

"Mgt."
"Leader"

Leland Belew 10-28-98 (v.B interview / Belew's home)

public MIS-perception

A So many people were ^{un}informed about him in other areas of the country. You know, they would kind of think of him as a weird scientist or -- you know, a non-person type of person that is specialized in one thing. I found that in a lot of people.

Q Just the rocket genius and sort of a faceless man.

Motivator
multi-faceted

A Yes, just kind of one sided, for one thing. I have had a lot of people ask me what kind of person he is. He was probably one person I remember as being a person with so many vast attributes and things, you know. He seemed to drive a total country into his endeavors. Not in a looking way, but in an activity way. From the very beginning, he had a way to make people want to work and want to do good. He had so many ways of creating incentives for people, not monetary. I am talking about people feeling good about what they were doing.

Visionary, but
"flexible," pragmatic

I might be plunging in the middle of this, but -- he was a man with visions, and his visions were rather focused as far as exploring the universe and finding out what is out there and putting energy into creating a place for man, too. But he had ways to accomplish those visions; he was flexible. I mean that he was very flexible as far as planning the deal with many kinds of people, politicians and competitors, and peers. He was so innovative in doing that. I know things like "How do you really get to the moon," that thing bounced along under debate and studies to the point that -- his vision was basically to create an earth orbital station and working that with all of the adversaries of other concepts. He conceded that, Okay, we'll go direct. He wanted to build a platform orbiting earth to do that, and that would have given a capability we are trying to get to now.

Q And he thought ahead to Mars and beyond.

A Yes, and that was all in there. We knew what he was up to as far as concepts and as far as propulsion and vehicles and the ways to do it. He wanted to build a base that had a future built into it, but he conceded and took the approach to go direct.

Q So he was flexible in ratcheting down his dreams, I guess --

A He was able to ratchet down and go in any direction and achieve the vision that would finally get him in the direction that he wanted to go or in the direction that he thought we should go. He was extremely diplomatic working with people on these things. He didn't leave rough edges and he didn't create situations that were sort of irreversible as time went on. He was extremely cooperative. He was cooperative, but also he took such a leadership role that there were often things that he cooperated with that were concepts that he derived.

No bridge -- "Mgt."
burning, thinking
of future

He didn't burn any bridges, and I noted that all the time I was around him, I never, ever heard him say bad about any person,

EOB to LOR
flexibility (but ~~hard~~ ~~to~~ ~~turn~~)

(cont'd.) } no bad-mouthing

no bad-mouthing
telling stories, teaching history, geography

never, not did he make any kind of off-hand remarks about any person or any ethnic groups or anything. It was straight -- he had affinity for life to the point that he had a very high tolerance for all people. He had an interest in them. He would tell a lot of stories. You know, in our travels we would be on a plane or riding in a car or something, and he would give you a lesson in history in many areas -- not just this time or what is going on now, but way back. He had a grasp on history and, especially, geography. He knew a lot about the geography of this world.

retentive Powers

Q Aside from apparently being such a voracious reader, he must have retained everything.

A He didn't forget anything. I know of one instance that I knew he didn't forget. This was in 1966, I guess it was March in '66, he was always having hideaway meetings. Here in this area, you would often find him down on Guntersville Lake or in that area. I know I was at that time Program Manager on all the large engines that went into the launch vehicles for the Apollo Program, and it just pretty well -- (disturbance).

"hideaway" weekend meetings @ Lake G'ville "Apollo Applications" planned!

At the time the engine programs where all the engines were being developed and had run through their qualification programs for production. This was going real good now. It had been kind of tough since '60 when we started. We went down to that sort of hideaway for a weekend meeting on Guntersville Lake. One of the fellows owned it that worked out there. He had George Mueller down there with him and some other people. He had one of the fellows from Washington was with George and was in the early phases of the studies that led to Skylab. John Disher, he died two or three years ago was there. So I found out why I was asked to go to this meeting pretty soon after I got there. They began to talk about what they called at the time "Apollo Applications Program." That was using some old hardware, paints and all that to try to get a station. They had a study manager at the time in Huntsville. He was in program development. The asked me if I wanted to think about taking the manager job of that Apollo Applications. Of course, it was a non-funded concept. I guess it was 3 or 4 o'clock in the morning before we wound up. In that process with George Mueller and Werhner von Braun, all the things that seemed to be required to make something happen we totally reviewed, and they committed that they would back those things happening. The tough ones were getting some of the right people, top people, to come in and help. You know, over the years from '66 to the time that thing really got rolling which was '69, not one of those requirements were reneged on. All that was in paper and you had to do it on a one-to-one basis. It wouldn't happen tomorrow, but maybe next month or two months later. There was absolutely no contract, nothing in writing, but every requirement

Apollo & AAP

to make that program go was met.

Q You acted on a commitment simply because von Braun --

A A total commitment between von Braun and George Mueller.

Those two guys -- had they not been the people they were, that program would have never happened. We had people that were really against it.

Q So Skylab derived from that.

A Skylab^{was} brought along with it -- it wasn't derived from that -- AAP was kind of just using a Saturn I^B vehicle, but the tank had the ability to reuse after it was in orbit. We built platforms in and all that. In '68, September of '68, we decided jointly between the Centers and the scientific community that that was too much of a risk to put a lot of effort and energy and money and effort and all that. From September of '68 to March '69 we did studies. There was a group put together to redefine the program. In March of '69 it became the Dry Workshop with the Saturn I delivering the astronauts for Habitat and all that. We were fully equipped. (Further discussion that didn't involve von Braun and wasn't in your notes.)

The backbone of the program (referring to AAP) was built out of the technology that we had in hand, by and large. Of course, the station itself was a piece of launch vehicle hardware. (Unintelligible) And some of the work on the airlock had been done by Houston in programs that preceded that in Gemini and the Apollo Program. Then we built the docking adaptor to dock everything to it. But the science that went into it was new. Most all of the science was new. The solar telescope was a new piece of hardware.

AAP & Skylab

Q Was AAP the brainchild of any individual, such as von Braun or someone?

A Yes. (Inaudible) applications would lead you to believe that that was a piece of the Apollo Program. We could not say "spacestation" in any way up the channel or anyplace. We didn't call it a "spacestation" until around about over a year or two from the time we launched it.

Q As far as you would go officially was something like an orbiting space laboratory or something like that?

A Well, it was that.

Q To avoid the terminology "spacestation"?

A Yes. We called it a "laboratory" and other benign terms that are common to down here. But that's the only major program that I know of in NASA that you never had a program operating plan approved by Congress.

Unique "no Congress OK"

Q The AAP?

A Right, and what finally became the dry workshop. I still don't know what paperwork it was, but it did get a lot of natured as far as studies with the right people in the Congress when we

Skylab

went to a dry workshop. The AAP was originally a wet workshop; it had propellants in it when it went up -- hydrogen. We had a scheme to vent that and let it dry out, but then we abandoned that and did a dry workshop, which means totally outfitted dry, no propellants and launched on a Saturn V as a spacestation.

Q So it never got programmatic approval from Congress?

A Right. I guess it was part of the Apollo budget and identified for the studies and all. POP is the acronym for "Program Operating Plan", and that sort of gives everyone up and down the channels from Congress down a basis to monitor what is going on. Of course, we had the same information, but it was just interesting to note there was not a POP in Skylab.

Q The whole program was not necessarily the brainchild of von Braun's. There were collective minds brought to bear there?

A Well, yes. We had a relationship with Goddard for the science side of things. We had it with JSC, manned operations. Of course, we had activities throughout the other NASA centers.

Newell

Homer (Unintelligible), he represented the science and set, basically, the tone for where science would go. Now, there are applications and materials processing and all that that were outside his realm. But the major science was Homer ~~(Noles, Nuels, Newell's)~~ (Further non-related conversation on man's tolerance on space flight, Russia.)

Q I guess you have a special vantage point to view the Space Station coming on line here.

A Sure.

Q The next generation of Sky Lab.

A Sure.

Q Do you remember any comments by Dr. von Braun about Sky Lab. The thing was as big as a bus, wasn't it?

A Like a 1960's Huntsville, 3-bedroom house as far as overall size. It was large. The astronauts used the circumference of the work station as a treadmill. They would run around the circumference of it. They had a belt they could kind of run in. It was large. It was much larger than what we will see in the Space Station for a while, those diameters are not that large. They are only as large as the Shuttle will take.

Skylab

Q Did you ever see -- So, the whole AAP program really sprang from that hideaway meeting over at Lake Guntersville?

A Well, there were some in-house studies being done and Headquarters was involved at that time. They had been in the study phase for maybe a year or something like that.

Q You said probably a public affairs person had the cabin or place over on the Lake. It wasn't Guy Jackson or Foster Haley.

A No. (Conversation)

Q Did you all get into any R&R when you were over there on the meetings? Did von Braun -- he loved to swim and scuba dive and

things like that.

A No, they weren't doing anything like that. It was an extended work station, I tell you. They had food and plenty of time to relax in between work. George Mueller was as bad as von Braun as far as working on the weekends. He would have things all over the country where he would show up and work right through the weekend. He was an expert as far as being able to get people fused together in a way that you would come out with agreements on things.

Q Did he and von Braun have a pretty good relationship?

A Oh, yes. They worked extremely well together.

Q I understand that -- and I am probably not going to delve into this unless it figures into some story -- George Low and Dr. von Braun maybe didn't have the best of relationships, that Jim Fletcher didn't have the same relationship that Tom Paine and Dr. von Braun did.

A I don't know what I would say in that field. (tape off)

Q I noticed you had some notes.

A I thought I would go over some of what I have always known in order not to do anything twice. He was probably, maybe accidentally or without having credit for it, one of the best managers that set today's definition of "manager" of anyone I have seen. Well, a manager is basically a person that can motivate his people and delegate to the right people those things that need to be done to get a job done. He had no dictatorial-type mode of management as far as what it appeared to be. I am sure he had ways of getting things done without being dictatorial that were effective. For instance, I was basically in program management from before '60 until I retired, and having programs means you have contractors that are basically doing a good part of the work all over the country. At least more than once a year but most of the time twice a year, he would take his Program Managers and some laboratory ~~doctors~~ and his chief people in the Center on a trip that would run about a week. He would hit every contractor. He would hit subcontractors. He didn't have a structured agenda. He would listen. Oftentimes, he would slip off to an associated industry. We had people like GE, and we would go over and look at their new jet engine developments. They would tour you through the plant. You had a good exchange of what they were doing and what kind of technology they had going on. Of course, they wouldn't give their secrets away.

Q This was during the Apollo era?

A That was in the late '60s. We did that also in the Jupiter days. He always did that sort of thing, even in the Redstone days. We would find ourselves in Boeing at their aircraft industry plant and seeing what kind of activity they had. Sometimes, especially in St. Louis at ~~McDonald~~ McDonnell at the time, they

ace Manager

directors

V.B. Management "field trips"

Piloting

"Piloting"

would go to military fighter-type jets. We would be there meeting and hosted all around looking at all the activity they had going. He would slip off and be out there flying with one of their pilots to see how a new aircraft was. He was a real pilot. He loved to fly.

"Boss" ("Traveling")
"Boss" side trips

Q At these aerospace companies plants --

A Well, he would go one place and be taking a ride with someone. (Unintelligible) The thing about Werhner and these trips -- sometimes you would be on a trip and he would take a side trip. He may be giving a speech at a medical conference somewhere, and he would load you in the car and take you along. You would meet the people he met and be there while the program was on. He would take you, not always, but often.

"Boss"
Disney

He was a good friend of Walt Disney. I was a resident manager in the later '50s there, and I was living there so I was hauled over to Walt Disney's place. We would go in one of the backdoor-type-looking places and go in there. He didn't set you in the car outside and go in. Of course, you weren't involved in his meeting with Walt. I guess Walt was getting a lot of ideas from him.

Q On futuristic themes?

A Sure. That was '57 or '58 or something like that.

Q They collaborated on that early television series.

A Yes, I think so.

Q That was in the mid-50s or something.

A I think so. I'm not sure, but I think so.

If we going to the West Coast, sometimes we would set down in Kansas at one of the aircraft plants out there and tour a plant. Of course, we would drop into other centers like Edwards Air Force Base. We were always going over to their experimental activities or where they experiments like on U-2s and stuff. We weren't show the U-2 at the time, but he might have known about him.

"Traveling" - "Manager" also
"Boss" v. B inclusive of others!

It was one of those one-of-a-kind opportunities to work with such a person and really be able to get on a fast track and know what was going on in the overall of business of aerospace and to meet people that you would probably never be able to meet. He had a natural tenancy to do this; I don't think it was by design or by plan. His people just got a fast-track education on a lot of things, at least speaking for myself.

Like in LA -- Rocketdyne was North American at the time, and most of their engine development -- He went to the corporate-level people on things, not to complain, to communicate and sort of give them a feel for the programs that we were in and what we wanted to do. We would go over to Atwood and Kendelburger, they were the two top people at North American, and you would go right along with him. He wouldn't leave you outside.

McDonnell

You met people like the old Mr. Douglas and people like McDonald in St. Louis. If you had activities involving them, you were there. That doesn't happen anymore. Most people cut off and they have tiers and certain people handle certain things. Not him, he had a way of building a management structure that felt comfortable with him and ^{at} any level that he took you to. I don't think many people knew that kind of thing about him.

Q I think you are right. But wasn't that wise on his part.

A I don't think it was calculated. I think it was just the way he was. He managed that way when he was the Director of our Center and when he was the Director of the Army part of ABMA. Every Friday we had an all-day program oriented at the laboratory director level meeting. All the programs would give status, but it usually hinged around problem areas and things that needed to be decided. His laboratory directors were there to represent their areas. Before they would just drop over, and it was like a tiger feast sometimes. But it was always in the right spirit.

Q Somebody told me that in those kinds of meetings or other management meetings that if you had a problem that you wanted to confess to or bring up for discussion or generally you presented the status of your projects, you did it in a one-page report or a one-page memo.

A That was the weekly reports. It was sort of a status thing that he got started a little later on.

Q But that was not the Friday meetings?

A No. Friday was review of the total activities involving programs of substance. You would come out of that meeting with a clear understanding of the direction to go. He didn't leave anything dangling. He would take a vote, and if there was a dissent in someone's area, he had a chance to explain his way out of it if he wanted to. But the decisions got made. They didn't get dangled along and you didn't have to guess where you were going. That was every Friday. It was structured where you didn't change base lines every week. They had a system that was base-lined from a commitment point. (Unintelligible) And you never forgot the original commitment point. Some people shift those commitments all the time. (conversation)

By his taking the lab directors, the institutional side of the house, the program side together every six months or so, that was a cohesive and pulling of people together, too. No one was second guessing others because they thought someone else might know more than them.

Q Some people contend that in our race with the Soviets that the two big reasons that we won the race to the moon were the heavy lift launch vehicle ~~that we showed~~ and program management of vast undertakings, of vast technical projects such as Apollo. We had such a good management system as opposed to the Soviets

"Boss"
"Inclusive"
"Traveling" / "Manager"
"Manager"
"Boss"
"Manager"
"Mgt."
6-mos.
field trips

10/10/90

that we --

A That system finally -- that's true. I would say that doesn't exist today. I don't think there is any program in the government like that today, because every month in Apollo, we would go to -- it would usually be a couple of days -- meetings where we would review the total program. Every Program Manager would have a certain day to review their program. The group that reviewed you were other Center Directors, so (Unintelligible). You were subject to review by any of those people that wanted to get into it. People did get some kind of a debriefing before they came to those meetings if there was a problemsome area someplace. You had defend what you were doing to that level of people. When George Mueller took the job of being the Director of Manned Space Flight, which was the headquarters position that ran the Apollo Program, you couldn't pull any wool over that guy's eyes. He was sharp. He had one of those long-term memories about details. By the way, he's still working and he's close to 80, I guess. He's a CEO for a company up in Washington State near Seattle and building missiles. I think that's their business. (conversation)
(Side B of tape)

Geo. Mueller

A When you would travel someplace, he usually didn't seem to carry any money. (Unintelligible) He didn't seem to see a need to carry money, I guess.

"Nobody's Perfect"

Q (Conversation about Milton Cummings) You don't remember any specific instance where you got stuck with the tab or anything? I don't mean willfully by him necessarily.

A Oh, yes, several times. You would be somewhere and pay for some little thing or another, but nothing outrageous for sure.

Q Did it come out of your pocket or did you get reimbursed for it?

A You would just pay for it, and whatever your expenses were, you expensed them out. You didn't have very high limits you could reach as a Civil Service employees back then. But it was just one of those interesting things about the person. He just didn't carry it. I guess he would forget sometimes, as a lot of people do.

"Manager" (no putdowns)

One of his characteristics that is unique for someone at his level of activity is he never, ever put anyone down in a meeting. You would never get anyone coming out of a meeting that felt like they had really been put down now in the sense of a chewing out or in the sense of embarrassment. He had a way of handling those situations where he would sort of answer the questions himself and kind of dismiss the need for any further discussion. That's not a characteristic you find in many people.

"Magr" (eliciting comments)

He had a way in meetings to draw out people that would normally be hesitant to speak out. People would say what was on

"Mgr." (not embarrassing pep. - eliciting comments, etc.)

their mind who otherwise you would normally find totally shy. In that way you got a true indication of where your people were coming from and what was on their minds.

Q Was that his nature to be considerate? or did he find that that was a profitable way to treat people?

A You never did get a feedback as to (Unintelligible). You have to assume that that was the way he was, because you never could get a feedback. Sometimes people will do things and then later on you will get a feedback that that was a setup that they had, but not in his case. You never got a feedback on things like that at all.

Q So you never saw where he setup people to embarrass themselves?

A Not at all. I don't recall him ever embarrassing people for a purpose. You may not see a person that had been repetitive in that to show up again. There are ways of doing things without being harsh to the person.

In our in-house activities, he had a practice of talking to all the available people. He would make tours. He would go to the facility where they were manufacturing things unannounced and just talk to people. Some people didn't feel restrained, and he wound up getting whoever was in charge of that area to go along. In the manufacturing facilities, he was always in that area. He had a real special interest in the hardware. He would ask them all kinds of questions.

Q Unannounced?

A Yes. He never set it up.

Q Was this to contractor plants?

A In our own facility. But he would do that to a great extent in the contractor facilities. In the contractor facility, you would be in a meeting-type environment, and he would off the cuff suggest that we take a plant tour and look around. Which was all right. I think they kind of suspected that that might happen, but he just had a genuine interest in all of the hardware and what the process for building it was and the latest routing techniques and practices and the instrumentation that went into the process.

The other kinds of things that were sort of characteristic of him was he had multiple interests in almost anything. He was a pilot. He would always take off and land the NASA airplane, and then he would fly it in bad weather. He wanted that instrument time, I guess. I know on a couple of trips to the West Coast, he would take over out in the West. He would take the controls, and the next thing you know you would be flying down below the rim of the Grand Canyon. That was in the Gulf Stream.

On one trip we flew down about nose level of the residents -- (Unintelligible)

"N.B.W.A." (Mgr.) - lab visits & plant tours

"Renaissance" (Multi-Interests)

Piloting

Q I have heard about that, and they say you could even see the tourists down on the ground looking up in shock.
(Conversation -- interviewing pilots.)

A He was an avid lover of diving in the sea and doing things like that, scuba diving. And then we went into Florida a couple of times, and we had some affiliation with the advanced subs that were used for exploration. The Navy was doing some stuff there in support of us with confinement in an enclosed place. We would go down there -- I think it was in the Ft. Lauderdale area -- and he didn't just get in there himself; he would take you along. You would go down and cruise around for two or three hours and see all the activity underwater there, the coral and stuff.

Q I know you are in that album of letters that were sent to von Braun on the occasion of his sixtieth birthday. Does that ring a bell?

A Yes.

Q And somebody referred to Ed Link and his magic submarine. It sounded like it might have been down in the Caribbean someplace.

A I think it was Florida.

Q Does "Link" ring a bell?

A Link Frayner. (Or maybe a Link Trainer, and aircraft term -- unclear on tape)

Q But he had this insatiable curiosity and wide range of interests?

A Oh, yes. I know he was one of the more frequent users of our neutral buoyancy tank that we had for training and for design verification of things that they would have to do in space. He was always working in that thing.

Q Can you address the question of how badly he wanted to go into space, to fly into space himself?

A I never had any personal experience of his saying how he really wanted to. I think he was realistic enough to know that he wasn't destined to do that, but he did everything short of that. He did almost everything that the crew was doing to get ready to do it.

Q There are a lot of pictures of him in the KC134s --

A Right. (Unintelligible)

Q -- and of him in space suits --

A Oh, yes.

Q -- and with his pilot training --

A He would do some of that trainer stuff that the pilots were doing and all that.

Q I understand he got into every simulator you can imagine?

A Right.

Q And crashed a few?

A Probably, I don't know. He wasn't vain about it. If it

Sportsman "Recreation"
(SCUBA)
Submersibles
Neutral Buoyancy Tank

Fly into Space Himself?

Simulators

"Perisance" Simu *

didn't work out. He didn't try to act like he were perfect.

Q Somebody told me about his experience in the F4 simulator. He got in there and he piled it up a couple of time. Apparently he loved that kind of thing.

A He loved all that stuff. I have never seen anyone with as much desire to learn new things as he had. It was hard to find something he wasn't interested in.

Q Any particular quips that you can think of?

A Well, I heard him talk about a lot of things, but I didn't pick up that they were necessarily quotable. I just sort of blended that into that being his person. You kind of expected him to come up with things that were unique. It didn't seem to identify him as doing anything out of the ordinary. He had a lot of mannerisms. During Apollo they had special meetings with these individuals, but just in a way of communicating with people.

Q Any embarrassing moments that would be suitable for retelling, maybe humorous embarrassing moments?

A No, not that I can talk about. Nothing that he instigated.

Q Any insights into his role as a husband and a father on the personal side?

A Well, I know he would talk about his kids. He was quite devoted in those roles.

Q (Conversation)

A Talking about airplanes, I guess one of the more adventuresome endeavors (Unintelligible) was when he had that pregnant guppy activity going. It took someone with a lot of foresight to do that. That was a pretty wild scheme, especially knowing just a little bit about the ones that were implementing the job. They were pretty far out, too.

Q Then they came out with the very pregnant guppy and they renamed it the "super guppy." Did von Braun ever handle the stick himself?

A Not that I know of, but I wouldn't know if he did.

Q I was told he arranged after crashing the orbital simulator a flight on a Gulf Stream that had been extra weighted as a flight model to somewhat simulate this flying orbiter, and he went up and was allowed to put his hands on that for a little while. (Story about Jim Daniels)

A He loved to do things, too, that were highly technical.

Q Do you have any insights on how reluctantly or not that he left Huntsville and his team to go up to Washington in '70?

A Well, I gather it was a pretty solid situation.

Q He was directed to do that?

A Well, I don't know. I would guess it was one of those kinds of offers you don't refuse, and if you do, you have to do something else. I don't know. I know I was kind of surprised by

Love of "Technical" Stuff

Lv. Hsv. for Wash.

Wash. & Fairchild
& Illness

that and what happened there. I was trying to think that it was after that, when he was on trips here or I would see him up there, (Unintelligible) when he came down for the dedication of the von Braun Center, we were talking, sort of out of the traffic pattern, and he worked for Fairchild at the time, and he was talking to me about working for Fairchild, but I didn't follow up on it. (Unintelligible) his medical condition. I think that was the last time I talked to him.

Q Do you think he was ill when he left NASA?

A I don't know.

Q Do you think he knew it when he came back to Huntsville for the dedication?

A I think so. I think someone told me that.

Q There was a memorial brochure on his death, and they showed a picture on the cover of him posing with the (Unintelligible) Saturn V and he posed in tropical garb at the Cape. They were down there for some meeting. He asked someone to take a picture of him in front of this S1C and made the comment "I may not come back here again." I think that was about '75, and he must have known he was ill.

A Yeh. I think I knew it when I saw him at the ceremony for the Space and Rocket Center. (?)

Q He was said to be a workaholic and von Braun was said to work long hours and take work home. He wasn't necessarily an early riser, but he worked late.

A He would have a light on if it was dark and read going home.

Q He would have a driver? *in his car*

A When they had a driver, yes. He would do a lot of writing and he also did an awful lot of conceptual design stuff.

Q In his after hours?

A Yeh. I don't know if he kept any normal work, but he didn't have a clock as far as work went. He did an awful lot of conceptual design on space stations, large space stations, gravitational simulations, that gave you more of a home-like environment. I guess a lot of the (Unintelligible). I don't know where all his sketches and stuff are. I guess they are in a museum or someplace.

Q Some of them are at the Space and Rocket Center. *in*

A He didn't just pictorially do it; he also put *on* the math and physics behind the plans to make it more of something that was possible to do. He was really gone almost every weekend, too. During Apollo, we spent lots of weekends working.

Saturdays -- we worked Saturdays for years. We traveled an awful lot, and most of the travel was after dark and on weekends. There just wasn't a lot of wasted time.

Q You were based out there in California in what period of time?

'75?

Workaholic -
not wasting time -
conceptual design work!

(living & working in space)

Conceptual designs -
long hours - lots of
travel & night
weekend work

Belew
background.

working in Calif. (for ABMA?)^{yes}

L. Belew / 10-98

A That was '57. We saw the Sputnik. We were having a meeting. I was there when the Sputnik went up. That was Army at the time. We were doing the Redstone and the Jupiter.

Q Were you out there in the '60s at all?

A No. I came back and became Program Manager for engines, and that was about when NASA got kicked off, which was about -- '59-60

Q NASA or Marshall Center. NASA was formed in '58 and Marshall --

A I think it was about '59 that I was Program Manager for the Engines. I was working out of the lab, and when it became NASA we organized in order to get to the program level in the Center. (Further conversation about Belew.)

• Belew was ~~an~~ mechanical engr.
• Retired from MSFC in 1980.