got to be way out of touch. I got calls from California from my relatives, "What have you done to ruin that thing? Here I've got this nice little '58, and you've got this crazy, large car?" I said, "Well, it's not our fault." It just grew and grew. Everything was big. I never liked that, particularly.

Q It must have been very frustrating for you?

A Yes.

Q Aesthetically, it was ugly?

A Right. These are exterior days, and then in 1968, I was made a design executive of exterior mid-size cars for Lincoln-Mercury. That

included the Cougar and Montego car lines. The Cougar was a year or so old when I got it.

Q One of the better innovations of Ford in those days?

A Yes. Cougar came off the Mustang back in those days. It was about two inches longer. I had the Cougar studio and Montego studio. We were hot in 1968 on GT cars. I remember doing a lot of work on GT cars and 400 cu engines.

Q The GT stands for grand turismo?

A That's right.

Q What does that connote?

A A sport thing.

Q A fast, sporty car?

A Right. That meant doing a lot of blacking out of grilles and taillights.

Q Cutting down the bright work?

A Yes. Why, I don't know, but it looked different. You had to do something to make it look different.

Q It would set you apart from the regular line of vehicles?

A That's right. So we went through that era. At that time, I worked with Buzz Grisinger in '68.

Q What was his position then?

A He was director of Lincoln-Mercury exterior.

Q And you were the executive designer?

A Yes. Al Mueller and I were executive designers at that time. He had the Mercury and Lincoln, and I had the mid-size cars. That gives you the studio picture at that time. Back in those days, we could break up

our studio. I had a Cougar studio and a Montego studio. You could let the guys go, and we had all bridges going on new cars. If we were running a facelift, such as the taillights and ornamentation on a year, we were still seeing what the future had when we were doing the Montego and a new Cougar on some bridges. We had, maybe, six bridges at the time. A far cry from what they do now, because they've cut back on all of this. It was very, very common to have as many as six or eight models out of a new car in the Design Center. Possibly another studio that didn't have as much work would say, "Let us do a Cougar." So you had an intermingle of studios and ideas. We would, maybe, do a Mustang in competition, too. So there was interplay of all the different studios at that time, because they had the wealth of modelers and designers. I don't know what it was, but it seemed like there was a lot more freedom of choice at that time.

I don't know whether you've heard this story when Knudsen was on the scene....

Q This is Bunkie Knudsen?

A Yes. He used to make the comment -- and I'm sure Gene [Bordinat] would tell you that -- "Hello, Gene. I'll be over early in the morning to see what you're doing." That's about what it was. And, oh, Christ, he'd say, "Bunkie's coming in on the way to work." So we'd have to get all the models in the courtyard, and he'd come over at 7 o'clock. It's hard to tell the guys that there will be a show for him at 7 o'clock and that means that we all have to get there at 5 A.M. I remember many, many times of standing out on the courtyard with Bordinat, and DeLaRossa and the rest of the people waiting for Bunkie to show up. And it wasn't even

light! We'd have the lights on in the goddamned courtyard, and here would come Bunkie. Well, he'd go through, and he'd have his cohort -- this fellow he brought from General Motors -- Shinoda.

Q There was one other person he brought with him?

A Yes, Dave Wheeler. But these cronies were just a political mish-mash. It wasn't working. And then Lee [Iacocca] would call up. "Gene, I'd like to see all this stuff that Bunkie looked at at 4:30 on my way home." Oh, God, we had shows in the morning, shows at night for Lee.

Q Lee didn't want Bunkie to steal a march on him. He wanted to see what he saw, and he wanted to find out what he liked and what he didn't like?

A Yes. Those were terrible days. We got caught in the middle.

Q And you spent the rest of the time making changes?

A The designer has been caught in the middle all the way through. I know Bordinat said that, too. It seemed like you've got all these bosses. How many goddamned chiefs do we have that are vice-presidents? My, God, they're going through them like crazy, and you're always in this political football here. But I remember that. That was kind of unique.

I can't remember the name or the year of this particular Mustang that when Bunkie was in charge, that he okayed. I remember this: it was in the wintertime, four inches of snow on the ground. He insisted that time was running out for an approval. He had to pick a Mustang. It might have been the one I was working on. And we all moved the Mustangs out in the court-yard. Here it is winter. Colder than a bitch. It was snowing, and the Mustangs were Ninoced in white. He picked one for production.

In 1968, I became a design executive. The term design took hold at the Design Center around that time. It had to do, primarily, to get status with the Industrial Design Society of America -- IDSA. We heard at various times that they took a not-too-kindly view towards automotive designers, per se, because we all came from various areas, and they didn't give us full credit. Gene [Bordinat] was, more or less, responsible for getting that across to them and the terminology corrected that we are "designers," not just stylists -- hair stylists or costume stylists or whatever. It put more dignity to the occupation.

Q Was this Bordinat's innovation, or was it taking place in other areas?

A No, it was his. I don't question that.

Getting back to the Bunkie situation, he tried his best to bring in all the G.M. ways and means. It didn't fit into our line of thinking at all. We had the two camps in the Design Center which played havoc with all of us. Finally, we got word that....

Q In other words, it was Bunkie, and Shinoda, and Wheeler against everybody else?

A Yes. It was used that way.

Q So it became a political situation?

A Probably the greatest political thing of that time.

Q Adversarial?

A Yes. Consequently, when Knudsen was finally taken care of by Mr. Ford, we all had a -- I remember that day, because the word was out. Gene called all of us into the conference room and relayed it to us that Bunkie was fired and that Lee [Iacocca] would be taking over. The morale -- oh, we were relieved over the whole thing.

Q Was there a small cheer or a bit of hand clapping?

A You don't do that kind of thing, but we were all smiling and said, "Great, great. We don't have those morning shows, and we don't have to fight that two-way system." And, I'm sure, Bordinat was happy at that time to be away from this constant [turmoil]. Right after that, Mr. Shinoda was on his way out the door the same day.

Q Looking back on that odd disturbing, chaotic episode, did Shinoda and Knudsen come up with anything solid in design concepts that you felt were useful and lasting?

A They enlarged and minimized the Thunderbird look. It looked more like a passenger car.

Q They enlarged the dimensions but trivialized it?

A Yes, that's true. I can't think of anything that he did that saved the company anything whatsoever.

Q Did Shinoda have any design talent?

A He was a protege of Knudsen's. Shinoda was very interested in the race car business, and Bunkie used to go to the races. As I understand it, he used to see Shinoda at these races. Shinoda, at the time, was just a designer on the board, but they did have that rapport of meeting at the race track. Shinoda's interest at Ford was racing car design. Bunkie tried his best to get all his General Motors people over. In fact, there was a rumor that he tried to get Chuck Jordan to replace Gene at the time.

Q Can you enlarge on that?

A What we know is hearsay and rumor, but I think it happened because he wanted his own design chief. So, Gene was a little bit nervous at

that time. They did not get Chuck Jordan over there, but they said that they have a good guy by the name of Don Kopka. At that time, Don came over to Ford from Chrysler. Chuck Jordan knew Don Kopka. They were friends. I've forgotten exactly where Don came from, but they were friends, and Chuck says, "I'm not coming," because they gave him [at G.M.] the assistant vice-presidency or something. But Don did come over at that time [from Chrysler].

Q He lent a certain weight to that department?

A Right. But Don played it down the middle. He didn't go one way or the other.

Those 'Sixties were interesting years. That's the time when we went down to the basement where we had the -- has anybody told you about this airplane?

Q No, go ahead.

A It was the first time that we had a design group that did a mockup of a fuselage of a 727 airplane -- the whole interior of the thing. It was going to be Mr. Ford's personal plane. But, how do you do the interior design of a plane? They did this downstairs, and they had this big fuselage made in wood and cardboard and a whole interior made.

Q A walk-in, stand-up interior?

A Right. It had a bedroom facility, and a bar, and a lounge, and room for some more passengers. I've forgotten who was working on the project. He was a manager. I said to him, "What kind of bed are you putting in the thing?" He said, "We're going to put a queen mattress. Mr. Ford always likes a queen mattress." I wondered how are you going to get the right mattress? As the story says, that's a good question. "How

are we going to find out what -- does he sleep on a Simmons or a Serta or what?" So somebody called the house, and one of the maids found out what kind of mattress it was. So we got the mattress. That thing was actually done. As I understand it, it was a company plane, and Mr. Ford could sleep on it going overseas. I think it was stated in Lee's book that he didn't like the thing. It ended up being sold to the Shah of Iran.

Q This was a 747?

A I believe it was a 727.

Q Your input was?

A I didn't do a thing on it, I just went down and said, "What mattress are you going to use?" There are always little things about the thing: color schemes.

Q So you were responsible for securing the proper mattress for Henry Ford's airplane bed?

A I just asked the question.

One of the things that was done during that time was that we would spearhead a car program with the students of Art Center.

Q Where was that?

A In Los Angeles, California. They've moved to Pasadena since. I was to write up a program with the help of my manager, Fritz Mayhew, and we would present a program to Art Center to follow for their semester. We wrote down many things that the students could do. At the time, there was about ten students. They're probably doing the same thing right now, because they've got ten transportation students out there. However, we wrote up a program. We had charge that year, and General Motors the

following year, and then Chrysler. We alternated the car companies with the project that the art students would do. Keith Teter was there at the time. He used to work at Ford, and he quit Ford to go out there because of health reasons and was professor in charge of that.

Q There was an ex-G.M. man who is still there -- Strother MacMinn. Was he there then?

A I don't recall him. Chuck Jurgenson was there in '55, and he was from General Motors, and he got that transportation program started.

Getting to the program, it was to be a world car. It would cost a thousand dollars and have different tops to it and different uses. I remember going out there in '69. There were eight American students and two Japanese students. We gave the students the projects, and we went back another time to see what they did. When we went back, each student had to give a presentation of what they were doing and what they had designed for the world car. I remember the American students would give a fairly decent presentation of what they were doing, but I was amazed at the Japanese who had figured out over and above what we gave them to do the correct engine for the car, the drive line, and how they would do it from the ground up -- almost to the tire size -- everything! I was amazed at the Japanese about how thorough they were at that time. That was '69. I'm sure that they learned a lot from California and took it back to Japan, and I'm sure that Japan only sent only the cream of the crop. Even then, they were more thorough than our American guys.

Q The concept of a world car is fascinating. Even though you had an active international division, you had not thought, at this point, about a car that would be adaptable to all parts of the Ford empire?

A No, it wasn't a world car, as you might think. In concept, it was that it had many functions. It wasn't the world car like the Escort.

Q It wasn't the interchangeability, it was the adaptability?

A Adaptability. Some of them had where you take off the rear of the car and make a truck out of it or a passenger car. You'd adapt situations to it. That was a sideline.

During the 'Seventies, when we had our initial oil crunch and we were standing in the line for our gasoline, we also had a crunch at the Ford Motor Company. I, at that time, was in charge of color and trim for the Ford Motor Company. This is fabrics and paints. I also had an advanced interior studio at the same time. What happens in a crunch when the cars were not selling, you didn't have enough money to retool things. What happens in that is that I got into a situation where the plants were saying that we have a surplus of fabrics, and the car lines were shut down. We had trouble with the paint at that time, because all the metallic paints, when they are in the vats, the sedimentation of silver would settle to the bottom. Then the line would start up again. In those days, I don't think they had stirs, but sometimes they had a problem with lighter paints; they wouldn't match due to the silver separation.

At the same time, the plants can't sell cars, so we had fabric and trim styles all left over. I remember going through that program the first year of the downturn with a surplus of fabric. And you'd be surprised at how many fabrics we had to carry over. We had a surplus, so we had many surplus meetings on that type of thing. The new fabrics on order caused a problem at that time.

Q You had ordered this material in expectation of having a full line?

A To pick a fabric is a three year process. It's even longer than doing a new car. You pick the fabric from a New York fabric house. It has be restructured. If you like a fabric that you saw on a sofa, perhaps, and you want it for a car, this whole fabric system has to be restructured to meet automotive standards. That means that the fabric has to be woven in such a way to be strong enough to adhere to a faceless surface, such as we used to have sandpaper, and you'd have so many revolutions before the threads went, and we'd hold the sandpaper up to the fabric, and they'd do these tests. It had to pass certain engineering tests. That is a time-consuming thing, just to get the fabric woven to that specification and still look like the original fabric. And then we have a color process and we have the fabric into the approved five or seven colors of interiors. So that is a dye process. It is a full thirty-six months to get that through. So that's about the longest. If you say, "I like this fabric," the vendors come to you and say, "These fabrics have been lab tested," so you can get into that.

It was during the crunch when the designer Marks came out, mainly to stir up business being that you could not change the car itself, because they couldn't afford a new model. So you get into innovations of color, trim, and special paints. That's one way to sell cars. If you can't sell them through a new model, you change the color, and you change the trim.

Q In terms of vendors, if you had ordered this in advance, and then you decided you couldn't use it, what would you do? You said earlier the vendors would come to you saying, "I've got all this material?"

A Then we'd go through the trim program with them, and just say, "Tough. We can't pick anything new yet because we're still running on the old."

Q You would have used the old stuff that you had purchased and wouldn't throw it away?

A That's right. To live through one of these programs is quite something.

Q In other words, what you had ordered had to be used? You couldn't cancel that?

A That's right. So we used it here and there, wherever we could.

Q But you did have a problem with the silver settling to the bottom of the paint tank?

A Yes. That's at the time that they got into these automatic stirs.

Q That would agitate it -- recombine it?

A Yes. Strange that the metallic paint changes that way, but it does -- big vats.

Back to the color and trim area. When I first heard about this job that was in the offing, I dreaded this. My predecessor somehow had a falling out with Dave Ash and didn't see eye to eye. The first thing Dave says, "I got you over here to head up the color and trim area. You and I see eye to eye."

Q Was Ash the senior...?

A He was the director of interior. I said, "Dave, I've dealt with this color and trim, but I've never been in charge of it. It sounds like a bag of worms." He said, "I think you can handle it." I've always been one to love detail. So I went up there. In the two years I was there, I

found out that I thoroughly liked it because, more or less, you're your own boss. I had an advanced interior design area downstairs there in the basement which provided enough design interest. The color and trim end of it became like a business, and you ran it like a director of a company.

The trim part of the thing, we had to work three years in advance. Color, more or less, like two years, because of the fact that you had to pick the new colors and then put them into the fade farms for the sun to hit them to see if they have any fade problems.

Q Fade farms?

A Yes, a fade farm. It took place in Florida and California where they took color chips....

Q The sun was the brightest in those two areas?

A Yes. They put them out on a rack and then kept tabs of the fade characteristics of the colors. We would get a record of that. I've told you about the discs on the cloth and specs there. So we have paint specs and cloth specs.

Q How about fabrics?

A Yes, that all goes together. I think that coming from the exterior studio to the color and trim area, I could answer the guy that says, "How come you haven't got all these new way out colors?" I found out that production lines of certain color sequences, first you pick out the interior trim. Are you going to have five interior trims and what colors are they? Is it a warm blue or a cool blue? Then you have to figure out your color, whether your exterior color is going to be warm or cool. These are the fascinating things, because on a production line they

could, maybe, change one interior color per year, per car line. Consequently, you had to go with many, many carry-over colors the next year. You could change, maybe, one or two colors. Also, in the plants that had only one or two paint areas, you could only come up with five different colors, while in the Lincoln and Continental area, where they have many paint booths, you could come up with something like twelve, or thirteen, or fourteen different colors.

When I was in exterior, I never knew the reason why I was so limited in the colors of the Mustang and all the smaller cars. But it's due to the fact that they do not have that interior spread that the luxury cars have.

I also got into how we pick colors. Where do we go for the colors? We did a lot of research in garment magazines, we did a lot of research in -- they had people call from the baggage; what are the new luggage colors for the next year. Then we had research of what was liked in California and New York. We found out that -- this was all new to me when I went out there, but I found out fast-- the Westerners liked the pastel colors, and the Easterners like dark, drab colors: greys, blues are East colors. The West are whites and pastel blue, because, of course, of the reflection of the heat they have. Also, California is like that; it's upbeat.

When I was up there there was somebody that wrote an article about even the sweat from the palm of your hand. It was analyzed through a microscope, and they determined that certain kinds of sweat makes you like certain colors more than others, which I never knew. This was a new end of this thing. I had never been in charge of that, but I thoroughly enjoyed it.

Along with that we did family cars. That means Mr. Ford [II], Bill Ford, and Benson Ford, and all down the line in relatives. So we had a fellow in charge of that end of the thing by the name of John Reinhart, who early in his career was chief of Packard design.

Q And also involved with the Mark II?

A Yes, he was very much involved with that along with with Bob Thomas and a few other people. John helped out with the family car, keeping books and records, and seeing that they were done on time and got to the people.

Q This was a situation that you might not have encountered at General Motors? At General Motors you'd have executive cars?

A That's right. Due to the fact that Ford is a family car company, we did get involved with that. And, of course, Bill Ford had the silver and blue every year.

Q Was that his favorite color?

A That was the color of the Lions [football team].

Q How how stupid of me!

A What other colors are there?

Q His cars were always silver and blue?

A Yes, one particular blue. Anyway, there was no mystery on that. We had some very interesting and diverse requests from the family, also. Some of them were easy to do, and some of them were very difficult to do and go into quite a bit of conflict situations.

Q Suffice it to say, there was a diverse group of desires and expectations and a lot of fancy footwork to keep up with those?

A Right. Along with that we did specialty cars, both interior and exterior paint. We had a show for top management once a year. This

involved, maybe, twelve different vehicles going from a Lincoln down to a Mustang and a Pinto, where we would try all the new fabrics out, all the new paints, and make actually a glamour show in both color and trim for the vice-presidents at the company. This was a general invitation, and it was a showcase of our wares.

Q How would you showcase the interiors? Would you have a styling buck of some kind that you would...?

A These were actual cars. So you take twelve or fourteen cars, and you strip them and redo paint on the outside and with the glamour paints and the brand-new fabrics. You did not necessarily change the design of the instrument panel, but you did all the seat styles in the new fabrics.

Q The woodgraining, too?

A That's right. We had new woodgraining, but not the general contours.

Management and the vice-presidents wanted to up it, and we had it every six months after the first couple of years. It became an every-six-month show. We learned so much from it, and it proved to be interesting to everybody.

Q An advanced concept workshop for interior trim?

A Absolutely.

Q And these are where you worked out the concepts that your department had worked up and were hoping to someday adopt?

A That right.

Q Can you remember any specific examples of things they were most taken with?

A We would do these spectacular color cars. I remember one car that was in the show, and it was plum. It was a Mark. It was the first time

that a red/blue was ever shown. It was a bit on the gaudy side, but we shocked them with that plum situation. I remember that, at the time, Hal Sperlich was still at Ford.

Q What was his position then?

A He was in product planning.

Q One of the senior product planners?

A Yes. I remember he went to Chrysler with Lee [Iacocca]. He went because of the small car conflict with Mr. Ford, and it's in Lee's book. But Hal had just gone through a divorce and wanted the plum car for the weekend to sport on with his new girlfriend. The report was that it really knocked this girl out. She really loved and dug that. But, it's that type of thing; we do shocking renditions.

Q In effect, Sperlich was conducting a market research survey?

A A bit. We would do a car like that every year for Gene Bordinat.

Q What were his favorite colors?

A One of them we did was a pink and black car. I remember that was quite a shocker, and people really looked in question at it. It was one of those things, you either liked it as a new thing, or you thought it was really gaudy. But somebody bought that thing, and it was the same color as some restaurant out Telegraph Road. It was kind of interesting. But we did that for Gene every time until we got into his Clenets.

Q Tell us about these Clenets.

A I think he has two or three of them now.

Q What was it?

A It was a rebuilt Cougar. This guy, Clenet, would take a Cougar chassis and rebuild the thing.

Q Make it into a super model?

A I understand that he's not doing that anymore. I haven't kept up with that, but, I think, Gene has at least two of those. Gene would drive that back and forth to work. Besides these special cars that were made for Gene, he'd have his Clenet parked out there. I don't know whether that went over too well, but he did it.

Q Was he attempting to make that into a semi-production car?

A It goes way back with a formal long hood, and we did a study of that on a Thunderbird at one time to see what we could get out of a custom hood. Of course, it didn't go anywhere. But these are the things that we would try out in our career.

Q It was really a laboratory?

A Always. In the two years of color and trim, one was the oil crunch, and obsolescence of the trim program, and the designer Marks were....

Q That was very popular for a time?

A We could not afford anything new on the car. Let's say we couldn't change the grille, but we could change the color and trim and do something that would grab the public. What can you do for grabbers?

Q You're talking about Lincoln Continentals of this period?

A Yes. Marks and Lincolns. What can you do? One of the things we did is to make a specialty thing, again from some of our annual shows. It stimulated the thought that possibly we could have an upgrade Mark, and call them Designer Marks and let various designers around the country put their design mark on the things -- Givenchy, Bill Blass, and a few others.

Q Was there a Cartier involved?

A Yes, Cartier.

Q He wasn't a designer?

A No. Cartier was just a name. There was a Frenchman that had charge of the company at the time. The Cartiers no longer run it. But the company, itself, was run by a man that we dealt with.

Q But he agreed to lend the name?

A Yes. And usually the color and trim area made up samples in a very nice brochure of, maybe, three answers for their particular line that they would endorse, and they would pick one out of the three. Bill Blass was one that I remember who came to the Design Center, and we actually met him and showed him his three choices, and he was very well pleased with that. Each of them had three separate proposals. They'd pick one, and that would become their year. That's their color, and they would get their little trademark on it.

Q What did Blass pick the first year?

A For his year it was blue and white. I was very pleased with anything he picked, because he did a good job. He had a tan one year, and we matched it up with a special interior.

Q I remember it was orangish tan leather on the exterior housing.

A Right.

Q With a very good vinyl trim?

A It was very nice.

Q And the interior was matched to that color?

A Yes. So, anyway, they would change their color specs on that, but Bill Blass, in particular, would get his little logo -- BB -- on the car

somewhere. The rest of them would get their little note. Of course, you'd charge a guy two thousand dollars more, and then he gets Bill Blass' name on the car, so that works good. I understand they went over big, and there was a profit of two thousand bucks top on that car.

Q You mentioned Givenchy. Did you have any contact with him?

A Only by mail.

Q He didn't come to Dearborn?

A No.

Q But Blass did?

A Blass is one of the few.

Q As I remember those cars, they were very well accepted and very tastefully done.

A After my interior experience in color and trim which went for two years almost to the day, I was transferred back to exterior where I had Cougar, Thunderbird, and all the mid-size cars. It was almost like a round robin. Here I am, along with that, with all the Ford car exterior.

Q They felt they needed you?

A Yes, that's right. That's what I found out. I didn't want to leave color and trim. However, they said, "You'll enjoy it." And I did. When I went to color & trim, I had my misgivings because of the complexities of that thing, but there were good people up there. Andy Olinic had the color, and Jimmy Hodem had the trim, and they had been up there for years and years, and they were seasoned people that you could depend on.

Q Hodem is still there?

A Hodem retired. He's opening up a hardware store someplace in Northern Michigan.

Q Who wanted you to come back and why?

A Gale Halderman, at that time, was the executive director over all this, and he and Al Mueller wanted me back in exterior.

So back again I went to exterior. We did many facelifts on the Thunderbirds, and we did the new Thunderbird and Cougar in the studio in what year was that -- 1988/'89 Thunderbird and Cougar, the one just previous to the one currently on the market. The most interesting was that we did a new '79 Crown Victoria. This was fashioned after the Caprice Classic [Chevrolet] and on the dimensions from that car. Those two run neck and neck. Bill Bourke was in charge of NAAO. We started that program, and we had a lot of attention from Gene Bordinat, himself, in the studio guiding that, because there was a two-door to do, and a four-door to do, and a station wagon.

Q Was this to fill a gap in the line?

A No, it was to shorten the car. Give a new dimension to the car. This is the initial stages of the shorter car.

Q The downsizing?

A Downsizing program, and trying to get the most out of the room. We had a current Ford at that time in the room, also, plus the Caprice. We thought we were really doing a small car at that time -- this new Ford. Lo and behold, right now it looks like a big car. That's how our image is going down.

When we first did that car with its formality, it was a success the first year. But, lo and behold, we did not have any expectations of it lasting from 1977, when it was designed, to '90. The people that I've talked to -- the sales -- were saying that they're working the plants

three shifts, and they can't keep up with the demand for that car. Originally, after it was on the road for a year or so, we thought it would die because it was an old design. It wasn't up to the aero situation, but, anyhow, it has been successful, which I'm glad about. That car has not changed at all.

Q What was your input to the exterior?

A Almost everything, along with a crew of five people doing this and that work.

Q This classic design that you utilized -- Bordinat was hovering over your shoulder watching every...?

A He was there because his current interest at the time that car was done was in our studio. Anytime he had an interest, personally, in a car, he was there.

Q Personally overseeing it?

A That's right. He did not have interest in everything that was done, but, when he did, he was there.

Q It turned out to be a classic timeless design?

A That's right. I don't think of it as classic.

Q That many generations still prefer?

A The trunk size is good. Everything is good on the car. It rides very, very well. It's as good as our Lincoln Town Car, which has the same underpinnings.

Along with that, we did an interesting thing. Gene had the thought of possibly making a Mark station wagon off the Mercury wagon by having a pseudo-spare tire deck on a rear tailgate and putting that cue on the thing and changing the front end to a Mark front end. Obviously, it

didn't go, but in that, again, we tried these things to see how they look and whether there is any interest.

Q How far did that get?

A Only as far to make one up?

Q Full-size clay?

A Right.

Q What kind of reaction did you get to that one?

A We figured it would have snob appeal to people within Texas and other places that have ranches that want something above the normal Ford wagon.

Q You could have a Lincoln Continental wagon?

A That's right. But it didn't go anywhere.

Q Who shot it down?

A I don't know, but it was a fine, fantastic thought.

In that time span we started to use the wind tunnel on all our clay models.

Q What was the advantage of a wind tunnel over other less formal design measurement devices?

A Because we were in the gas situation, and we had wanted to get the most miles per gallon. That was the incentive. If you break down the drag situation, you're going to do some of it, plus the fact that, at that time, we had a man that was in charge of our aero. I've forgotten his name, but we had a guy watching over that type of thing and doing calculations and studies of the wind tunnel test.

Q The big problem was getting down the coefficient of drag?

A Right. And little things like just moving a fender line down an inch or even half an inch helped or rounding off a corner. At those

times, it helped out greatly. Surprising what it does, but it was my first experience. I went down to the University of Maryland where we have a 3/8th wind tunnel. That means that you have a 3/8th dimension car. From the full-size, you'd dimension it down to 3/8th, and put it in the wind tunnel, and run air at 110 miles an hour over it, and we see what our car is doing. Remember, we did that with the Thunderbird/Cougar and also the Mercury. Even rounding off the front end of the grille area helped. These things do matter, even with that car. But I notice they haven't changed it one bit in the four and a half years I've been gone.

Q They haven't changed it at all?

A No, they haven't changed much at all. The taillights and the new grille were in effect when I left.

Q Those were yours?

A Yes.

Q That must make you feel good that the last big project you were associated with has endured so well?

A That's right. I'm surprised.

Q You're surprised because you know that those products don't last that long?

A That's right.

Q And this one has?

A Right.

Q Does it give you quite a bit of satisfaction to see a Grand Marquis go by and say, "Gee, I did that?"

A Yes. It was done in 1977. But the most successful car, and I'm sure Gene can take the credit for it, is the Pinto. More Pintos were

made than any other Ford.

Q Unfortunately, it came to a sad end, but it was quite a car in its time?

A Oh, yes.

Q Was that Gene's conception?

A I think so. So I ended my career back in interiors and had charge of almost everything at the time I left, except the color and trim area.

Q Since you so recently retired, you must have been involved with the emerging pseudo science of ergonomics. Do you remember how that came about -- making the customer a comfortable driver?

A That was just getting in effect when I was leaving. But, of course, we tried that for years. We had Oscar in there. We got all the controls. I don't know exactly why this is being touted now, because we did that all the way through our career.

Q Tell us about Oscar. Did you have anything to do with it?

A Five foot ten. He was modeled after....

Q Mister average consumer?

A Yes, but there was a fellow named Doff Painter....

Q A real person?

A Dating back in the 'Fifties, Doff was a young clay modeler, and he met Oscar's description in size and shape. They modeled Doff's head, in fact. He became Mr. Oscar. He's a five foot ten guy, which was Oscar. Average height and weight.

Q When did you get Oscar started?

A As long as I can remember?

Q Back to the late 'Fifties?

A Oh, yes.

Q So what you were doing in those days is not much different from what they're touting today as ergonomics?

A I don't think so, because we had arm reach and everything that they say, "Okay, now it's been engineered for a person." We did that way before -- a long time ago.

Q You were angling toward the customer?

A Sure. We always did that.

Q If he wasn't comfortable, he wouldn't buy another Ford?

A That's right. However, one thing I must say that they're more conscious right now of seat comfort than they ever have been. That's a place where they can cut money and nobody knows it. We got our share of the interiors being penny-pinched to save some money in the comfort and seat springs. We've gone through that period where we can save money by taking out a seat spring, and now they say, "Hey, we've got to give the guy something that he's comfortable in for a long period of time." From a money standpoint, I think they're doing things right right now. Even this Topaz I have, I can see where they're striving to equal or better what Japan has, and I'm happy about that.

Q Japan has been the leader in seat comfort?

A Right. I think Ford and the rest of them have learned their lesson. We've got to give people what they deserve when they pay out that kind of money. What used to frustrate me was that in September we would bring out a car, and we'd offer this, and this, and this. Come January or February, we had a PIP action.

Q What is that?

A Profit Improvement Program where we had to make a list of everything we could take out of the car to make a penny.

Q This would come down to you?

A Oh, yes, definitely. Could I do without this and that?

Q Profit Improvement...?

A Profit Improvement Program. PIP.

Q That would come out in January?

A Yes, and then we'd take money out. I don't think they're doing that any more. I know they're making a profit.

Q How would you accomplish that?

A Such as a map light. We'd take out things, and even to the point where can that seat be built without so many springs? Can we reduce the height of the carpet? So it would come out in the beginning of the year with a sixteen ounce carpet, and you'd end up with fourteen. Headlining -- can you get away with a cheaper fabric? Where can you make a profit? I don't think they're doing that any more. I think they're pricing themselves -- I'm glad that they're getting closer to the Japanese in including a lot of options as standard features, and I think that's great for the consumer. So I'm real happy about what's happening, even though I'm not in the business.

Q Do you follow it pretty closely?

A Yes, as much as I can.

Q Do you keep in contact with your former comrades and fellow retirees?

A Yes, as much as I can.

Q Over your long career, what has been your proudest achievement or series of achievements?

A I think with all the ups and downs of the company, you can be proud if you, frankly, have never been demoted. I think I'm well thought of by my colleagues. That's very important. I know some people that were demoted, and it was devastating to them. I never went through that, for which I'm glad. To be well thought of is very important.

My disappointments are that I did not -- because of personal reasons -- get a chance to go overseas on some of those foreign assignments. I had chances to go to England, Germany, and Australia, and I could never avail myself of that. That's my disappointments, and my happy thoughts are that I was thought of and did well.

Q The area in which you spent a lot of your time -- interiors -- was a very important area. Ford needed that. Their interiors had always been a bit stodgy in the 'Forties and 'Fifties?

A The 'Forties and 'Fifties had a standard and deluxe trim. We did not have the modern techniques to make an interior look racy. We did not have form door panels, we didn't have the clever foam rubber tricks that we have now for contours. Things were very staid and stodgy, not because of us, but because of what we had to work with. The fabrics were very sedate -- mohair and things like that. We didn't have the tools. As we progressed and the tools became apparent and available to us, we had more fun and more opportunities. It's not that we didn't think of those things, it was just we couldn't do them back in those days. We dreamed of all these things, but how are you going to do it? We had no way of fabricating them.

Q In terms of fabrics and color, did you have much female input over the years?

A We had girls ever since I can remember in color & trim in various capacities. In fact, we have one right now. I think she's taken over Hodem's spot -- Debbie Webber. She started with me when I had the color and trim. We relied on her instincts because these girls were more interested in fabrics than men.

Q They had a heightened color sense as well?

A Yes, that's right. And the girls loved that up there. It's a type of work they all dream about. So, yes, we do have girls. We had girls in exterior design. A girl named Mimi [Vandermolen] was [and is] an automobile designer. Of course, she got a lot of play because she was a woman.

Q But they were good?

A She happened to be good. That's one of the things you cannot force into the situation by numbers. We tried at various times to help minority groups, but it's one of the things that you can't force, just because they are a minority, to make them that good. They have to have some talent.

Q But the interior and exterior color and trim would seem to be a natural place for a woman to be a consultant?

A Right. More there than any other place.

I can't imagine an occupation more diversified or interesting. Working and competing for thirty years with the best creative design people in the auto business was something I will always cherish.

The following is a chronological sequence of my design career of over thirty years at the Ford Motor Company:

- December, 1949 -- Interviewed for job in Styling Department, Ford Motor Company.
- December 19, 1949 -- Reported for work and assigned to Advanced Car Studio.
- 1950 - 1951 -- Lincoln-Mercury Instrument Panel & Accessory Studio.
- 1952 - 1953 -- Ford Exterior Design Studio.
- 1954 - 1955 -- Assistant Section Supervisor, Ford Interior Studio.
- 1955 - 1956 -- Manager, Advancead Ford Exterior Studio and Truck Studio.
- 1957 - 1958 -- Manager, Lincoln Interior Design Studio.
- 1959 - 1960 -- Manager, Mercury, Edsel and Lincoln Interior Studio.
- 1961 - 1962 -- Manager, Lincoln-Mercury Interior Studio.
- 1963 - 1964 -- Manager, Fairlane Exterior Studio.
- 1965 - 1966 -- Manager, Advanced Interior Design Studio.
- 1967 - 1968 -- Manager, Special Projects Exterior Studio.
- 1968 - 1973 -- Design Executive, Lincoln-Mercury Exterior Design.
- 1974 - 1976 -- Design Executive, Color and Trim and Advanced Interiors.
- 1977 - 1978 -- Design Executive, Mid-size and Luxury Exterior Car Design.
- 1979 - 1980 -- Design Executive, Mid-size and Luxury Interior Design.

John Middlestead

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