CHAPTER NINE

*****

THE TEXAS EXPERIENCE

INTRODUCTION

At the end of chapter five I mentioned the circumstances leading to my employment with Schlumberger Well Services whose headquarters for the United States were in Houston, Texas. Simple economics prompted me to go to work to support our family of four. Valerie was three years old and Celeste was just one. I think Esther was a little disappointed that I couldn't complete my Masters degree at that time. She was always supportive of my efforts to move ahead and I lacked but a few courses, which could have been completed in less than a year. I suppose I was too, in a way, but the excitement of finding a job, which I felt sure, was my kind of work thrilled me to no end. I was starting at what I considered an excellent salary of $275 per month and after a four-month training period I would begin receiving a bonus for each job completed.

In any case, when he saw I really wanted the job, he ushered me back into the office of Louis Magne who then officially welcomed me aboard with his approval and told me I would report to Beaumont, Texas for training as soon as I was able.

It so happened that the manager who interviewed me, Louis Magne, was filling in for the Rocky Mountain Division Manager who was on vacation. I suppose I left a favorable impression with him because he elected to send me to the Texas Gulf Coast Division, one of two reporting to him as an area manager. He could just as well have left me in one of the Rocky Mountain divisions because they needed engineers as well and to one of which I transferred in the fall of 1957. Of course, at that time, I could have cared less. The work sounded exciting and the real money dangled before my eyes overcame any problem I might have had with returning to the gulf coast. Remember, I had just left Biloxi, Mississippi 2 ½ months earlier. Louis Magne was a real Frenchman, and was also one of the early pioneers of the company. Needless to say, he really impressed me. It was obvious that he held an important position with the company from his rather conservative demeanor and he never mentioned the need for him to have my employment approved by someone else. No, it was obvious that he was in control.

As I mentioned at the end of chapter four, I did go through a second interview, which seemed designed to discourage me. It took place just a few days later with the assistant division manager of the Rocky Mountain Division doing the interviewing. I believe he was testing my interest and commitment because he dwelled on the long hours and hard work involved, both of which I found to be true at a later date. He didn't, of course, understand my predicament anymore than he did my desire to work outside as well as a willingness to work hard. The latter was something I expected and even relished. I was used to paying my own way and knew success in life required hard work as one of its elements. In any case, when he saw I really wanted the job, he ushered me back into the office of Louis Magne who then officially welcomed me aboard with his approval and told me that I would report to Beaumont, Texas for training as soon as I was able. I had just finished final exams on the summer courses I was taking and told him that I was ready. This was a Friday, as I remember, and by Monday morning I had an airplane ticket in hand and was on my way to Hobby International Airport at Houston, Texas. Was I ever excited or was I excited? I had only flown once before and that was in the air force when I was transferred from Lackland AFB in Texas to Biloxi, Mississippi. Needless to say, I called Esther with the good news and she was just as

elated as I, knowing full well that we would be back together again as a family in due time. I was tired of batching it and she was tired of living with her family in Glenns Ferry.

A TEXAS SIZE WELCOME

Two gentlemen met me at the airport in Houston and over lunch, I found out one was the Division Sales Manager and the other the Division Manager. I've lost their names now but I think the sales manager was Guy Sullaway or something like that and the division manager's last name was Roberts, I do believe. They took me to the Petroleum Club, which was just about the nicest place I had ever been in at that point in my life. Remember, I was kind of a small town hick who had never owned a car, as yet, and who had existed on air force pay after college while struggling to make ends meet. My idea of a nice restaurant would have been something like a present day Shoneys. Needless to say, I was duly impressed, not only by the petroleum club but also by their friendliness and apparent interest in me. Men of their stature taking that kind of time with a new hire surprised me, being totally unexpected. Rather I had visualized a much more cool, or maybe I should say reserved and formal, reception similar to reporting to the CO in the air force for some assignment. After enjoying a very nice lunch, they took me to the division office where I was introduced to all the personnel. I was then given a plane ticket to Beaumont, my new location, after which Guy Sullaway drove me back to Hobby International Airport for a late afternoon flight to Beaumont where I was to be met by the manager of that district.

Remember, I was kind of a small town hick who never owned a car, as yet, and who had existed on air force pay after college while struggling to make ends meet with our family.

Figure 9-1 Valerie and Celeste at about 3 & 1 respectively (summer of 1955 in Glenns Ferry)

ON TO BEAUMONT

The distance was a matter of 100 miles to the east and we were landing before I could settle back in my chair. Of course, you must remember the airlines were mainly flying props at that time (1955) and the DC-3 was their workhorse. Ralph Clennon, the district manager, met me at the airport, once again. I hope I got his name right. Boy, these names are escaping me now but maybe I'll do better later. I don't understand my problem, even within the early stages of Alzheimer's the long-term memory is supposed to be OK and I know mine isn't that advanced. Soon I was checked into a local motel, introduced around the shop and given some time to locate an apartment.

The engineer assigned to train me was Carter Robinson who was a fine individual, socially, technically and, as far as I could detect morally. I soon grew to appreciate his commitment to my progress even though he made me nervous, looking over my shoulder all the time. In due time, however, I realized he was doing his job in a dedicated manner, which I'll explain later.

A REUNITED FAMILY

I don't remember exactly how long it took to get Esther and the children down to Beaumont but I don't believe it was more than a week or two. During that time she was staying at her family home in Glenns Ferry, Idaho, as mentioned, where the photo of figure 1 was taken. I have always liked this picture. Valerie, once again, has that impish smile like she might be getting

ready to poke Celeste in the ribs or something. Celeste is obviously commenting on the situation or maybe just expressing her awe of her uncle Art who was taking the photo.

Anyway, I found a two bedroom furnished apartment rather quickly and Esther shipped all our belongings via freight. I'm sure we went through some inconveniences during our wait for them but being re-united with family obliterated any memories of such. We had saved $700 dollars from my mustering out pay but by the time Esther, kids and belongings arrived in Beaumont we were back to square one with no savings. However, we were close enough to the shop so I could walk to and from it and the only real expenses were for the family. I believe I had to get an advance in salary to make it through the first month but, in any case, the $275 dollars was more than the air force paid. It took care of our bills quite easily and we were soon enjoying life. Of course, we had no car but that was old hat. I must admit, however, I was eagerly looking forward to my "breaking out" (promotion) as an engineer at which time I would get a company car. Remember, I had never owned one and was now 27 years old.

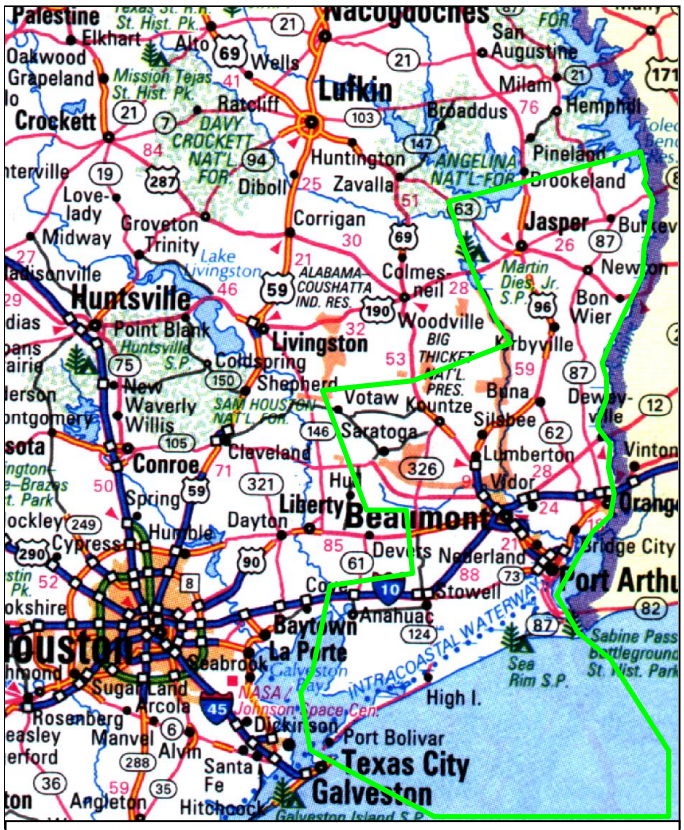

Figure 9-2 A map roughly outlining the district serviced by units in Beaumont, Texas.

The apartments had a nice little interior courtyard, actually a grassy area, and Esther soon was acquainted with neighbors through allowing the girls to play outside in the same. The only negative of the apartment I remember was the cockroach population. Neighbors claimed that fumigating was of no value because they simply took up residence in the neighboring apartment until the gas was gone and then returned. There were only a limited number of rather ineffective poisons available in those days. We tried some but soon gave up and in spite of Esther's unfailing commitment to a clean house; we couldn't seem to get rid of them. She was an excellent housewife and mother who believed cleanliness was next to godliness. The girls were always clean and neat and the apartment spotless. At that time there was no wash and wear materials and she had to press virtually everything except our underwear, which she did without complaint. Though the cockroaches seemed there to stay, Esther soon had any opened foods in covered containers and learned, I suppose, to ignore or maybe just put up with them. Even in later years, however, she used to vent her disgust with those ugly creatures. If there was anything in this world she really despised, it was those dirty nasty cockroaches. Ugh!

TRAINING EXPERIENCES

The area covered by the Beaumont district consisted of about five counties if my recollections are accurate. I have outlined the area in figure 9-2, the probable area involved, although I'm not too sure of the northern boundary. I will refer you to this map from time to time as I relate various experiences in the Beaumont district.

She was an excellent housewife and mother who believed cleanliness was next to godliness. The girls were always clean and neat and the apartment spotless.

In those days the first two weeks of engineer training consisted of learning the operator's job or at least receiving a healthy introduction to their responsibilities. Such training helped teach you essential safety practices as well as the proper way to assemble equipment, make certain checks and repairs to the truck cable and tool heads, prepare a truck for the job, clean and restock it after a job, build a bridle, mark cable,

properly position the truck at the well site, rig up and down at the well, run the winch and even how to drive the truck. I may have left something out of that summary but those items should cover the most of it. I'll begin my job experiences with that training, which tested my commitment to Schlumberger.

OPERATOR TRAINING

The operators did most of the physical work in terms of getting the equipment to and from the well site, preparing it for operation and actually running it up and down the hole. The engineer helped at certain key times but most of all, he needed to be intimately familiar with their jobs because he was responsible for the whole operation. If something went wrong, there was no passing the buck. The engineer had to take steps to assure himself that no mistakes were made. Thus, a good engineer knew the operator's job as well as the operator did and directed his efforts to see that they were carried out correctly. There was a good deal to learn in the two weeks that I was in an operator's shoes and they, the operators that is, loved it. They made no effort to make things easy for me and, in fact made the situation quite the opposite, but all of it was in good humor.

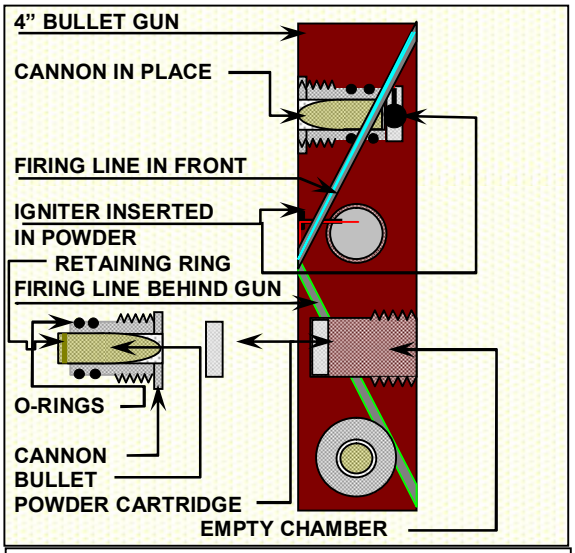

Figure 9-3 An illustration of the old, as well as obsolete, 4" bullet gun.

SECURING A TIE DOWN CHAIN

You probably remember from chapter 6 the role of the tie down chain. It secured the lower sheave wheel to the BOPS and surface casing. It carried the weight of the complete tool string including cable and any tension applied thereon. It was tested on a regular basis to 20,000 pounds of pull because its failure could mean injury to well personnel and a probable fishing job. When securing one end to the BOP, two knots were made in the chain with the loose end taped to the chain. This was to assure us that it could not come untied, a situation which had obviously occurred in the past. In fact, I heard a few such stories in my early days with the company. Many similar safety procedures were employed due to negative experiences of some kind in the past. Schlumberger did learn from experience.

By the time I emerged from there, mud was all over me and I spent 5 or 10 minutes wiping the worst of it off.

During the operator-training period, I was supervised or directed by the senior operator on the truck. He would teach me a given principle and make me carry it out on jobs until I did it right. Securing the tie down chain was one of those cases. You see, it was down-right nasty under the rig floor. There might be 6 inches of drilling mud laying there in a puddle. Because the pipe had just been pulled from the well prior to our rigging up, mud was also dripping down over the BOPS and derrick substructure. I might go under the rig in a clean set of coveralls but that was the end of it. By the time I emerged from there, mud was all over me and I spent 5 or 10 minutes wiping the worst of it off. Needless to say the operators loved it. Here was a college graduate doing the dirty work while they simply observed and, of course, it left them relatively mud free. I got the job of securing the chain for the whole two weeks of training. I learned the process on the first job, naturally, but they insisted I needed the experience because doing it properly was so critical to a safe operation (Ha, Ha). Carter Robinson, my training engineer had no sympathy either and left me to the operators whims, as long as they covered the essential points. Was I glad or was I glad to graduate from the operator training?

WORK OVER PERFORATING CAN BE NASTY TOO

During that first two weeks, we made a perforating job or two. Usually they were done with the perforating unit and the logging trucks wouldn't be involved but when a couple of jobs came in at the same time, proper modification to a logging unit was made so that that crew could cover one. On one particular occasion, we drew

such a job and were sent up to Batson Dome (that seems like the right name), which was a shallow field north west of Beaumont. It was an old field situated over a salt dome. The customer wanted to shoot a rather long zone, which required many 6 foot bullet guns.

Such a gun was about seven plus feet long and weighed a couple hundred pounds, or so. Each was a solid steel cylinder with 24 threaded holes, 4 per foot, 90 degree phasing, drilled into it at right angles to the gun axis. A black powder charge was placed in each hole and a cannon, so-called, with an armor-piercing bullet was then screwed into the hole, illustrated in figure 9-3. A retaining ring, seen in the cannon to the left, kept the bullet from falling out of the cannon during transport and retained it momentarily in the cannon after ignition, to insure its maximum velocity. We were to run doubles and consequently had to screw two together for each run in the well. As I remember, we made about five runs or so. It seemed like more but I'm sure my negative memories of the instance amplified the number.

I then asked, quite innocently, just where we would assemble the guns. The senior operator said, without emotion, "Where do you think? In the middle of that gunk, where else"?

The work began at the shop and all went well. First we changed the cable head with its bridle to a simple perforating head with no bridle. I, of course, learned how to make secure electrical and mechanical connections with the torpedo. You may remember that device is kind of a quick connector, which allows changes to be made in head types. Next, we loaded the guns in the tool compartment. Though heavy, they were clean and the environment was good, i.e. no mud to slip and slide in or make it difficult to hold on to the guns. All seemed well and we headed out with one operator riding in the car with Carter, the engineer, while I rode with the other operator in the logging truck.

We arrived on site in about an hour and properly spotted the truck for the job. Spotting a truck means not only placing it at the right location near the rig but also lining up the long axis of the truck so the cable can be properly un-spooled as well as spooled back on the truck winch. The truck should be placed about 100 feet or more from the rig to minimize the angle the cable makes with the lower sheave and a line down the long axis of the truck as it moves to either end of the cable drum. The line of sight of the spotting operator should bisect the traveling blocks as illustrated in figure 9-4. Such a setup makes it very easy to spool the cable as well as keep the unit a safe distance from the rig in case of unforeseen circumstances. By that I mean well blowouts, a rig falling over or maybe a fire of some sort.

Getting back to my story, Carter and the operator arrived on location about the time we finished spotting the truck. The environment we were to be working in had not sunk into my old bean as yet. I hopped down from the front bumper of the truck after sighting it in and went back to begin unloading. Well, the location was a work over job and the rig was a small truck mounted job. The well was shallow so it was about the size of a good water well rig. There was no rig floor and the whole area around the rig was a sea of mud. Furthermore, this was no ordinary clean mud like you were used to playing in as a kid. No siree, it was composed of dirt and crude oil with maybe just a little water thrown in for good measure. In spite of the oil, the stuff stuck like glue. I then asked, quite innocently, just where we would assemble the guns. The senior operator said, without emotion, "Where do you think? In the middle of that gunk, where else? Get those tool stands out there so we can begin." I hustled over and got the stands and placed them as directed.

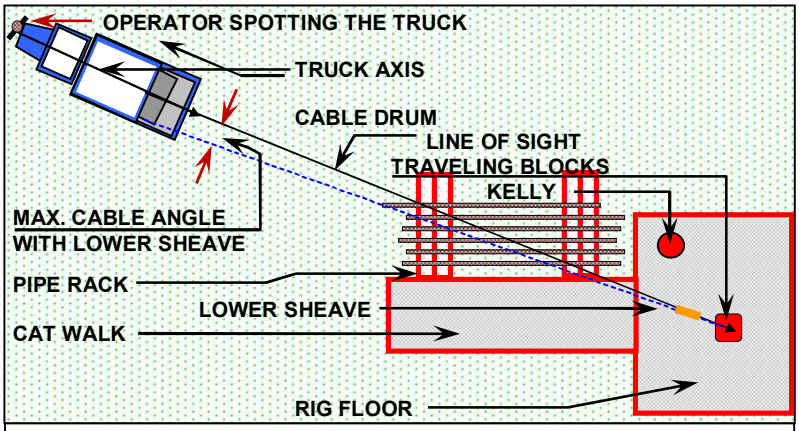

Figure 9-4 An illustration, which depicts the method of properly positioning a truck for servicing a well.

We had enough stands to assemble one pair of guns at a time or 4 stands total. I lined the four

up in the mud in a nice straight line just about the proper distance apart, (3 to 4 feet), and they (the two operators) motioned me over to help unload the guns from the truck. They said, considering the mud, the distance to the stands and the weight of the guns, all three of us should carry one gun at a time. That sounded reasonable because they were heavy and it was all a guy could do to maintain his footing. Next, I was instructed to get in the middle with one of them on either end. I was a little taller than either of them and I consequently stooped just a little to their height. We would carry two guns over to the stands, make them up (i.e. screw them together) to make a double and then lay the completed set to one side. This continued until all ten guns were prepared. By then, I was tired and my shoulder was sore.

Boy, were those guns heavy and the going was tough slogging our way through the mud. I almost went down a couple of times but the other two operators held the weight of the gun until I recovered. I was a little embarrassed but only because I didn't have the facts. Finally we were ready and we hooked the first set to the head while on the stands.

By then I was a stinking mess, having fallen in the mud more than once and if a clean spot existed on my coveralls, I used it to wipe my hands on.

A few minutes later Carter called out for us to pick up the first set and zero them at the well. That wasn't too tough but even then, when dragging the butt end of the tool string through the mud; it's a pain in the "butt". We used no BOP or riser because the wells were all pumpers in the area and we simply zeroed the top shot at the Braden head flange. Soon the string was being lowered into the well. Carter knew his business and he had the guns positioned before we could turn around, or so it seemed. He put the juice to it and BLOOEY, the explosion rocked the truck, the cable jumped and water and oil flew up in the air from the well. You see, at that depth 48 bullets being fired simultaneously make one heck of a bang.

With me in the middle, they would slack off a little so as to place the bulk of the weight on my shoulder and just take for themselves what I couldn't handle.

In another ten seconds, the winch was in high gear and he (Carter) was sucking the fired guns out of the hole. At 20,000 feet an hour it took less than 3 minutes to bring them to the surface. Naturally, I was chosen to help lay the guns down. I'm not sure what was worst, the slimy guns dripping with oil and water or trying to swing 400 pounds of gun and collar locator to a horizontal position to lay them on the stands while wading in 6 inches of goo. Though I almost fell, they let me carry out the operation. Soon we had the head off of the first set and coupled back on to the second.

The second set was picked up, zeroed and down the operator went with it to the bottom. The other operator, who was junior to the one on the winch, naturally, and I then set about breaking the spent guns apart so they could be loaded on the truck. We could get them apart and ready to load and, maybe, even one of them on the truck, before the next string was shot and waiting for us back at the surface. Those still laying on the stands had to be laid aside in the mud to make room for the next set. The process continued until all were shot and we were ready to rig down. By then I was a stinking mess, having fallen in the mud more than once and, if a clean spot existed on my coveralls, I used it to wipe my hands on. The actual job hadn't taken long but unloading, making the guns up, breaking them back down and reloading took plenty of time. I suppose we were on location 4 or 5 hours with the actual perforating requiring about an hour or so. About that time, Carter yelled out of the truck, "Let's spool her up and head for home". That was easy for him to say, he had only gotten his boots muddy moving to and from the car.

About then, all I could think of was: "What in the world have I gotten myself in to?" Even so, being brawny of back and weak of mind, I pushed ahead with the other two operators, rigging down first and then loading the truck back up. We could hardly find the remaining guns submerged in that goo. Luckily, it wasn't thick enough to completely cover them. In any case, we struggled once again picking those greasy monsters out of the mud and hauling them back to the truck, with me in the middle, naturally. Finally, we were done and we shed our coveralls in the back of the truck. The senior operator jumped in the car with Carter, the other one and I jumped in the truck and we headed for town. We stopped and got some dinner on the way back. Boy was I pooped, my back was about to break and my shoulder was like a boil. If ever I

came close to hanging it up with Schlumberger, it was that day. While eating, one of the guys said, "Obenchain, you look like you've had it". I admitted the same and remarked how tired my back was and the condition of my shoulder. Both the operators let out a loud roar and finally admitted that besides giving me the worst jobs on location, they also put most of the gun weight on me while carrying them to and from the truck. With me in the middle, they would slack off a little so as to place the bulk of the weight on my shoulder and just take for themselves what I couldn't handle. Boy, did they think that was funny.

We arrived back at the shop and, with my tail dragging we cleaned up the truck after putting the spent guns in the gun washing room. I had learned a lot including a real distaste for perforating, some tricks about how to handle equipment in a nasty situation and, most of all, to view my training operators with suspicion in everything they showed me or taught me to do. I staggered home bone tired still mulling over in my mind if I wanted to continue in this job. I finally concluded, the next day, that I would give it a little more time because of some better experiences the preceding week.

GENERAL OPERATOR DUTIES

The operator job is demanding in terms of hours, physical labor at times, driving the truck and developing a myriad of practical abilities such as electrical checks of cable and heads, understanding the mechanics of various devices including the truck and, of course, equipment preparation at the well site in addition to rigging up and down in a safe and efficient manner. Needless to say, many operators become very proficient in their jobs and a good one is a real asset, particularly to a young engineer. In two weeks of training, a new engineer only gains the bare rudiments of the operator's job. Experience is all-important and an engineer makes a serious mistake if he doesn't listen to an operator's ideas. They have learned in the school of hard knocks and had many practical suggestions. Thus, I was only getting an introduction to this part of the work even though their teaching methods were hardly university approved.

Even so, I quickly learned the necessary things to do in preparation for a job, i.e. checking supplies, gathering special items for non-routine jobs, being sure of well directions and coordination with the engineer. Preparing tools at the well site was straight forward. Rigging up and down with all the various precautions was somewhat more complicated. Where the rig draw works is involved, carelessness can bring both safety and equipment damage consequences. Thus, I was attentive. Cleaning up after a job at the rig and back at the barn were rather routine but important. Equipment can be left at a well site if one isn't careful and could require a special trip for retrieval of the same. At the barn (the vernacular for district office) the truck had to be fueled, washed and re-supplied with such things as fixer, developer, film, print paper, etc. The cable and head had to be checked, as well, for both continuity (no open wires) and insulation (no leaks to ground or armor) and of course, the dispatcher had to be notified that the unit was ready for the next job, which might come in at any time. The unit had to be ready for almost instant departure if we expected to keep our competitive status. The operators would go home, then and only then, for some well-deserved shuteye.

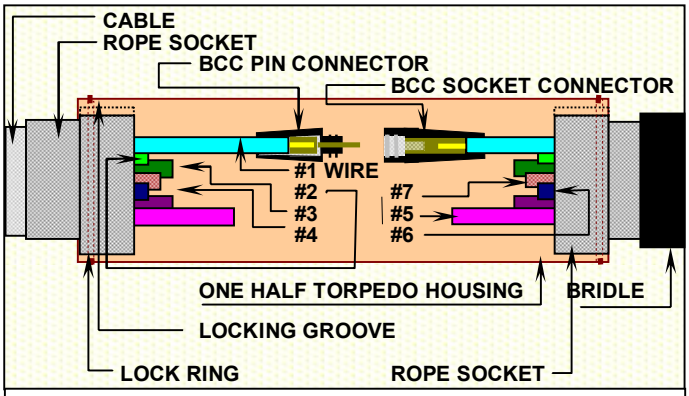

Figure 9-5 A drawing, illustrating the internal construction and principles of the split torpedo.

OPERATOR MAINTENANCE DUTIES

Besides the various duties associated with preparing for a job, making the same and cleaning up afterward, the operators also had certain maintenance duties associated with building and repairing various pieces of general logging equipment. Among the most common was repairing heads when they became defective and building both perforating heads and logging bridles.

In my early days with Schlumberger, maintaining good insulation on a logging bridle was a definite problem. Tool design in that area left something to be desired. It wasn't unusual to have to change bridles during a job, as insulation was

checked between runs in the well. Usually, two bridles would see us through a job and we counted it a real plus if no repairs to either were necessary back at the shop. I quickly learned how to isolate the problem to torpedo or head as well as the mechanics of repairing the same. Repairs in the torpedo were the most frequent and could vary from simply changing an electrical connector to completely rebuilding a rope socket. Though I made reference to the torpedo and rope sockets in chapter 6, I didn't really explain their construction. This seems like a good place to do so with the aid of figure 9-5.

The torpedo had to provide both the mechanical strength and the electrical insulation necessary to support the bridle and tool string while in a well. The rope socket modified the cable and bridle ends so they could be secured or held together by the torpedo housing. The electrical wires and connectors were protected from damage by the housing.

Keep in mind the interior of the housing was subjected to hot muds (300° F plus) and high pressures between 10,000 and 20,000 pounds.

Within that housing the 7 wires of the cable were connected to seven bridle wires by BCC connectors, which provided both electrical continuity and insulation from the well fluids. As you can see from the drawing, the pin simply snapped into the socket and the rubber insulation around them sealed out the well fluid. The pin and socket were crimped to the wires of the cable and bridle respectively and the boot (black rubber covering) slid over them preventing fluid migration at the connection or along the wire to which the connectors were crimped. The housing was composed of two pieces, which snapped together around the rope sockets while a key in either end of the split housing snapped into a groove in the rope sockets. This prevented the cable and or bridle from rotating within the housing and twisting the wires off. Lock rings snapped around both ends of the housing holding the two halves securely in place. When necessary, they could be quickly removed, the housing opened and a new bridle or head connected. The process was fast and efficient as long as no repairs were necessary. As you might suspect, most cable problems occurred within the torpedo even though it was well designed. Keep in mind the interior of the housing was subjected to hot muds (300° F plus) and high pressures between 10,000 and 20,000 pounds. You can appreciate the need to know how to properly build such a device and maintain the same. Such ability was gained by experience as well as by design procedures.

When I first went to work for Schlumberger, the torpedo was designed somewhat differently to do the same job. Building one and or maintaining it was more difficult and time consuming. The split torpedo, which I have illustrated in figure 9-5 is the later version and was significantly more reliable than the earlier variety. About the time it came into being, new bridle material was also introduced. The old bridle was simply a piece of cable with an eighty-foot rubber boot placed around it to isolate the armor from the well fluid. The newer variety was a special cable material with the steel cable on the inside and 10 wires twisted along its exterior and covered securely with a hard rubber or vinyl coating. The latter material protected the wires from external damage while operating in the well and the steel core provided the necessary strength for the load. This was the bridle system in use for 29 of my 31 years with Schlumberger.

I had a good background in electrical theory and practical application of the same. Making electrical checks of various kinds were no problem for me. However, the well environment was new and preparing the equipment for such conditions was totally different than anything I had experienced in the air force or anywhere else. I soon learned the methods of doing so and why the same was so important. Some of this came to my attention as I underwent operator training but I suppose most came later as I began field operations as an engineer. It included rebuilding heads of tools and guns as well as the various universal heads. The principles were all pretty much the same and I simply had to become acquainted with their individual idiosyncrasies. I was glad when the operator phase was completed and I could move on to the engineer phase of training.

ENGINEER TRAINING

A REVIEW OF AVAILABLE SERVICES

In 1955 when, I went to work, the variety of logging services was limited to an Electrical Survey, the Microlog Caliper log combination, a Gamma Ray Neutron log, the Continuous Dipmeter and the Section Gauge or caliper log designed for big holes, which was used to determine the cement volume required.

The electrical survey or ES, as it was called, was composed of a short normal (16" spacing), a long normal (64" spacing), a lateral curve (18' 8" spacing) and an SP curve. You should remember it from chapter seven. It, of course, was the basic resistivity log and was utilized for correlation (16" normal primarily) as well as resistivity and SP data for interpretation. The device contained no electronics and was quite reliable. It did involve a so called pulsator, a switching device which converted DC current into AC current and also provided the time sharing required so the three resistivity curves could be sequentially recorded. The major sources of problems with the device were leaks, loss of insulation, and both pulsator and SP noise.

The microlog caliper, also discussed in chapter seven, was the only real device we had for determining porosity. It also gave an indication of permeable zones. As you may remember, it provided a 2" normal curve and a 1½ inch inverse or lateral curve. The borehole caliper, run simultaneously with it, provided a continuous measurement of the borehole diameter and was useful for observing mud cake thickness and the size of bore hole wash outs or so-called cavings. Through some assumptions and various mud data, a value of porosity could be derived. When coupled with resistivity and SP data, one could calculate the water saturation of a sandstone formation, as well as its porosity. Though accuracy was limited, results were good and it was run on almost every trip to the well.

It did involve a so called pulsator, a switching device which converted DC current into AC current and also provided the time sharing required so the three resistivity curves could be sequentially recorded.

The section gauge was a three-arm caliper as, opposed to two arms of the microlog, and could measure hole diameters up to 36 inches. It was run primarily for cement volume calculations in larger holes such as a surface hole. It had limited use.

The gamma ray neutron was sometimes run in open hole for special purposes such as identifying a gas zone or in carbonate sections. Generally, in the gulf coast, its use was limited to cased-hole applications including a collar locator for later perforating depth control. Under the right conditions, the neutron could also provide a value of porosity. It was influenced by both borehole parameters and shale making it difficult to provide an accurate value, at least in the gulf coast. The neutron curve was a superb correlation curve and was used where sands were particularly shaley. Though it added cost, the correlation was more decisive than a gamma ray by itself and was frequently utilized for that purpose. Depth accuracy, when thin sands are involved, is of paramount importance.

The dipmeter was a specialty log run only where structural information was needed. Stratigraphic applications had not yet been developed. A new continuous recording dipmeter called a TDM or Teleclinometer Dip Meter, had just been introduced. It replaced the old station dipmeter, which several of the engineers I later worked with remembered running. When the TDM was run on a well, a special engineer came out along with a special operator. The engineer was responsible for operating the device and the operator maintained the tool as well as moving it from well to well via a small panel truck. Consequently, my experience at that time with the device was essentially nil. In fact, I never even saw the tool during my training period.

Sidewall cores, though not a logging tool, were run virtually every trip to the well. It wasn't unusual to take 50 or 60 samples after running the ES and microlog. Typical problems with core sampling were misfires due to bad igniters or cable leaks, lost bullets (pulled off in the hole), and getting stuck in the well. Operational technique required a high degree of skill in depth control as well as firing the bullets quickly and accurately. Shot depth records along with proper core labeling when they were retrieved was also essential.

TRAINING PROCEDURES

At that time, training consisted of the study of various technical papers regarding the services that were involved and the procedures in the operation manuals. Along with this, of course, was the practical or hands on training.

I began my training on the job by simply observing Carter Robinson as he set equipment up, made preliminary checks and generally assured himself that everything was hunky dory. You see, a smooth job was important to good customer relations. If a problem was to occur, it was much better found prior to the job and fixed without loss of rig time. Rig time was expensive

and poor service might very well cause the next well to go to a competitor. Schlumberger was definitely the number one wire line company in the world but the customers wanted to take care of the competition. They felt we needed it to keep us honest, so to speak, or doing our best. The pressure was always on us to run a trouble free job and, of course, it was to our advantage as well. One made better money per hour by getting on and off location as quickly as possible. Likewise, a happy customer makes life more pleasant. Thus, good pre-job preparation and an organized business-like approach to the job enabled us to stay ahead of our competitors.

PRE-JOB PREPARATION

When we arrived on location prior to a job, the first step was to check with the customer to be sure we understood his wishes correctly. If there had been a foul up in communications and we had only part of the proper equipment, we would still have time to correct the situation. He would also specify the sections he wanted logged, the film scales, how many prints, etc. Once that was done, we gathered all the pertinent data needed from the dog house including drillers TD (total depth), casing depth (usually surface casing but sometimes intermediate), KB to permanent depth datum distance (typically ground level or BHF, Braden Head Flange), mud properties and any hole problems that they may have experienced. The latter was best obtained by speaking with the driller on duty.

Next, I would set the ES circuit up on test and check for pulsator noise. It would affect log quality and could usually be eliminated through cleaning the pulsator collector rings.

Once the truck was in position, the operators unloaded and prepared their end of it as well as collected a mud sample. I was then taught to check certain critical items related to the equipment. We would check line insulation even though it had been checked back in the shop after the last job. Next, I would set the ES circuit up on test and check for pulsator noise. It would affect log quality and could usually be eliminated through cleaning the pulsator collector rings. Such a problem was frequent and I became an ace at eliminating it but, unfortunately, not permanently. Next came the measuring of mud properties, i.e. mud resistivity, mud filtrate resistivity and mud cake resistivity. A sample of mud, by now, had been in the press long enough to provide the filtrate and cake. Finally, time permitting, I would prepare film headings and make out service orders to the extent possible. In between the preceding activities, I might have spooled off cable for the operators so they could have all their equipment in position once the rig was ready for us. You see, because rig time was costly, Schlumberger did all they could to minimize their time involved and effectively reduce the total operation cost.

THE RIG IS READY

Once the last collar was tied off to the rig superstructure, the roughnecks would begin rigging us up under the operator's direction. Such is essential because said roughnecks are used to handling drill pipe and collars and have little understanding of the fragility or means by which our equipment could be damaged. Once the upper sheave is raised and the lower sheave tied off (as seen in figure 6-19, chapter 6), the engineer (grandpa that is) would pick the tool up and zero it in the rotary table. The table being one foot below the KB, I would set the depth meter on 1' and away I would go. An operator would check for the first mark with a portable detector and once found would have me lower it to the rotary table as well. I would write it down and then find the first truck mark or depth at which the truck bell rings. By that time an operator would be back at the truck and would take over the winch. I would then head back to the engineer's seat where, once more, I came under the scrutinizing eye of my trainer, Carter Robinson. He was a stickler for following every detail as he had laid them out. If I forgot one, you can be sure he didn't. However, he definitely taught me the rudiments of good operating procedure.

As I set up the ES log, i.e. calibrated it, and then switched to measure, Carter would be looking over my shoulder to be sure the readings were reasonable and the curves weren't noisy. Once satisfied he would sit quietly as long as nothing unusual occurred. At the bottom of surface pipe I had to set electrical zero's for all the curves; that is make the tool read zero resistivity in casing by shifting the galvanometers slightly. With that done I observed the mechanical zeros and was ready to go to bottom. As we went down with the tool, I kept observing it to be sure the tool didn't stop. If so the resistivity curves would become stationary. If all went well the operator dropped the tool quickly, at a speed of

20,000‘ feet per hour or so, until it came time to set up the final well mark. As I did so, Carter would observe while I went through the depth control procedures as described in chapter 6. If he was satisfied with my effort, I would have the operator tag bottom and we’d compare it with driller’s TD. It might be a little shallow due to borehole fill but generally we would agree rather closely. He would then watch as I had the operator tag bottom again, spool off about 20 feet of slack while I shut the recorder lights off and spooled up a little film to be sure we had unexposed film in front of the galvanometers. As I had the operator move the cable up slowly, I would flick the recorder on and record 5’ of mechanical zero, then off to turn tool power on and, finally, back on to record pick up or the point at which the tool begins to move. That establishes Schlumberger’s total depth. Once the tool was moving, the operator would raise the logging speed to 8,000’ per hour and I set the film exposure accordingly.

The SP was observed closely for noise and if problems occurred. We would try to clean it up before proceeding. Usually such a problem could be corrected by moving the ground return. Sometimes, however, nearby pump jacks or some rig power source might have to be shut down to eliminate it. Many are the sources of SP noise and many hours have been spent correcting the same. Sometimes we had to settle for something less than perfect but we always attempted to eliminate such noise.

As I had the operator move the cable up slowly, I would flick the recorder on and record 5’ of mechanical zero, then off to turn tool power on and, finally, back on to record pick up or the point at which the tool begins to move.

Once everything was purring like a kitty, I could sit back and watch the recorder. If film headings weren’t done yet, I could work on them. We always stayed busy as long as there was something productive we could do. Of course, I had to keep my eye on the recorder to be sure no unexpected problems cropped up such as the tool sticking, noise occurring or the film quitting to move. There was never a dull moment and in training I was constantly trying to figure out what I needed to do next. You see, Carter would watch me and if I appeared too comfortable he would say something like, “are your headings complete?” or maybe, “what did that sand look like at 8125’?” I tried to anticipate his questions but he managed to have more than I could visualize from my limited experience. Frankly, he made me nervous as a cat treed by a pack of dogs and, particularly so, when the tool was coming off bottom. He’d say, “Did you roll up plenty of film? Or; maybe “Did you get those lights off when you turned the current on? Or any number of things. I guess I wasn’t moving as fast or as efficiently as he would and I’d only get worse with his constant barrage of questions and comments.

Frankly, he made me nervous as a cat treed by a pack of dogs and, particularly so, when the tool was coming off bottom.

Well, I lived though it and he really was a good training engineer. He was conscientious and so was I. I wanted his approval and did my best to earn it but if I did, he never made it too apparent. I don’t remember receiving too many complements, in fact, maybe none but I guess I did OK. He told the district manager, Ralph Clennon, I was ready to break out after three months, which was 1 month ahead of schedule. I don’t know how that timing compared to the average but I was satisfied. In fact, I was delighted to finally be on my own.

On a given well the microlog would be run next and then, in most cases, sidewall cores would be taken. As I mastered one tool, Carter would let me start on the next, always carefully explaining the principles and the precautions involved. These would involve depth control, procedures for efficient operation and safety. I won’t trouble you with such procedures but will mention a couple of experiences.

SPECIAL TRAINING EXPERIENCES

NEVER RUN A LOG ON TEST

I don’t remember exactly when this particular event occurred but it was fairly early in my training. We had been dispatched to run an ES and microlog on a shallow well just north of Beaumont near an old salt dome. The well was only 1000’ deep and we didn’t have much time to check things out prior to rigging up. Before I knew it they were ready for us and the tool was being picked up with Carter at the winch. As he lowered it into the hole I quickly checked the circuits on test position to see if there was any pulsator noise. None was apparent and as the tool went down-hole I said, “boy these resistivities are high”. Carter replied, “they will be on these shallow wells because the formation waters

aren't very salty and then stepped out of the truck. By then the tool was on bottom and, as usual, he had been urging me to get things going. I switched the resistivity scale from 20 to 10 because it was on the former for the test setup. Somehow I failed to switch from test to log and as we brought the tool off bottom I thought, "**B**oy this is screwy looking". There was galvanometer movement but the readings were all about 8 to 10 ohms or near full scale. I was puzzling over that when all at once I saw that test switch in the wrong position. I said, "My gosh; I left it on test position. Shut her down and go back to bottom". Carter was out talking to the customer while this was going on and when he saw the tool going back down, he immediately came to investigate. When I explained what I had done, he said, "Never run a log on test, Obenchain. They just won't sell no matter how good the resistivity looks." I found out then that he did have his lighter side even though he was all business when it came to getting the job done. I learned to appreciate both of these aspects and their appropriate times for expression.

ALWAYS SELECT THE PROPER SCALE

Another time I was well along with my training and had become rather confident unless, of course, Carter was next to me asking questions. He pretty well left me alone and simply waited for the finished product, which he, more often than not, developed so he could examine it and be sure all was well. This was a rather average well of maybe 5000'. He had been out of the truck and came back in as we finished the 5" film or detail. Typically, we would run that scale over the zones of interest and either 1" per 100' or 2" per 100' on up to casing. He decided to develop the film and took the 5" into the dark room. About that time I looked over and saw the resistivity scale sitting on 20 ohms instead of the required 10. I quietly said to the winch operator, "head back for bottom, I blew it", as I switched over to ten ohms. I don't believe we had dropped more than a hundred feet when Carter said, "Obenchain, are you sure this isn't a 20 ohm scale?" I retorted, "No, but I'm sure it is. We are headed back to re-log it". I don't remember his comment but there seemed to be a little disgust tone in his voice. We quickly reran the log and he seemed a little more satisfied with my second attempt. Of course, Carter wasn't one to complement you, as I remember; so I didn't expect any congratulations.

Needless to say, I ran the log all the way to casing (the casing shoe was at 100') and I clearly identified it on the print in big bold letters, as was our routine.

DON'T LOG MORE THAN THE CUSTOMER ORDERS

Towards the end of my training, we were down in Orange Co., Texas logging a well for an independent oilman. Carter did most of the conversing with the customer and I simply set up the truck and ran the logs. Anyway, it seems this guy had run a little less casing than required by Texas law and didn't want the casing shoe depth revealed on the logs. We were to run the ES from TD up to 800 feet and shut it off. He specifically mentioned it to Carter who forgot to tell me. Needless to say, I ran the log all the way to casing (the casing shoe was at 100') and I clearly identified it on the print in big bold letters, as was our routine. Carter about flipped when he took the prints to the customer. We, naturally, had to cut the top 500' off the film and reprint the logs. Of course, we had no obligation to log any more than we were told to. The operator's decision to set less surface casing than required was strictly between him and the state of Texas but I must admit, 'twas a bit embarrassing. In fact, it was a little like waving a red flag in front of a bull.

ALWAYS ADJUST AND CHECK FOR CABLE CREEP

Back in chapter 6, I discussed cable stretch and its effect on depth measurements. This story is an example of that particular technical problem. When a core is shot the gun is stationary. Logging tools, on the other hand, are always moving and once a secondary service is tied into the primary log, the ES, only occasional adjustments have to be made to keep it on depth. However, when sidewall cores are taken, the tie in is made while moving and then the tool is stopped to sample. Drag on a moving tool, whether it be from bullets already shot, a sticky hole or any other reason, increases the tension on the cable and hence the stretch. When the winch quits rotating, cable tension decreases as tool drag drops and the tool comes to rest. Of course, the stretch decreases as well and the tool creeps up hole another foot or two and is known as cable creep.

Consequently, if an engineer watches the SP curve, our tie in for cores, he will notice continued movement after the tool stops while the cable is relaxing. This phenomenon causes any device to move an additional foot or so

when it is brought to a stop. The exact amount of creep varies with the amount of drag and thus borehole condition and/or tool diameter, etc as mentioned earlier. As a result, the true depth of any device which samples or records data when stationary will be shallower than it appears to be from a signal, recorded as a tie in while moving, unless appropriate correction has been made. This principle became very clear to me this day.

I had completed the ES and ML without a problem of any kind and had gone in with a core gun with thirty shots, a CST-C. Very dutifully, I tied in, checked for cable creek and made the necessary correction. I then began sampling and checked tie in intermittently as we moved significant distances up hole. We made a couple of gun runs without incident. All seemed well too but things changed at the surface. With the tool on the bank (rig floor), we began bottling the cores for the customer. Carter looked at each core as it was put in the bottle and described the same on the core recovery record. He noticed several cores appeared to be shale rather than sand and quickly checked the log to be sure they were properly picked. They were and so he began quizzing me about my depth control including tie in, cable creep, correcting for the varying depth of bullets in the gun and then said, “Obenchain, you shot these cores off depth. I don’t know how because it appears you did everything right but the cores aren’t from the zones picked from the log”.

Regardless of what the reason was, we had to resample them again, about 10 cores, on the next trip in the hole. We hooked on another gun and went back down to sampling depth. With Carter looking on, I went through all standard procedures and shot same depths again. We also completed the remainder of the cores ordered by the customer. The gun was sucked out of the hole and sure enough the cores from that section were mostly sand with some thin shale laminations. He was then satisfied, as was the customer and I.

I’m not sure where I messed up but I suspect it was from increasing drag as I shot the last 10 shots of the gun. The first bullets shot and recovered hang down along-side the gun and increase its diameter, hence drag. The zones I was shooting were very thin, in the order of a foot or two with shale streaks in between and increasing stretch could easily change the gun depth an extra foot. (See figure 9-6 as an example). We always double checked our tie in and drag if we moved up the hole a couple hundred feet but these cores were taken close together. I should have checked for extra drag before shooting the last half of the gun. I learned a lesson, which I never repeated. In fact, I became an expert in checking and correcting for cable creep and could place a bullet in a one-foot stringer at ten thousand feet along with the best of them.

OF RATTLESNAKES AND RACCOONS

In 1955 steam rigs were still quite popular. The boilers were fired by gas and the resulting steam powered several engines in tandem, which provided the necessary rig lifting power. One or all could be utilized at any given time through a power transfer system. The engines were huge and, in general, more powerful than a diesel engine of that era. Because of their immense size and the cost of moving such a rig, however, the steam rig was gradually phased out as the diesel-powered rigs became more popular. The next two stories took place on such a rig. They occurred on the same job in September of ‘55.

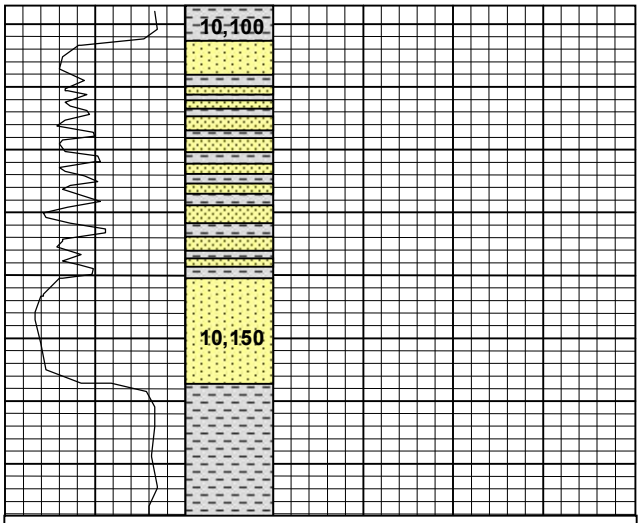

Figure 9-6 A laminated shaley sand body, illustrating the difficulty of accurately sampling each sand stringer due to cable creep.

THE SNAKE

We were dispatched to a location being drilled with a steam rig near Winnie in Jefferson County, southwest of Beaumont. See figure 9-1. It was a typical boarded location in the middle of a rice field with a board road leading in. The truck had arrived before us and the operators were changing into their coveralls. About the time we pulled onto the ramp surrounding the rig, Carter spotted a dead rattlesnake lying there

between the boards. As he stopped the car, he ran over, picked it up and hid it behind him as he approached the truck. One of the guys was in the act of slipping on his coveralls as he approached. At about five feet he quickly swung the snake around to the front and made a perfect basket in the pant leg the operator had just settled a leg into. A scream followed and that guy came out of his coveralls faster than I did in my fire dance in Whitehawk Basin. Man, was he scared. Dead or not, he wanted no part of such a creature. Well, we all had a good laugh including the victim, as we settled in for the job. I was pretty well trained by then, at least in the ordinary services and Carter observed the operation while I went about my duties. Such snakes were quite common in Texas. However, we then ran across a cute little fellow, which I deemed was worth a paragraph.

A CAPRICIOUS, CURIOUS, CRAFTY, CLIMBING COON

I no sooner began collecting well data than I realized we had a visitor at the truck. The

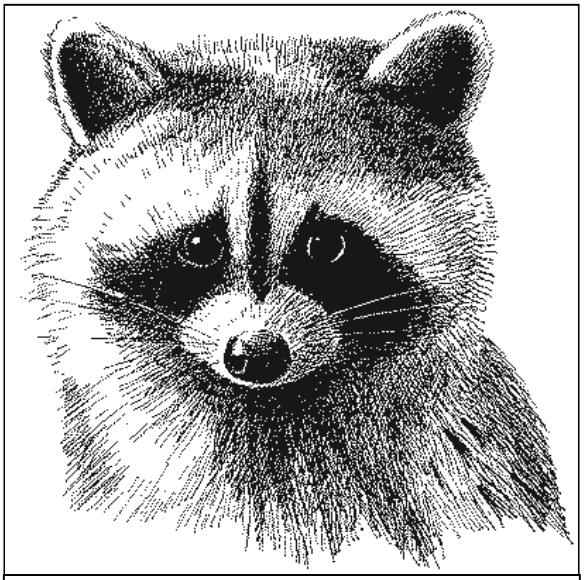

Figure 9-7 A reasonable facsimile of the little fella we had to deal at the steam rig.

rough-necks had obtained a pet raccoon that had been given the run of the location. He felt a personal need to investigate anything and anything that went on around location. He climbed all over the truck checking every little cranny for food. When satisfied we had nothing to offer, he went back to the rig. Soon I saw him climbing around the sub structure and before long he headed up the derrick. I watched as he went all the way to the top. After spending a little time looking over the grand state of Texas, he decided to come back down. Heights didn't bother him, he just headed down the ladder head first like you or I would head down stairs. He was right at home anywhere on that rig.

We went about our work and ran the two logs, i.e. the usual ES and ML. The client picked some core points so we rigged up a gun and headed back in the hole. We shot about 20 cores out of a 30 shot gun and brought it back to the surface. Core guns are never washed down until after the cores are recovered to prevent their contamination with fresh water. We laid the gun down on the rig floor and began cutting the retaining cables for the recovered cores. As each bullet is cut loose, the cables or fasteners are unscrewed and the bullets placed in a special core box with numbered slots to preserve their identity. As we were doing this, the raccoon came over and begin investigating the bullets that weren't shot, 10 in all. They were full of thick mud from being in the well. He would reach his little paw down into the bullet, which is about an inch in diameter and pull out a hand full of gelled mud. He would then sort through it with the other paw very carefully to see if there was anything he wanted in it. When satisfied there was nothing of value to him, he would go to the next bullet and by the time we were done, he had cleaned out the other 10 bullets. He then followed us to the truck and as the operators pressed the core samples out of the bullets and placed them in numbered jars, he would check the empty bullets again to verify they also held nothing of value for a capricious, curious, crafty, climbing coon. After all, he had to live up to his name. Once satisfied, he was off to see what else there was of interest nearby.

We finished up the job and rigged down. I gave the prints to the customer along with the cores and Carter went over to the car. He had left a window down to keep the inside a little cooler. As he opened the door to toss in his brief case, something jumped up on the back of the seat and scared the living daylights out of him. You guessed it; there was that curious coon involved in another of his capricious investigations. He had missed the car earlier and apparently decided he better check it out before we left. Finding an open window that provided easy entrance for one as enterprising as he was, he began his forage through the articles Carter had in the car. We left location discussing the antics of that little fella. He had turned a rather normal job into one with a touch of curiosity and excitement; kind of making our day.

A SEVEN BAGGER ON DOUBLE BUBBLE DAY

Schlumberger had the policy that bonuses would be doubled on any holiday recognized by the company. I was pretty well along in my training when the first such occurrence came up. As I remember the incident, we had been on a pretty routine job that day calling for an ES, ML and cores. Having run those on double bonus day, Carter and the two operators each had their bonuses doubled, which was OK but not really great. I received none as a trainee and my mouth kind of watered when I anticipated my own payment of that kind after break out.

We finished in the afternoon and had stopped to eat dinner at the nearest town. Carter called in by telephone because we were out of radio range. Soon he came back to the table and explained we had another job nearby. It called for an ES, ML, GRN and sidewall cores and was a second run on the well. They were to be ready by 7:00 PM. We ate a hurried meal and hit the road for our second well that day. All those guys could see were $$$ signs in front of their eyes as we made a beeline for the well.

By this time, the whole operation was pretty well on my shoulders. That is, Carter watched and made sure everything was being done in order and correctly but he let me have the lead. The operators, wanting to get as many services in that day as possible, rigged up quickly and I had things checked out in the same time. The well was relatively deep, about 10,000 feet, but this was the second run and there was only 4,000 feet to log. We were going in the hole with the ES just a little after seven. Carter kept nudging me, here and there a little to make sure I didn't waste any time. After completing the ES and verifying the film, the tool was sucked out of the hole in high gear. In a matter of minutes, we were headed back down with the ML. Having only a couple of thousand feet to log, we were back on the surface hooking up the GRN by 10:00. It too, was only run over a couple thousand feet of hole and was completed quickly with the tool being washed down by 11:30. Because lady luck had smiled on us and everything went smoothly, we completed the three logs in record time (for me) and were on the way in with the first core gun just before midnight. That meant all four services qualified for double bonuses. The last service begun on double bonus day qualified for the premium pay even though it might not be completed until the following day. Well, we made several CST runs and sold a bunch of cores, which was lucrative in and of itself but double bonus, WOW!

We ate a hurried meal and hit the road for our second well that day. All those guys could see were $$$ signs in front of their eyes as we made a beeline for the well.

We were rigging down by 5:00 AM: tired but happy with a second good job for the day under our belts. Of course, Carter and the operators kept reminding me of their monster bonuses, which, to me, were really a treasure horde. All I could think of was, "I can't wait until my turn comes". We met back at the restaurant where we had eaten supper the previous night and settled down to a deluxe breakfast. While eating Carter said, "I think Obenchain should buy considering his two successful jobs today, don't you?" Of course, both the operators chimed in with, "you bet, anyone that lucky needs to show his appreciation" and then they tried to convince me that such a practice was tradition in Schlumberger. I wasn't sure how serious they were and began mulling over in my mind whether I had enough cash on hand. I wondered what kind of tradition that was, considering I made nothing and they had really collected. I guess Carter saw the look of concern on my face because he soon agreed to do the buying himself. Naturally, that offer was followed by a big laugh from him and the operators as they saw the look of concern disappear. "We really had you going, didn't we?" they chortled. I came back with, "I suppose so but, you know, I really ought to charge you guys for the amusement I've been providing you. Don't you think so?" They decided it was better just to call it square.

A ROMAN CANDLE

Somewhere in this time frame I was able to see the results of a well blowing out of control and burning. The site was to the west of Beaumont, according to my recollection of 45 years ago (ugh, that's a long time), and was near the main highway leading to Houston. When we arrived, it had been burning for some time and the Adair fire fighters were on site. Whether Red Adair was there in person or not, I couldn't say. I suspect he was, in that his fame to the general public came sometime after that. In any case, we watched for a while and were able to get within a hundred yards or so of the well. They didn't need to hold us or anyone else back

for safety's sake. The heat was so intense that it set the limit to which we could approach and became an automatic barrier. I stood there in awe for several minutes, having never seen anything of that nature.

I remember they had already dragged most of the melted rig structure away from the wellhead and it stood, or should I say laid, to one side maybe fifty feet or so. There was still some steel around the wellhead and they were moving in close with heat shields trying to cut it loose and drag it off. Streams of water were being sprayed on the collapsed steel to help cool it. I wondered why they were going to all that trouble before snuffing out the blaze, not realizing the presence of such hot metal would simply re-ignite the flame if it were extinguished. In fact, at that point in my career, I had never even thought of such a blowout and hadn't considered the requirements for putting such a fire out and then capping the well. It was only later that I realized the problems in such an operation.

From the movie of Red Adair's exploits, most people now know the general approach to such an operation which includes first moving all metal away to prevent re-ignition and then depriving the well of oxygen by setting off a nitroglycerin charge. The charge is moved into place right above the wellhead with a crane before being set off. Once in place, it is fired and snuffs out the blaze. During that process, as I remember, a stream of water is being continuously sprayed on the wellhead to help cool the remaining metal. With the blaze out and, I assume, the metal cool enough to minimize the chances of re-ignition, the well is then capped with an open valve which, when safely in place, can be shut off to finally bring the well under control. Needless to say, it's a risky and costly operation whose players pretty well name their-own price.

Of course, my being able to witness this display of energy gave me an appreciation for Mother Nature, which I had never had before. Take a moment to mentally visualize and feel the heat coming from the fire in figure 9-8. What an experience for a young field engineer! It certainly made me more conscious of the need for proper wellhead control during Schlumberger operations at the well site. I'll guarantee you I wouldn't want to be responsible for or involved in such an incident. The associated cost is astronomical because of the danger involved and the loss of time and equipment.

OFF SHORE EXPERIENCES

During my training period, Beaumont had one offshore rig drilling in the Gulf of Mexico a ways out from Sabine Pass. There's a town by that name south east of Beaumont (see figure 9-1), which derived its name from the Sabine River's mouth or opening into the gulf which is termed a pass. It wasn't very far out, maybe 20 miles or so. I made a couple of jobs out there with Carter while training. We would load on to a workboat at the town of Sabine Pass and go down river to the gulf and then out to the rig. The trip took

Figure 9-8 A photo of an oil well fire which appears much like the one I observed west of Beaumont, Texas.

several hours as I remember. The boat was slow and the navigation somewhat precarious until they cleared the mouth of the river. Once at the rig, we would hoist the tools up on the platform and then climb up ourselves. To get from boat to rig we had to grab a rope and swing to a landing a few feet away. Getting back was a little trickier because we had to judge the up and down motion of the boat or we'd land on our cans. Of course, OSHA wouldn't stand for that today. The boat ride going home was a reversal of procedures. Though I never got sea sick, I determined I wasn't really cut out for a life on the high seas.

INTRODUCTION TO THE SONIC TOOL

The rig at that time was drilling for Mobile Oil Corporation. On the first trip I made out there, Mobile wanted to run an experimental tool of theirs along with the normal services. The off shore unit, at that time, consisted of a small recording cab for the recorder and panels and a separate winch skid. The latter had no protection from the elements other than a small canvas top to shed a little rain. As I remember, Carter ran the services with no problem and then we hooked on to the experimental tool. It had a rather normal looking cartridge 3 5/8" in diameter with a weird looking sonde. The sonde was made of rubber and contained the transmitter and receiver. The device had to be centralized in the hole. The tool had to be lowered very carefully into the well to prevent damage to the sonde. The Mobile engineer wouldn't discuss the tool with us but did mention a few applications for its measurements. I was so new, the whole thing didn't mean much to me but the soft rubber sonde seemed extremely impractical. Later I found out that the rubber had a slower velocity for sound transmission than did the mud in the hole, which was essential in making the device work. Schlumberger later contracted with Mobile to develop their own tool and made various improvements over the years including a metal cased sonde as well as multiple receivers. If you had the grit to struggle through chapter 7, you may remember some of the discussion regarding the various logging devices there.

A UNIQUE CABLE MEASURING EXPERIENCE

In 1955 and for several years after, cables had to be marked on land before being sent off shore. That was fine as long as the marks were preserved and the cable wasn't out so long that the calibration became inaccurate. In this case, the latter had occurred and by my second trip out with Carter the cable was known to be inaccurate. Changing out the cable was a tremendous expense as well as a lot of work. Between Carter and Ralph Clennon, I guess, they devised a plan to measure the cable on location. It wouldn't be quite standard procedure but it would be a vast improvement over the present situation. Out we went to the rig and I observed, primarily, while the operators and rig crew set the equipment up under Carter's direction. I thought the whole idea was quite ingenious and have consequently illustrated it in figure 9-9. Let me describe what was done according to my recollection.

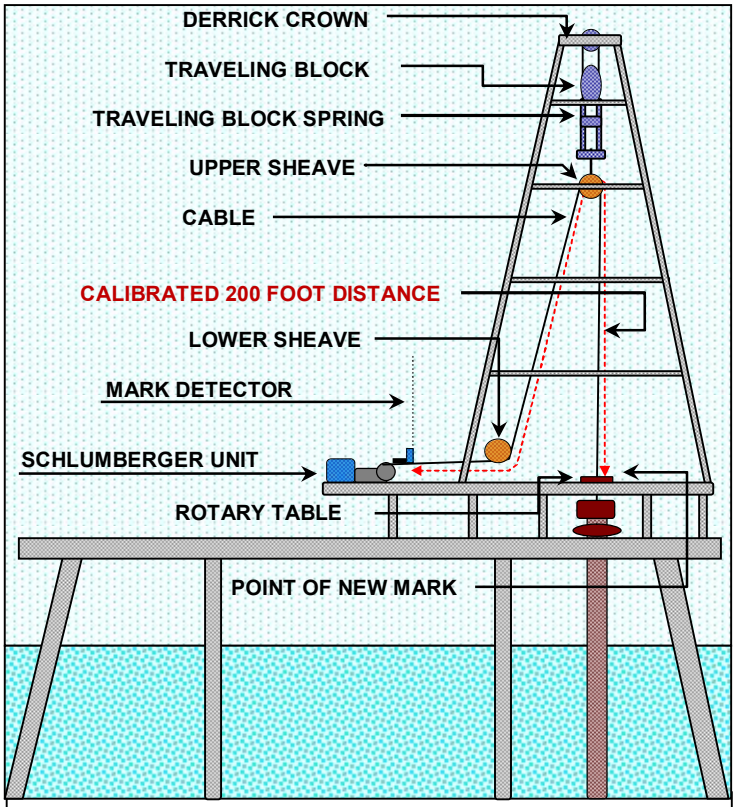

Figure 9-9 An illustration of the method Carter devised to measure a cable at an off-shore rig.

The well had been drilled to total depth or about 12,000 feet. Because the cable had not been in a hole to that depth, the marks were still accurate 12,000 feet from the cable head or 12,000 feet into the spooled cable. The cable stretch or error was between marks in that portion of cable, which had been used most frequently. Consequently, the marks near

12,000 feet were to be used as the standard for this marking job.

We rigged up in a normal fashion and ran the ES tool to bottom using the existing marks. At that point, a mark was caught at the Schlumberger unit and placed directly under the mark detector. The distance via the logging cable to the rotary table was something more than 200 feet. A mark somewhat higher than the rotary table or above it was detected and the blocks were then lowered until that mark was even with the rotary. Knowing the cable marks were accurate at this point on the cable, Carter knew he had accurately adjusted the distance between the Schlumberger unit and the rotary table to 200 feet. Old marks had been wiped clean from the cable except for the last few while going in the hole. These would be replaced as we came out of the hole.

Now, all that was left was to place the new marks on the cable. Well, actually there was one more fly in the ointment. The traveling block has a large spring in it, which is stretched about a foot with more than 2 or 3 thousand pounds of weight in the elevators. When a stand of pipe is broken loose from the down-hole string the spring is strong enough to lift it (the stand) out of the box to which it had been coupled so it could be quickly and efficiently set aside. Allowing the spring to collapse as the tool was brought nearer the surface would change the 200 foot calibrated distance a matter of 2 feet or so. To prevent this Carter had the rig crew place a piece of 2 x 4 in the space created by the expanded spring. This prevented its collapse near the surface and the 200-foot ruler remained accurate.

He remarked, "Pulsators hardly ever, if ever, short out Obenchain, are you sure?"

With everything in place, a yellow mark was placed on top of the magnetic mark at the well to make it visible. The winch operator then brought the tool up hole stopping the yellow mark directly under the unit mark detector. A new yellow mark was placed on the cable at the rotary table or exactly 200 feet away. That mark was then raised up a couple of feet and the operator then placed a magnetic mark on the yellow mark. That mark was then brought to the unit mark detector and the process was repeated. Though it was slow getting started, the system worked well and in a couple of hours Schlumberger had a freshly calibrated cable with 200-foot marks on it rather than the normal 100-foot marks. I'm not sure how interesting that was to you yunguns but it demonstrated some ingenuity on the part of Carter, a characteristic quite common in Schlumberger engineers. I thought it was a neat solution to a real problem. Of course, the automatic marker discussed in chapter 6 eliminated the need for such marking when it finally came along. The primary purpose of the device was to solve the offshore problem.

MURPHY RIDES AGAIN

I was approaching three months with Schlumberger when Carter decided I should make a job on my own. Then he could recommend me as being ready to break out as an engineer. That suited me fine because, I felt competent in all the various open-hole services. In a day or so, I got my chance and we headed west of Beaumont about 20 miles to run the standard ES, ML and cores. It was, however, a 6 1/8 inch hole, which added a coring challenge as you shall see.

We arrived on site in plenty of time and I quickly checked out the system. Everything seemed OK until I turned on the power to the test circuit. The current meter pegged and I knew I had a problem. After double-checking everything, I tried again with the same results. I knew there must be a short circuit somewhere and began trying to isolate it with the Simpson meter, that is, a volt ohmmeter. Soon I was down to the pulsator and sure enough, the meter registered a dead short between the two current rings. I tried to clean it up but to no avail and was soon on the radio describing the problem to Dave Tinch, another engineer. He remarked, "Pulsators hardly ever, if ever, short out Obenchain, are you sure?" I reviewed my checks with him and he agreed they seemed reasonable. He then said, "I don't see how that can be, it seldom happens but I'm on my way with a spare. I don't have any better solution to offer." He arrived in about a half hour and, after confirming my checks, had me install the second one. It worked fine and I went through the usual required checks. Needless to say, I was pleased with my success in defining the problem. About that time the rig was ready and the operators began the rig up process.

I ran the ES and ML with no more trouble but the sidewall core operation was stressful. The equipment worked fine but the bullets were extra stubborn, or so it seemed. I had to work several cores loose by first pulling up to about 1000

pounds above line weight and then dropping down just below firing depth. That worked fine for a while and was normal operating procedure but after several cores were shot the bullets began to ball up around the gun and we had to struggle to get it to come free after each core. That 6 1/8th" hole didn't provide enough space for the loose cores to fall back down below the gun each time we moved back up-hole. I was a bundle of nerves by the time we came out of the hole fearing we wouldn't get the gun free and I would be in for my first fishing job. I certainly didn't want that experience at that point in my career. Summing the job up, I learned that day that Murphy really does exist. If anything can go wrong, it indeed will, and particularly on a new engineer's first job.

PROMOTION TO JUNIOR FIELD ENGINEER

Apparently, I passed the test, successfully making a job on my own that is, in spite of the stress filled experience that I had had. The district manager notified the division office of my status and they set up an oral test date the next week. Once that hurdle was accomplished, I knew I would be given a company car, my own materials for carrying out my duties, a transfer to some other location and, best of all, a raise in pay to $300 per month as well as my own bonuses. Wow, was I looking forward to that! I did a little crash studying for the expected grilling that I would undergo by the division staff. It would consist of everything from well procedure through equipment theory to log interpretation. I was a little nervous about the expected test but still felt confident.

The big day arrived and I was taken into Houston, about 90 miles, or so, by someone. It was either the manager (Ralph Clennon) or Carter Robinson. Obviously, I don't remember but it was standard procedure for someone to accompany the new engineer for such an event. Guy Sullaway (Division Sales Manager), the Division Supervisor (Paul something or other) who was responsible for all cars and trucks, Frank Eastman, the Division Engineer and, I believe, the Division Manager, Mr. Roberts, sat in as my judges. I'm glad I'm not being tested on last names at this point. It seemed everything went well. I soon got over my nervousness and felt comfortable with the questions regardless of category. The test lasted about half a day and soon I was given the official promotion to JFE or Junior Field Engineer. I was told to report to Wharton, Texas the following week. Finally, I would be making some real money. What a welcome change that would be for Esther and I.

From there, I was accompanied to the Division Center where the Division Supervisor gave me the keys to my first company car, a 1955 Ford. It was used but near new having been previously issued to a Joe Pozza who had resigned. Next I was issued all his written material as well, which included an operations manual for basic services and a GRN manual for radiation services. I never met the man but he must have been somewhat of a character from the comments I received later as others learned that I had his materials and car. For a while they referred to me as Joe or maybe Pozz. Next, it was back to Beaumont to Esther and the two girls. We were elated and, Of course, we had to take a ride in our first car. I had never owned a car of my own and Esther had suffered through the inconveniences of shopping by bus or on foot since we were married some 41/2 years earlier. She didn't seem to mind though and never complained about our situation. Being a good wife and mother was her main concern. She was a "stay-at-home-mom". Her house was her castle and she was happy in that role. Her attitude was comforting to both the girls and I. Esther was a homemaker supreme, bar none.

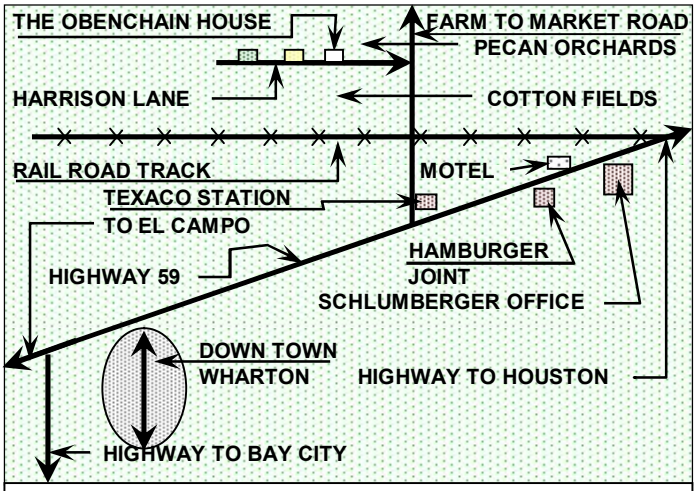

Figure 9-10 Wharton, Texas and landmarks when Esther and I moved in on Harrison Lane in 1955.

TRANSFER TO WHARTON, TEXAS

The next day we (the whole family) were off to Wharton, which was located about 60 miles to the southwest of Houston. The trip was, maybe, a couple of hundred miles total counting the

distance through Houston. Of course, freeways, bypasses and such existed only in the urban planner's imagination. I don't remember the details or exactly when we arrived but I do remember checking into a small local motel, which only had the basics of beds and indoor plumbing. It was right alongside highway 59 as one might expect. Even though TV was available (black and white), it was still a luxury and I couldn't afford it so, we went without.

The next morning I left Esther and the family at the motel and went to the local Schlumberger office where I met the location or district manager, a man by the name of "Mac" McCullough. He was really a big guy, not quite my height but easily two times my weight of 190 pounds. He was very friendly and put me at ease quickly. He described the town layout, gave me some ideas on where to look for housing and even helped me secure a small loan at the local bank. Esther and I were strapped financially and had no money for the first month's rent let alone the purchase of the furniture we would need.

SECURING LIVING QUARTERS

That afternoon we began looking for furnished apartments or a furnished house. There were none and by evening we were really downcast, not knowing exactly where to go next. Wharton was a small town and the rental market was limited. The next day, I talked to Mac and he said he wasn't surprised. There were some unfurnished houses around, however, and he felt I could easily get credit for furniture if I cared to. Armed with that encouragement, I went back to the motel and we began perusing the want-ads for unfurnished houses. That didn't take too long. You see, Wharton did have a newspaper, about two pages thick. Well, maybe I'm exaggerating just a little bit.

We spent the rest of the morning looking at two or three places and finally came across one we both really liked on Harrison Lane on the north side of Wharton. I've included a simple map to portray the layout of the big city of Wharton and the location of our new home in figure 9-10. Additionally, I have included a floor plan of the home, itself, which we thoroughly enjoyed while living there as figure 9-11. I suppose, it was in this house where we began to feel somewhat financially secure for the first time in our married life. We could actually pay the rent, our various bills and put decent food on the table without a big juggling act. In fact we even bought a TV (black & white) a little later. We began to act just like the rich folks did. Was that ever nice? Of course, we now had a problem, i.e. a nice house, in our opinion, but nothing to go in it except a washing machine and a single bed we had bought for Valerie just after Celeste was born. Ah hah, but now we had credit, something I had never experienced before. I was now gainfully employed by a respected company whose name seemed like magic.

OUR FIRST EVER SHOPPING SPREE

Well, I took Mac at his word and decided to go to Houston and do a little shopping because there were no stores of any size in Wharton. We took off for the big city armed with nothing more than the Schlumberger name, Mac McCullough as a reference and our good looks. You might remember that my good looks only bought a washboard in Biloxi. Of course, Esther's helped.

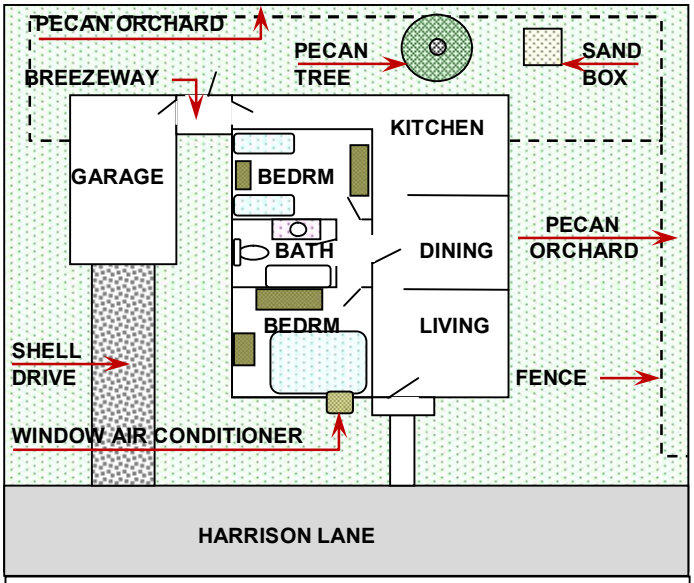

Figure 9-11 A simplified drawing of our home on Harrison Lane (Wharton, TX. Nov.1955 to Nov. 1957)

First we stopped at Finger Furniture, a big Houston chain. We set up a line of credit so easily that I could hardly believe it. All I had to say was, "I'm and engineer and I work for Schlumberger". Man was that magic. People seemed to fall all over us rather than showing us politely to the door, as had been our experience in Biloxi. Soon we had picked out a bed for Celeste, as well as one for Esther and me. Next we bought a living room set, an extra chair or two and a kitchenette set, which consisted of a table and four chairs. We then added the

necessary bed linens and even looked at the dining room sets. I feel sure they would have sold us one but my nerves were about to crack. We hadn't yet shopped for a stove and refrigerator, which in those days would be another $600 bucks or so, and I had a bill approaching $2000. So Esther and I decided to wait for a while until we could see just where we were financially". We told the salesman that would be it for now. He was very polite and made me feel like I had money instead of credit, a nice experience, indeed after the air force.

He then took us over to the register, rang the whole thing up and all I had to do was sign the bill. Although I was flattered, I didn't want to be flattened and wondered if we could make ends meet. I felt sure I would be making $300 in bonuses a month as well as $300 in salary. Even so, we still had to buy the two appliances. Fingers assured us they could deliver the furniture the next day and off we went to Sears.

The Sears experience was just as pleasant. The words Schlumberger and engineer were the equivalent of "Abba Ka Dab-bra" or whatever those magic words were you are supposed to utter because, it seemed, they were willing to sell us anything. I couldn't believe the difference in their attitude now as opposed to when I had approached them in Mississippi. We bought a regular refrigerator and a gas stove, signed the necessary papers and headed for home. Esther was as pleased as I had ever seen her while I was going through mental gymnastics trying to see just how we would make these payments plus the house, food and incidentals. We had just run up $2500 worth of bills. I relaxed a little as I realized we could make it if my income per month didn't fall below the $600 level. That seemed safe to me based on what little information I had from speaking with various engineers working in Wharton.

Within a couple of days, the furniture and appliances were delivered, we moved in and Esther settled down while I went to work. She was happy as a lark getting her new home ready, arranging the new furniture and taking care of the girls. Valerie was 3+ years old and Celeste had reached the ripe old age of 19 months. We now had a car, job security and health insurance, as well as food in the house to go with our sweet little girls. What more could a young mother ask, or father for that matter? Esther loved that house. It was bright, having plenty of windows, and was just the right size for a family of our size. We could even barbecue in the breezeway.

BACK TO WORK AND REALITY

Needless to say, after that shopping trip, I was ready to go to work. When I first arrived, they assigned me to an old truck # 518, which had a couple of advantages in the recorder cab layout. A little later I became a so-called swing engineer and relieved other engineers with assigned trucks for their days off. Everyone worked 12 days on and 3 days off. On one truck, whose number was 1764, I relieved the assigned engineer on days off. It was a relatively new truck, maybe a year old or so and is shown in figure 9-12 just being completed in Houston.

Figure 9-12 Truck #1764 coming off the assembly line in Houston. I rode relief on this truck soon after being transferred to Wharton. It brings back fond memories.

DISTRICT STAFFING

Wharton district had three logging units and one perforating unit with six engineers whose names were Finner Whitman, W. L. Watson, George Sebastion, Jerry Martin, Benny Schindler and I. Finner was swinging at the time. Jerry had about 3 months more experience than I. George had a lot of experience but wanted no part of perforating. He had been an operator who had worked himself up to the engineer level through hard work and demonstrating a good understanding of logs and the associated operation. To me, at least, he seemed somewhat contrary and wasn't too easy to get

along with. Benny and WL were also in that category, having started as operators. They were much more congenial than George. Apparently, in the early days it was quite possible to work up to an engineer by simply demonstrating the desire and ability required. As time went on, though the possibility was still there, it became less frequent because of the increasing complexity of tools and the associated interpretation. Finner, Jerry and I were the only college graduates in the group. The two extra engineers provided days off relief and vacation relief. If an extra engineer was on duty, he would be assigned sales days and spent his time contacting customers in the various field offices that dotted the area.

Each truck had 3 operators assigned to it. They worked 6 days on and 3 days off. Usually there was an extra operator or 13 in total to provide vacation relief. Their job was more physical than that of the engineer, as I described during my operator-training period and they also had to drive the truck. The sum of all these conditions was that their job was more physically demanding than the engineers', at least in the eyes of management. Consequently, they received more days off than the engineers and we made do with a twelve - three schedule.

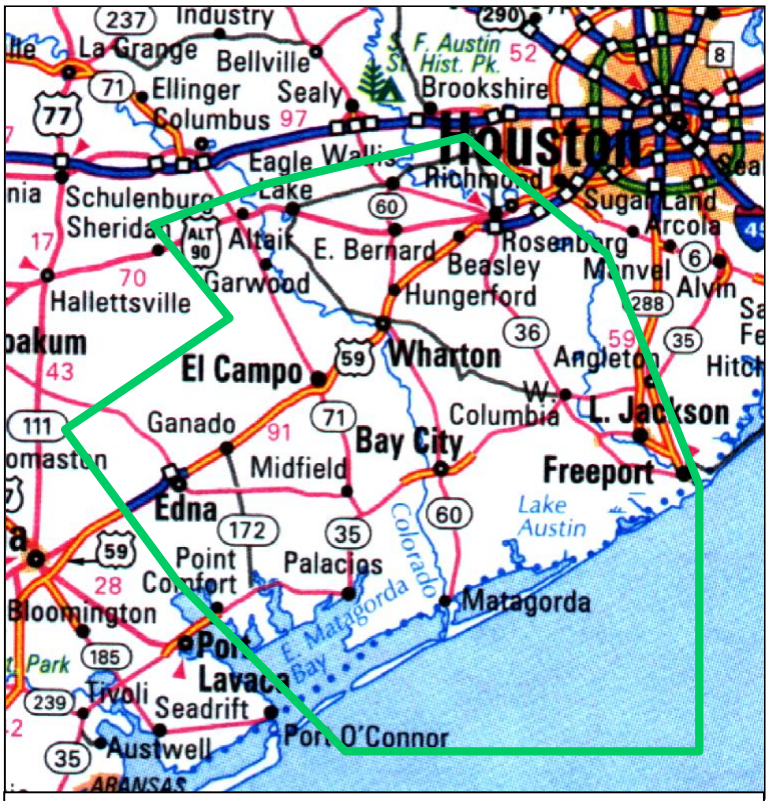

Figure 9-13 A map illustrating the general area serviced by the Wharton, Texas District in 1955 to 1957.

In addition to the engineers, the office had the manager, a clerk and a person for the print room. The shop area had a mechanic, a gun loader and a handy man to wash guns, etc. Later, an instrument technician was added.

The Wharton district covered essentially 5 counties or parts thereof. These were Wharton, Jackson, Matagorda, Fort Bend and parts of Brazoria and Colorado counties. See the map in figure 9-13, which shows that part of Texas. It will help orient you later when I relate some of my bodacious oil field experiences. The green dashed line is a rough boundary of the district.

The district was really busy for the two years I was there. I had no trouble maintaining $300 in bonuses and frequently made $500 or $600. We were going night and day, pretty much and during the 12 days on, snatched what sleep we could between jobs or at the well site while waiting. We had radios in the truck and would often be interrogated as to our status while logging because another well would be waiting for us. It wasn't unusual to be bone tired and when that radio crackled, we would shudder. It had about the same effect as the Lord calling a sinner to repentance, in that one knew an unpleasant message was about to be received. We couldn't always answer because our transmission would introduce a spurious signal of sorts on the SP. Consequently, we would call back as soon as such a log was complete. Until we returned the call, the dispatcher never knew whether we had heard his transmission or not. Some of the older engineers would only call if the dispatcher persisted and couldn't get any other help. If they were relatively fresh, they were more cooperative. Being young and maybe a little naïve as well as relatively poor, I would call back as quickly as possible. I enjoyed the work and I also liked the money; so I would take another job if I could still crawl. Of course, driving safely was a big consideration for both engineers and operators. The latter had a partner to spell them but not the engineers. Consequently, I often pulled over and snoozed a while as I headed for next well.

A FEW LOGGING EXPERIENCES

DON'T FORGET THE GROUND LINE

Back in chapter 6 you should have learned that both the SP curve and the 2" micro-normal curve required a ground, as a return for their measuring circuits. Between locations the ground line was coiled up on the ground spool and the electrode would rest on the steel truck bed. On location, one of the operators would un-spool the ground line and place the electrodes (one for the SP and a second for the micro-normal) some distance from the truck in a wet or muddy zone to assure good contact with old mother earth. A poor ground could make a proper calibration difficult.

As I stated earlier, we were blowing and going (that means busy) within a few months of my arrival in Wharton. After getting back to the shop and finishing up reports, I was home showering when another call came in for Humble Oil Company in Fort Bend County near Thompsons. See the NE corner of the district in figure 9-13. We hurried on over to the field just south and east of Rosenburg and arrived on location just as they were ready for us. The operators rigged up in a hurry as I prepared my end of the job and soon we were going in the hole with the ES log. I calibrated the resistivity curves and then the SP. The latter seemed to calibrate a little differently than usual but the curve was quiet and the readings normal. We went to bottom and ran the ES with no apparent difficulty. Soon we were out of the hole and ready for the microlog.

As I slowly climbed out of the truck, he jumped out the other door, ran around to the back, grabbed the ground and threw it in the puddle.

The operators hooked up the tool; I had them close the sonde and then I loaded the warhead as usual. We picked the tool up and were soon headed in the hole with it. My senior operator came back to the truck and took over the winch while I started checking out the microlog. I finished rigging the panels up correctly and started calibrating the two-resistivity curves. They seemed to be working correctly but I couldn't get the K ratio set properly. To adjust the curves to the right readings, I had to set the K ratio switch at too high a level. Something wasn't quite right. I fiddled for a while, double checking all my wires and settings and finally muttered to my operator, "You know, this thing acts just like the ground isn't out or isn't in a good place. Come to think of it, the SP acted strange too. I think I'll change it and see if that helps." I jumped out of the truck and walked around to the back looking for the ground cable. There it was and the grounds were in a puddle of water about 10 feet from the truck. I picked the ground up and looked at it but could see nothing wrong, so I tossed it back in the water in a little better-looking spot. I climbed back into the truck and said, "The ground seemed OK". I then checked the calibration again and lo and behold, everything was normal. I set the K ratio switch to its normal setting, adjusted the curves and remarked, "That's strange, the ground seemed OK but now it's working like it should.

As we got near bottom, I ran the mud log as usual and continued to mutter about the way the tool had acted. As the tool neared bottom, I fired the warhead to open the sonde arms and tied in to the ES. Soon we were logging and I settled back still musing about the K ratio. Mostly, I was talking to myself.

Pretty soon I heard a muffled chuckle and then another from the operator. I said, "What's wrong with you? He couldn't hold it in any longer and let put a roar as he told me what had happened. As I originally made the remark that I suspected the ground, he realized he had never put it out and it was still lying on the truck. As I slowly climbed out of the truck, he jumped out the other door, ran around to the back, grabbed the ground and threw it in the puddle. By the time I got to the back he had disappeared back around the opposite side and into the truck again. He had tried to keep it a secret but couldn't contain himself as I kept muttering about the situation. We had a good laugh and my pride was somewhat assuaged as I realized my isolation of the problem was on target.

BE SURE THE SPADES ARE PROPERLY SET

Another time we were logging a well near Bay City for an independent operator. We did a lot of work for this guy and I hadn't bothered to get my service order signed prior to going in the hole. We were supposed to because it had a protective clause, which absolved us of any responsibility unless we could be proven negligent. The location was in a rice field, which required a board road into the site as well as a boarded location around the rig. Everything outside the boarded areas was a sea of mud, as you can imagine any rice field would be. I have provided a poor man's illustration of the site of the incident in figure 9-14.

We ran the ES and ML in short order and everything was humming along fine. We had hooked on a core gun and my senior operator, QD Hobbs, was running in the hole with it. He was kind of tired and asked the other operator to take over so he could get a little shuteye in the sleeper cab. That was fine with me and I began to work on the ML film, as my shot record was ready to go once we arrived at TD. Apparently QD hadn't informed the 2nd operator of the well's total depth and in a few minutes he turned and asked, "where did you say bottom was"? I looked up at the depth meter and said, "You just passed it 50 feet ago". He had really been steam rolling down the hole running in the gun at about 20,000 feet per hour because the hole was in good condition with little to slow him down. He was experienced and I never questioned that he didn't know where TD was.

Of course, he shut it down immediately and began coming back up slowly. When the depth meter reached the TD number, the line weight began to increase but it didn't level off. Of course, we knew we were stuck. All 200 pounds of that gun had hit bottom at 20,000 feet per hour. It was no wonder. I told him to keep coming up slowly which he did. At about 3500 pounds over line weight, the clutch began to slip and the line weight quit increasing. He dropped down and tried again with the same results. I then told him, "Do that again but faster, I want to come up to 5000 pounds or so above line weight. If you come faster the clutch should hold". He started up again but not fast enough to suit me. The engineer had a throttle by his seat as well as that of the winch operator and allowed him to set logging speeds as desired.

I said, "That's not fast enough" and hit the throttle-increase. The line speed increased like I wanted and the line weight came on up towards the extra 5000 pounds I had asked for. When it got to about 4500 pounds, the spades holding the back of the truck kicked out. Only one spade had been secured and it was hooked in the space between the boards of the location ramp. This had occurred because there was no way for it to reach the dirt or, more correctly, the mud lying underneath. The second spade lay harmlessly on the top of a plank because of its position and obviously offered no help.

We probably had a total of 7000 pounds or so pulling on the back of the truck. The cable was like a rubber band stretched to 7000 pounds and the truck like a rock in the pouch of a slingshot. When the two spades came loose, the truck took off for the rig like David's pebble streaked for

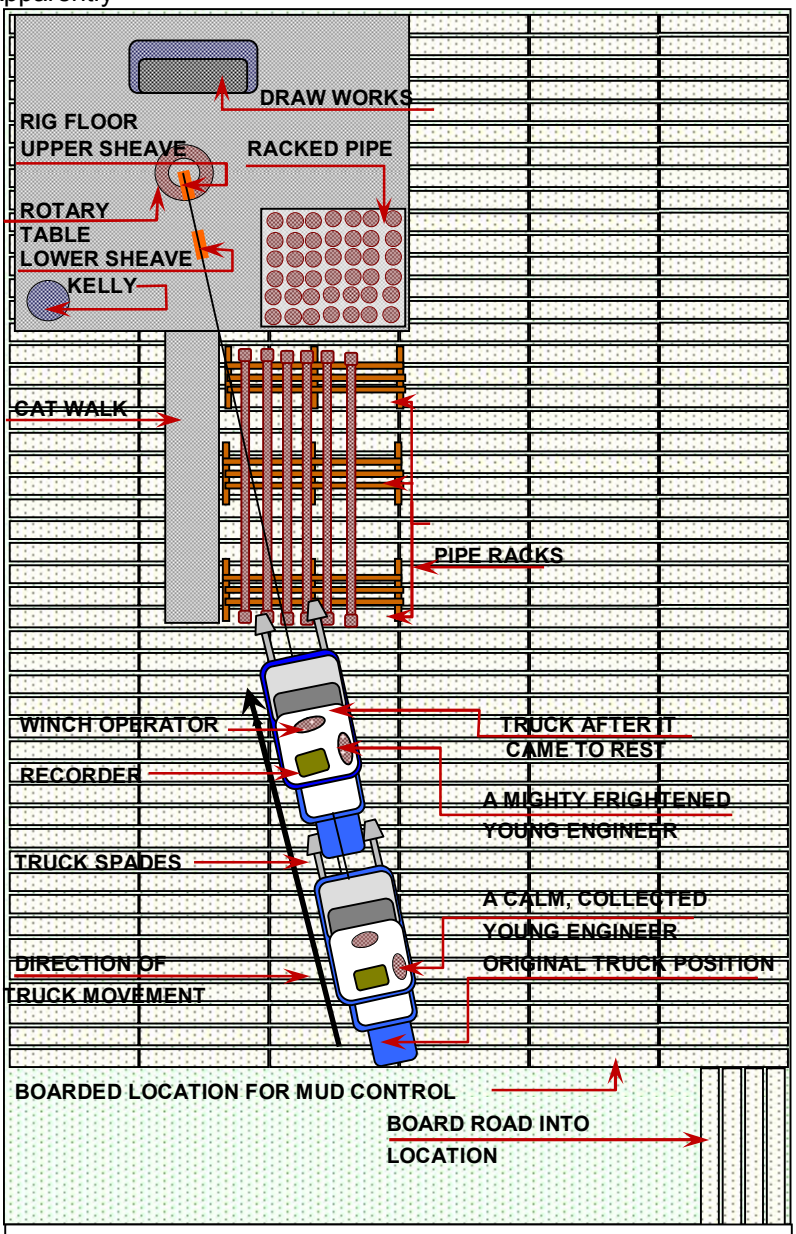

Figure 9-14 An illustration of the well location & boarded area in a rice field where my wild ride occurred.

Goliath. I didn't know what to do and my first reaction was to cut back on the throttle, which was of no value at that point. The winch operator's reaction was to try to guide the truck with the winch steering wheel, which had somewhat less value than my tardy action of cutting back on the throttle. That big old 45,000-pound truck sailed towards the rig like a rock but at a velocity, which was somewhat less than that responsible for Goliath's demise. Finally, the truck banged up against the pipe rack where we came to rest, thank the Lord.

All I could think of was, "I don't have my service order signed". Needless to say, the nap of my senior operator, Q.D. Hobbs, was cut short. He came bounding out of the truck and asked what in the world was going on. I explained it to him and told him to get the truck back in position while I got my service order signed and off I went to the company trailer.

That I did, trying to act as nonchalantly as possible. The customer asked, "Why sign it at this particular time, was I done"? I said, "No, but the hole is a little sticky and I think I ought to have everything in order. We'll be done in a bit". He signed the order and I headed back to the truck more nervous, I think, than when I entered the first grade in Hailey, Idaho.

…… You better get high behind it because there's a blue norther coming in. That wind will blow all the water out of the bay". I laughed and said, "yah, sure and pigs fly.

The truck was back in position with the spades set a little firmer when I arrived. As I climbed in, Q. D. was spooling up cable. I looked for the weight increase as we neared pickup. It came near the expected point and, what a miracle, it leveled off. The gun was free. I tied in carefully, shot the cores and came out of the hole, humming "Zippity do da, Zippity ay, my oh my, what a wonderful day. Plenty of sunshine going my way. Zippity do da, Zippity ay". Little blue bird on my shoulder, … … etc. Yes sir, seeing that gun come loose had made my day.

Well, all is well that ends well and this had certainly ended on a happier note than I expected. Maybe the funniest remark that was made during the whole fiasco was that of a roughneck. He said, "I heard this snap and looked up. There was that truck a coming straight for the rig. I could see it being pulled right up on the floor, through those sheave wheels and down the hole. Man, I cleared out of there in a hurry". Though his story had a little baloney mixed in, it seemed relevant to the situation we had just experienced. Likewise, realistic or not, it kind of matched the sensations we had in the truck as it took off towards the rig. I'll guarantee you every action in such a situation is automatic; without real thought and such aren't particularly helpful nor are they always the best for a given situation.

A BLUE NORTHER

There was a considerable amount of drilling activity in the Tres Palacios Bay, a part of Matagorda Bay. See figure 9-9 near the bottom. I had made a couple of jobs in the bay earlier in a rather routine manner and never thought of them as having any particular problems. As was typical in those days, we were on a busy cycle. ALCOA (The Aluminum Company of America) was on "will call" along with some other wells. My truck had come in from a job and was consequently last out, that is, the other two trucks were in rotation ahead of us. Once the truck was cleaned up and ready to go, I decided to measure cable. We had pulled rather high line weight during the previous job, more than once, getting free in a rather sticky hole. My truck had new cable installed and such cables were notorious for stretch. It seemed we had time and it was obviously the prudent thing to do.

We took time out for a shower and then pulled the cable down on the garage winch to about 10,000 feet and began marking. We had just finished up and were just coming off the winch when W L Watson came out and said, "The other two trucks are rolling and you guys have a barge job for ALCOA down near Palacios. You better get high behind it because there's a blue norther coming in. That wind will blow all the water out of the bay". I laughed and said, "yeah, sure and pigs fly. We'll get there at the time they set". He retorted, "I'm not kidding Obenchain. That wind will push enough water right out of the bay so you can't load on the barge". I said, "I'm not so sure of that and we have a few things to do to get the truck ready but we'll be on our way soon. We need to get some supper too." He came back with, "OK but don't say I didn't warn you". Well, Q. D. Hobbs confirmed Watson's remark, so I decided to listen even though it sounded more like my being sent out for a skyhook. We hurried but we did take time to stop for a quick bite and arrived

at the dock a good hour before we were supposed to. Much to our chagrin, W L was right. There was only a mud flat next to the dock with the barge sitting a few feet away in what was left of very shallow water. Sure enough, the wind was blowing that water right out into the bay. Of course, the customer had no complaint about the situation because we had arrived early anyhow but that didn't help the situation. We had to wait for several hours until the wind died down and allowed the water to return.

The barge wasn't much bigger in square footage than the truck. Q D pulled it on and the operators, along with the barge operator, chained the truck in place. We didn't want it dumped in the bay out where the water was rougher. Soon we were on our way, pulled by a little tugboat. As I said, the water was really shallow for about half the distance to the rig and I could see mud being stirred up by the tug as we churned along towards the rig. That barge must have been scraping bottom.

Once we reached the rig located on its own barge, we tied up along-side and waited until they were out of the hole. We then rigged up like a land job with a little catwalk between the two barges for movement back and forth. The tools and equipment were hoisted aboard the drilling barge with the rig cat line. Soon we were logging and the job proceeded smoothly. However, the wave action on our barge moves the truck up and down as much as a foot or two and of course the tool in the hole along with it. As long as it's not too rough, however, the logs are satisfactory. Shooting cores on depth can be a problem, particularly in thin sands but we managed OK. You simply do the best you can and get on with the job.

Some 30 hours or so after leaving the dock, we were on our way back to it and a few minutes after our arrival, were soon headed for home. I had learned another lesson that day. I knew a blue norther could indeed blow the water out of the bay and neither an oil company nor Schlumberger could do anything about it. Mother Nature ruled the roost and you just learned to roll with the punch.

HOT PEPPERS AND CAJUN COFFEE

In the first year at Wharton, I got introduced to hot peppers and a little later Cajun coffee. On one of my first jobs, we arrived a little early and after getting everything ready had a little waiting time. It was around lunch time and the operators broke out some soda crackers and some little light green chili peppers, you know, the kind that you pour the fluid off to season greens or cabbage or something like that. I was a little suspicious of the peppers because I figured they were hot but as I ate some crackers, they began to look better. The crackers were dry and all we had was hot coffee or water to wash them down with. QD and the other operator were eating those peppers like they were candy and not flinching a bit. They kept after me to try one, so finally I gave in. They had been eating them in about two bites and so I took a big bite of my first one. Within seconds my mouth was on fire and I was running for the water. Man, were they hot. I never took the second bite but decided I'd rather choke on those crackers than have the hide inside my mouth blistered and my stomach doing flip-flops. I now understood why they weren't drinking water. They didn't have to because the peppers simply dissolved the crackers like acid before they could begin to choke them. I must admit though, I admired their cast iron stomachs.

I liked coffee, black and with no sugar. This stuff was pre-sweetened and thick enough to chew. I almost choked on that first swig and found myself wondering what to do.

Cajun coffee is something else. Most rigs in the Wharton area didn't have such coffee because there were few Cajuns around. I was first introduced to the stuff on another rig in Matagorda County. They were drilling for a company out of Louisiana whose representative was a good Cajun. When offered a cup, I quickly accepted and took a big gulp. I liked coffee, black and with no sugar. This stuff was pre-sweetened and thick enough to chew. I almost choked on that first swig and found myself wondering what to do. Those Cajuns were proud of their coffee and I didn't want him to think I didn't like it. Well, I sat there sipping rather than gulping the rest of the cup with a smile on my face telling him how good it was. In small doses it was somewhat easier to handle but the end result was predictable in that I never got a bit sleepy on that particular job. Needless to say, however, I didn't ask for a second cup and I was careful to take "Yankee" coffee the next trip to that rig.

I did, however, get my service order signed. He had introduced himself as Lee Sezo or so it sounded and scribbled his signature on the

service order. I couldn't really read it and filled out the order spelling his name as I just indicated. The job went well. He complemented me on a good job and took his logs with his name spelled S-e-z-o, signed the service order again indicating the charges were approved and away he went without any other comment. We wrapped things up at the rig and headed for town where we arrived in the middle of the afternoon. The office was busy with all the engineers in.

After completing my paper work, I was cleaning up the film and preparing it for final prints when W L Watson came by my desk. He talked to me a bit about the job and Lee Sezo with whom he was quite a good friend. As he glanced down at the film, he busted out in a big belly laugh and pointed at the name Sezo. He said, "Obenchain, you better change that for the finals". I asked, innocently enough "Change what". He retorted, "Cezeaux, C-e-z-e-a-u-x not S-e-z-o, dummy. Don't you know that guy's a Cajun?" At that point in my life I barely knew what a Cajun was, let alone how they spelled their names. I managed a weak grin and replied, "I couldn't read his signature and besides, he didn't bother to correct me".

TIGHT HOLE MEANS CONFIDENTIAL

In the oil business every company had its scouts whose main purpose was to scout out information. Those with the best information could make the best decisions regarding leases, where to drill, how much money to pay for the right to drill, etc. Such scouts would approach anyone they thought might have information of value including Schlumberger engineers or even operators. We were frequently warned not to speak to anyone about wells we had logged except the oil company's representative for that particular well and maybe certain Schlumberger personnel. We, of course, didn't discuss such things with the operators because they might not understand and let something slip. Scouts were not above trying to bribe anyone.

He retorted, "Cezeaux, C-e-z-e-a-u-x not S-e-z-o, dummy. Don't you know that guy's a Cajun?" At that point in my life I barely knew what a Cajun was, let alone how they spelled their names.

We dealt with one person at the well giving him the prints of our services to distribute to others as well as any interpretations we might make. This was to prevent such information from reaching the wrong hands. In short, we were necessarily tight lipped. Legitimate partners in the drilling venture could misinterpret such an attitude and might get their feelings hurt. We had to be careful how we handled these situations, including the person with whom we shared information. Maintaining confidentiality could be like a burr under a saddle.

One story related to the above and which supposedly involved a Schlumberger engineer a couple years before my arrival in Wharton went something like this. He had just finished logging a well and running prints when a guy stepped into the truck and identified himself as a representative of one of the partners in the venture. He said, "Are my prints ready yet"? Without thinking the engineer gave him a set and the guy disappeared. That guy was a scout for another major oil company without any financial interest in the well and he hi-tailed it for Houston, arriving there with prints in hand before the legitimate operator himself had any prints delivered to his Houston office. Somehow that came to the attention of the operator and all heck broke loose. As the story goes, Schlumberger lost that company's business for some time before they convinced them it wouldn't happen again. Needless to say, I was very careful about to whom I gave prints or any other information. I didn't need those kinds of stories circulating about me.

A COUPLE OF TIGHT HOLE EXPERIENCES

One independent operator, whose name escapes me, drilled several wells in the vicinity of Wharton while I was there. I had either the fortune or misfortune of logging a couple, which he labeled "Tight Hole".

In one instance we were called out to a well of his and told to arrive before dawn at the closed gate leading into the well site. We were met there by his representative and, as the truck rolled in on the rig road; they required one of the operators to follow along behind it with a tree branch, wiping out the tire tracks. We logged the well and were held until well after dark before being released. A similar episode then followed as the truck left location with an operator once again obliterating the tracks of the truck. Obviously, they didn't want anyone to know that logs had been run on the well. How much good this did, I don't know but apparently that independent operator felt he had achieved his objective with the tight-hole measures taken. We, of course, didn't question his actions but simply followed his orders.

In another instance with the same operator, I logged the well and the man himself showed up on location. He gave me very strict orders to work through him and him only. I followed those instructions to a "T" making one of his contributors mad. I had tried to explain but had little success in convincing him why I couldn't give him a field print of the log.

After the logs were complete, the operator decided to run some FT's (formation testers), which had been ordered out. We set about testing several sands. The first couple had nothing but water in them. He would be up on the floor when the tool came out and watch the recovery being measured and collected. He then yelled to a friend down near the truck, "There's not a blankity blank thing in here but some blankity blank water." I decided that was his business and continued the testing. The next one came out with a chamber full of natural gas, 50 cu. feet as I remember. Once again he was on the floor and began yelling the pressure readings and the volume of recovery so loud the whole country could have heard. Of course, it was his business but I couldn't understand the need for the "tight-hole label". He broadcast the results about as effectively as a 50,000 watt Houston radio station.

ALLIGATORS ARE OFTEN TESTY

We did quite a bit of logging work in Brazoria County to the south east of Wharton. Most wells were down near West Columbia, which had an old oil field nearby. On this particular job, the objective was natural gas and the operator was Monsanto Chemical Company. The well was in the 10,000-foot range and the services were typically ES, ML and sidewall cores. I made several trips to such wells but my first was the most memorable. As I came in on highway 35 from Bay City (see figure 9-13) I passed a couple of ponds, one on either side of the road. I also noticed a few little alligators, which had been squished on the road. I pulled up to the rig a few miles further on and stopped by the pipe rack, which was typical. I got out to meet the company man and almost stepped on a little alligator tied by his tail to the pipe rack. Looking around, I saw several more all tied in the same manner. I thought, that's interesting and walked over to the geologist's trailer. After discussing the specifics of the well, I asked what all those little alligators were about. He told me the rough necks had caught them back near the ponds as they crossed over the highway. We were in a drought and one pond was pretty well drying up. Consequently, they were headed towards the bigger pond with considerably more water. I'm not sure why those rig hands wanted to catch the little devils but they weren't the least bit happy about it. They definitely weren't friendly. If you got close to them their little jaws started snapping. I held a piece of a shingle near one, which he snapped off; so I decided to stay clear.

One day, however, I read in the Houston Chronicle that Ima Hogg, who never married, was sponsoring a piano concert in Houston.

VARNER HOGG HAD NO COMPASSION

It was near West Columbia where I first heard of one of the early Texas governors named Varner Hogg. It seems he had a plantation near West Columbia and one of the early oil fields in Texas was discovered on it. See figure 9-13. Of course, he made a mint and later was elected to the governor's office. That didn't bother me but then I heard a story that I wondered about at first and later found to be half true. The story was that the governor had two daughters, one named Ura and the other Ima. Of course that usually got a laugh but most people, including myself, didn't believe it at first. I later found out that Ima Hogg was real but Ura Hogg was just a little embellishment to the story. One day, however, I read in the Houston Chronicle that Ima Hogg, who never married, small wonder, was sponsoring a piano concert in Houston. She was in her 70's, which seemed mighty old then but not so today. Anyhow, she was prominent in Houston society and I guess led a happy and productive life but can you imagine naming a daughter Ima when your last name is Hogg? What an insensitive set of parents her folks must have been. It may be the governor wanted sons and was punishing her or maybe he was mad at his mother for naming him Varner, who knows?

AUTOMATED NAVIGATION

I've already referred to the high level of activity Wharton was experiencing when I first arrived there. I was sleepy most of the time, it seemed. On the job it wasn't too bad because your mind was actively involved in being sure everything was working right and the tool was free. The most difficult time was after a job if you were headed home near sun up.

On one trip to the West Columbia area I finished up at the rig and headed towards Bay City. Somewhere east of Bay City I must have faded

into oblivion because I could remember nothing about the trip. North of Bay City on highway 60 I apparently pulled over because I was too sleepy to go on, not real unusual. All at once I woke up, realizing there was quite a bit of traffic whizzing by me and the sun was up. For the life of me, I couldn't figure out where I was. Most of that area of Texas looks the same anyhow, i.e. flat rice fields, and I sat there scratching my head for a while. Finally I decided to continue on the same road until I saw a familiar landmark. Believe it or not, I was just a few miles out of Wharton. I guess I had not only navigated the highway that far before pulling over but I also made it through Bay City with its four or five stoplights as well. If I ran any, no one must have been around because I doubt I could have out run them in my condition. I had hardly known where I was. That, my dearly beloved, was scary to say the least.

FAMILY EXPERIENCES

As I mentioned earlier, I worked twelve days on and then got 3 days off, a standard schedule for Schlumberger engineers in those days. The level of activity was very high and I was pretty rung out by the time my days off rolled around. Even so, I didn't mind because I actually had a little extra money after paying my furniture installments and rent, a new experience for me.

EASTER, 1956, ON HARRISON LANE

Esther was proud of her girls and loved to doll them up. Easter was as good an excuse as any. The photo of figure 9-15 was taken in March 1956 in front of our rented home on Harrison Lane in Wharton, Texas. You can see several houses in the background, which lay to the west of us as well as our shell driveway. Valerie had a couple of friends living down the block with which she played on a regular basis. Those friends' parents also figure into a story I'll relate a little later. Valerie was going on 4 and Celeste was nearly 2. As you can see, baby buggies were still popular and all little girls wanted one for their own. It was nice for Esther and me to finely be in a monetary position where we could buy a few things, as simple as that. It didn't take much to please either of us and Esther could finally go shopping from time to time. Believe it or not, I enjoyed seeing her shop and felt the joy she exhibited when she returned.

AUGUSTINE WAS NO SAINT

As spring of 1956 rolled around, I began to realize I needed to mow the lawn. I was a good-sized lawn but I was young and healthy and really didn't mind the thought. I bought a lawn mower of the old reel type. Probably not many

Figure 9-15 Valerie and Celeste on Easter Sunday (March 1956) in Wharton, Texas.

people coming after my generation even know what that means but you could sum it up by saying all required power comes from the guy behind the handle. To cut decently, the reel blades had to be sharp and set rather tightly against the cutting bar, which created a good deal of friction. Consequently, it wasn't real easy to push on regular grass and this grass of ours seemed to require everything I could muster up that first morning. I tried increasing the blade separation but then they didn't cut

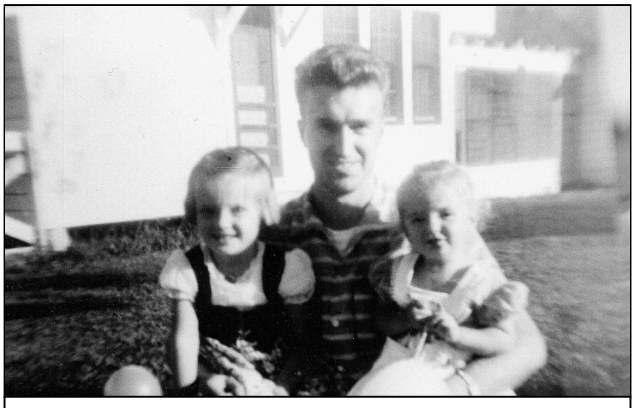

Figure 9-16 A proud papa with his two girls in the back yard of our house in Wharton, Texas.

cleanly so I went back to the original setting. There was nothing to do but tough it out. This I did and believe you me, I was bushed when the job was done.

I soon learned we had St. Augustine grass, a variety that spreads by sending runners out in all directions while building up a nice cushion of grass underneath and it is a bear to push a reel type mower through. Anyhow, I spent most of my first day off cutting that yard. It should have been cut weekly but I could only make it every twelve days. Being young with considerable energy helped but I was almost tuckered out after completing it. The only bright spot in that particular day was our regular barbecue. When I finished up with the yard, the girls and I would get the barbecue ready to go and we'd have kind of a picnic that evening. We kept the grill in the covered breezeway between the kitchen and garage. With their enthusiastic chatter and encouragement, I managed to recuperate rather quickly. Figure 9-16, taken by Esther in the rear of the house, may well illustrate such an afternoon after dad rested a little and had taken a shower so as to become presentable.

DADDY IS A FUGITIVE

About the spring of 1956, we made one of our rather frequent trips to Houston. Sometimes we would go in to shop and sometimes just to spend the day in the big city. On this particular day we had made the trip strictly for fun. Valerie was going on 4 and Celeste had probably reached the age of two. We had a good day and headed back that afternoon. At that time, highway 59 merged with highway 90 and both went through Rosenberg and Richmond. See figure 9-13. Fort Bend County was known for their speed traps and I was usually very careful to maintain the lawful speed while passing through. I guess my mind was on the day's events and the good time we had had. Anyway, between Richmond and Rosenberg on the way back to Wharton, I was pulled over for speeding. The red lights were flashing behind me and I got a couple of blasts on the siren before I noticed the cop. Valerie had just said, "Daddy, there's a car with big red lights behind us". Needless to say I shut it down and pulled over to the side of the road. The policeman came up to my window and very politely told me I had been driving almost ten miles an hour over the speed limit and asked to see my license. As I handed it to him, Valerie's eyes were about to pop out of their sockets. Talk about wide-eyed. She was really taking it in. The cop had that neat Texas Troopers uniform complete with badge and he had a gun strapped to his waist. After checking me out and deciding I wasn't any threat to society, he simply gave me a warning and said

Figure 9-17 Valerie giving her little sister, Celeste, a ride on the back of her three-wheeler.

to watch my speed more carefully. We headed on home, within the speed limit I might add, and arrived about 5:00 PM. I pulled into the driveway and we began unloading the car. Valerie had disappeared and didn't come back for 30 minutes or so. We asked her where she had been and she said, "Oh, just over to her friend's house", whose name I forget. We didn't think anything about it and life went on in a normal fashion. About a week later, Esther was talking to her neighbors who said, "I hear Tom got stopped by a policeman". It seems Valerie had made the rounds of the neighborhood after we arrived home telling everyone that would listen, "Do you know what? A policeman, with a big gun, stopped my daddy. He had a car with big red lights and he talked to him and everything". I learned then to always be a good example in front of my kids and to be careful what I shared with them, i.e. no family secrets.

"Do you know what? A policeman, with a big gun, stopped my daddy. He had a car with big red lights and he talked to him and everything".

DRIVE IN MOVIES

As a family, we stayed pretty much to ourselves, not entertaining much or being invited out either. Of course, time was limited but neither of us were really social butterflies. Esther's needs in that area were about like mine. We did, however, have a few company gatherings with barbecue and the like. The Texans can do

barbecue up real good and they also vie for top honors when it comes to sauce, in my opinion.

On my days off, it wasn't unusual for us to bundle up the kids and go to El Campo, 12 miles south west of us, to a drive in movie. See the map of figure 9-13, if interested. We'd do the usual for such an event, i.e. buy some popcorn and drinks and sit through a double feature with news and a comedy, the latter of which the girls liked best. They had a playground there, as well, to which I took the girls prior to the movie for a half hour or so. Of course, they really liked to go and buy the goodies, especially Valerie, so that was part of our evening ritual. She hasn't changed much in the last 45 years either, i.e. she still likes to buy the goodies. Oh well, maybe that's what makes her so sweet. By the time the evening was over and we had headed home both girls were usually sound asleep. We'd tuck them in bed with a good night kiss upon our arrival back in Wharton and they'd be gone for about ten hours. I've included yet another photograph of the girls in figure 9-17 just to emphasize the time frame I've been talking about. Those were good days, indeed, for the girls, as well Esther and I. I look back on them and realize, a good family life is the key to happiness with material assets contributing little. My dad set that example for me.

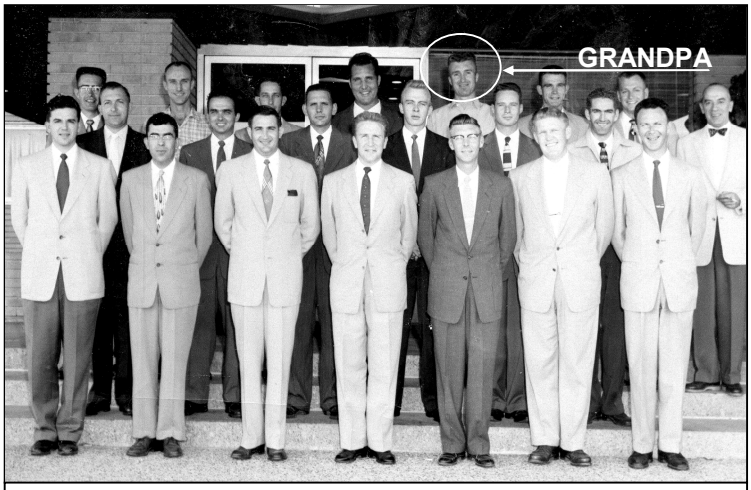

Figure 9-19 A photo of my JFE School class at Headquarters, Houston, Texas about August of 1956.

THE NEED FOR RELIGION

Although Esther had been baptized in the LDS (Mormon) Church, she was inactive when we were married. Likewise, I had been inactive in my own church, The Church of Christ. I don't believe Esther had ever really been active for any length of time because her mother had passed away when she was 9 years old and her dad was not a member. Several of her brothers and sisters were also baptized but I think the family, as a whole, was inactive after her mother's death. Apparently, her mother had been raised a member and was the religious motivator of the family. Her death probably marked the end of any real activity for Esther. In any case, she had little understanding of the restored gospel and hardly ever talked about it.

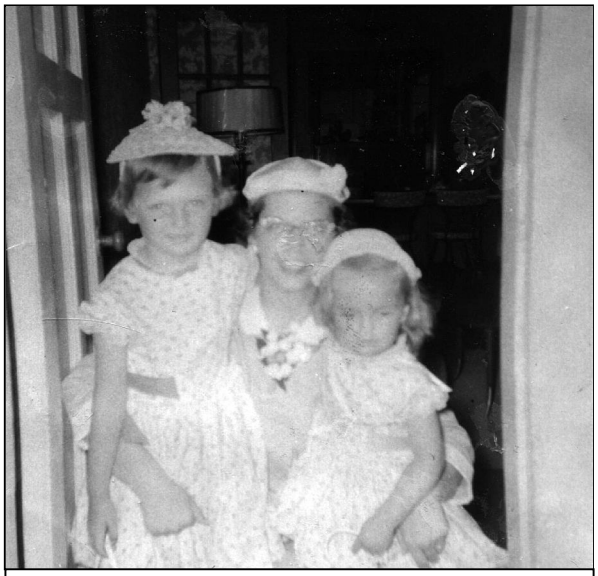

Figure 9-18 Esther and the girls dressed in their Easter finery in the spring of 1956.

About the summer of 1956, Esther and I began to discuss the need for religious training in the lives of our girls. I certainly felt it was important even though I hadn't been to church for some time and she did as well. Anyhow, we began investigating various faiths when I was in on Sundays or when that happened to be my day off. There were no LDS churches in the vicinity or we might have tried them. I do remember trying the Baptist Church, then the Presbyterian Church and finally the Methodist Church. None seemed to fit our needs and we never really became active in any of them. That effort did, however, mark the beginning of our search to find a church, which we might both like. No further progress was really made until we moved to Rock Springs, Wyoming, which involves chapter 10 and my first brush with the Mormon elders.

Our experience in Wharton would hardly be complete without another picture of Esther and the girls. As I mentioned earlier, she loved to dress them up for Easter. Actually, I think she used it more as an excuse so I wouldn't begrudge the small amount she spent for the occasion. Even then, I had kind of a tightwad image, born of my frugal existence up to this point in life. Of course, I chose to describe that particular characteristic as careful financial control. Anyway, figure 9-18 displays the more beautiful side of the family then and, oddly enough, nothing seems to have changed over the years, except I'm a little balder.

JUNIOR FIELD ENGINEER SCHOOL

Somewhere along about the summer of 1956 I attended a technical school for Junior Field Engineers in Houston. It was one week long and consisted of mostly technical discussions regarding the open-hole services Schlumberger offered to the industry. I don't remember too much about it but it would have included such things as basic interpretation of the ES and ML as well as their technical make up. We also got a little information on core analysis and the value of sidewall cores. I believe we were also introduced to the dipmeter tool and the formation tester, the latter being a rather new device. The whole thing was designed to increase our proficiency with these devices so we could interface with the customer better.

We also heard from members of top management and had discussions regarding our

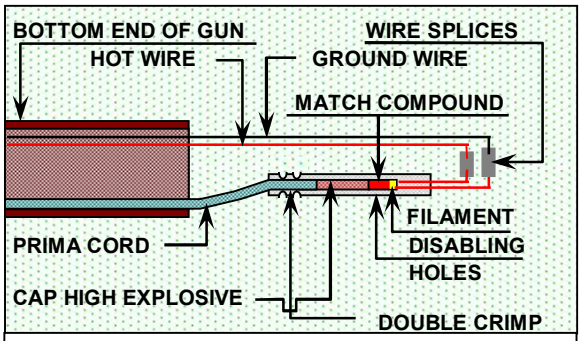

Figure 9-20 A cross-section illustration of prima cord coupled to a blasting cap.

roles as managers of our assigned units. It was interesting but the highlight of the event was a dinner at the Petroleum Club, which was attended by Bill Gillingham (President) as well as several other members of management such as the VP of Operations, the VP of Engineering, the VP of Sales and others. It was our chance to hob knob with the big guys. As I mentioned in chapter 6, Bill Gillingham was quite a storyteller and I was really impressed with him and all of management's efforts to get to know us as well as their efforts to make us feel like we were a part of the company.

The final event of the school was a group picture, which I've included as figure 9-19. You can see me in the back row, which once more validates my statement that I once had a good head of hair. I circled myself in white though blue would have expressed my present mood better as I look upon that youthful head of hair which has long been harvested by old father time. To the extreme right, is a French gentleman by the name of Allegret (I think that's the correct spelling). He was responsible for putting the school together and seeing that everything ran right. He related stories about the old days when he rode a truck and covered an area from New Orleans to Corpus Christi. They were really wild and made our jobs seem tame, comparatively speaking. Apparently the whole crew rode in the truck and they went from well to well because so few trucks existed and the demand so great. They apparently grabbed a little sleep wherever they could, even parking alongside the road. What a family life they must have had.

TRAINING AS A CASED HOLE ENGINEER

I was promoted to Field Engineer soon after returning from the Houston School. I suppose that was about November of 1956 or so. Once more I had to be reviewed at the local level and then go to the Texas Gulf Coast Division office in Houston for a review with division personnel. It was far less stressful now because I had been through it before as a trainee. I passed without any problem and finally got rid of that Junior Field Engineer title which reeked of inexperience. I got a little raise in pay but mainly it opened the way for continued progress or training in other areas.

I knew I had to become proficient in perforating if I was ever to become a General Field Engineer, which was my aim. That was the level an engineer had to obtain before he was considered for any management or other technical job. Consequently, I went in to the district manager, Mac McCullough and told him I wanted to train on the perforating truck. He said, "Fine, but you'll have to do it on days off because I don't have anyone to replace you with on your truck". I figured I could learn perforating

rather quickly and so I asked him, “Once I was trained, could I ride relief on the perforating truck and also the logging trucks”? He told me, “Sure, once you have proven yourself”. So, I began working straight through with no days off. I would ride the logging truck for 12 days and then ride with Benny Schindler, the perforator, for three days. In my spare time, which there wasn’t much of, I read any pertinent materials relative to perforating. Soon I was perforating with Benny looking on. In about 3 months Benny pronounced me ready and told Mac. I began my new role as a swing engineer, which opened up another world. It also got me back to a regular days-off schedule, which pleased Esther immensely.

My biggest challenge was becoming proficient in the use of wire line pressure control equipment and proper arming of shaped charge guns. Also, we were still using bullet guns and there were a few tricks to be learned in minimizing operational problems. The engineer was also responsible for handling the blasting caps. In fact, he carried them in his car as it was against the law for them to be in the same vehicle as the shaped charge guns during transport.

ARMING A SHAPED CHARGE GUN

The engineer always armed the gun because of safety concerns as well as misfires. Such an operation went something like this (Refer to figure 9-20 for the discussion). First, the engineer made sure the ONAN or power plant was shut off and took the safety key with him after shutting the cable circuits off. This action not only disconnected all conductors from the panels but also grounded them through resistors to discharge any stray voltage. The operators then connect the universal head of the cable to the gun, which, as yet, has no blasting cap installed. First, the cap would be connected to the firing line. This assured the engineer that if any unforeseen voltage was present in the cable or gun wires, only the cap could fire. The resistors in the safety switch also limited the amount of current that could flow to a value less than that required for detonating the cap, once the circuit was complete.

As a further measure, the engineer placed the cap in a protective tube, which could withstand the force of the cap explosion if it fired. When I began training, we used the gun bottom to do this with the safety tube coming along later. Next the engineer would short the two gun wires together to check for any sign of voltage. With that satisfied, he then uncoupled the two cap wires which are also shorted together when shipped to the field. He would then cut gun wires and cap wires, one at a time, to the proper length and strip the insulation so a splice could be made. With the cap in the safety tube, the engineer then spliced the cap wires to the gun wires and properly insulated them from ground. When I was trained, we used electrical tape but later, insulated quick connectors were provided, which could be crimped in place. With the cap connected to the gun wires, the engineer then prepared the prima cord by cutting it to proper length, being very careful to make a flat cut perpendicular to the cord so it could be placed firmly against the cap explosive without any air space. Sliding the prima cord carefully into the end of the cap and holding it firmly against the cap explosive, he made a double crimp on the cap end to secure the two together. With that completed, the bottom nose of the gun was carefully put in place isolating the cap and gun charges from the well fluid. The gun was now ready to be run in the hole.

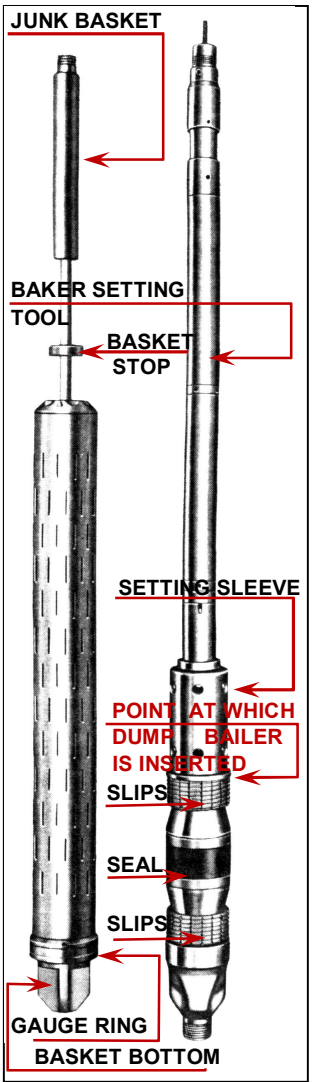

Figure 9-21 A photo of a junk basket and Baker plug with a setting tool but with no dump bailer.

A couple of observations about the blasting cap of figure 9-20. Notice, it contains a filament, match compound and a high explosive. When ready to fire, an electrical current is sent down the cable to the cap and heats the electrical element, which ignites the match compound. The match compound, in turn ignites the high explosive, which is sufficient to detonate the prima cord and consequently the charges, which are connected to it. The disabling holes shown provide access from the gun interior to the match compound for safety. Should there be any fluid leakage into the gun

from the well, such fluid will enter the cap and prevent it from firing. This makes the retrieval of the gun and its disarmament somewhat easier, as well as the whole operation being considerably safer.

I won't go into the principles of bridge plug operations or the use of pressure control equipment as those topics were covered adequately in chapter eight. I will mention them, however, in some of my cased-hole experiences, which are about to follow.

CASED HOLE JOB EXPERIENCES

I'll try not to belabor my cased-hole experiences beyond your ability to endure but a few are humorous and may provide a welcome change to the training just described. I won't try to keep them chronologically accurate but maybe close to their proper time of occurrence for relevancy. If you don't get a few laughs out of them, you have no sense of humor.

….. he laughed a little and said, "you got it from the wrong tank, that's brackish water and salt, you know, is an accelerator. It can shorten the setting time of cement a bunch".

MY FIRST DUMP BAILER OPERATION

I hadn't been relieving on the perforating truck very long when we got a job north of Wharton near Garwood. They wanted to set a Baker plug, dump 10' of cement on it and perforate a new zone a little higher up in the well. I had done that once under Benny's tutelage and it seemed easy. Also, I had two experienced operators who would certainly be a great help.

We gathered up the necessary equipment, which included a plug, a sack of cement, a washtub to mix it in and the necessary extension mandrel for the bailer. They wanted to run the bailer on top of the plug in one trip. I've included a photo of a plug and the setting tool along with the junk basket, which has to be run in figure 9-21. To add the bailer, we would place it with the extension mandrel between the bottom of the setting sleeve and the top of the plug. It would then be filled with cement in a vertical position.

Arriving on location, we rigged up, determined the proper gauge ring and ran the junk basket. Because we retrieved a little junk we made a couple more runs until the basket came back clean. For your edification, while the basket is descending into the well, the outer shell moves up to the basket stop indicated and as the well fluid enters the shell and exits through the slots shown, it carries the junk into the shell. When the cable is stopped or moving upward the bottom of the basket is pulled up to close it off which prevents the junk from escaping. The gauge ring, slightly larger than the plug OD, assures its safe passage after junk retrieval. While two of us were running the basket, the other operator was getting things ready for the plug and cement; waiting, of course, until just before we made the plug run to mix the cement. We didn't want it to set up too early.

Well, we got the bailer and plug all rigged up with extension rod and began to mix cement. Benny had told me to mix it a little on the thin side to be sure it wouldn't thicken so much that it wouldn't run out of the bailer. I was careful to do that and we filled the bailer with the slurry. Not wasting any time we proceeded to bottom, actually, to the designated plug depth, tied in and positioned the plug. I cranked up the current and got my usual indication the plug had set. The winch operator then picked up about 6 feet to let the cement begin to run out and a few minutes later another 6 feet to let it finish. After giving it sufficient time to totally drain we came out of the hole.

What a surprise we had when we got the bailer to the surface, the plug was set but the cement was still in the bailer. It had set up and was solid though not quite like rock. Well, the operators had experienced this before and began to pound the sides of the bailer while it was hanging in the derrick so the vibrations would cause the cement to gradually slide out. In about 15 minutes, it was cleaned up but I was perplexed. I had mixed plenty of water into the slurry just as Benny had instructed me. The company hand had come over to observe and about that time said, "Where did you get that water"? The operator told him and he laughed a little and said, "You got it from the wrong tank, that's brackish water and salt, you know, is an accelerator. It can shorten the setting time of cement a bunch". No, he didn't know nor did I, for that matter but we both marked that lesson down as an experience we wouldn't forget. This was one of many I managed to pick up in my short time relieving Benny for days off.

That was a lesson I never forgot. We had to go into a nearby town, get another sack of cement, mix up new slurry and run the bailer by itself.

We made sure the proper water was used the second time and, just to be sure, I mixed it a little thinner than the first time. All went well and we dumped it with no problem but it had cost us four or five hours in time not to speak of the embarrassment of beating out the cement from the bailer.

GETTING ALL STEAMED UP

We got a big perforating job for a new well in Matagorda County a couple months after I began riding relief. We had a correlation log to run and several trips with casing guns. I arrived on location and went over the particulars of the job with the completion engineer. As we finished, he said, "By the way, don't pull those guns too fast on each trip after shooting because you might swab the well in. The mud differential is only a hundred pounds or so above the estimated formation pressure". I said, "Fine, I sure wouldn't want that to happen either" and I went back to the truck where we set about our work, rigging the riser and each of several sets of guns. There would be several trips and I cautioned the operators about pulling too fast.

Everything went fine until the last gun run. We had run full riser, i.e. enough to cover the guns, because we knew the well might kick. When a gun was brought to the surface, we had to bring it carefully into the riser and shut the blind rams before disconnecting the riser to lay the gun down. This requires careful attention by the winch operator in that he will pull the gun up until the weight just begins to increase indicating the head is snug against the stuffing box. As that occurs, he has to immediately shut the winch down to prevent pulling too much weight and parting the weak point. Needless to say, on the last gun my operator failed to stop in time and pulled the gun off. Down it sailed to the bottom of the well. Now, we had a fish in the hole and a well that was on the verge of kicking or coming in. That's not so good but there was nothing to do but call for fishing tools. While we were waiting, the rig crew tripped the hole with the pipe and conditioned the mud. They wanted to be sure and remove any gas, which would further lighten the mud. They knew it wouldn't take much to allow the well to come in, something no one wanted at this point.

I was at my finest, trampling everyone in my way. I would have put OJ Simpson or any other back in the NFL to shame at that moment.

Finner Whitman came out with the tools and helped us rig them up. Soon the rig crew was heading for bottom to engage the fish. Finner decided to stick around until they actually brought it out. I watched until the fish was secured and they were ready to pull pipe. Then, being pretty well beat, my crew and I decided to catch a few winks while waiting for them to bring the fish to the surface. They had to chain out, pulling a wet string, which made it slow going (If you don't recollect those terms, see chapter 5 for clarification). What had been 3 or 4 hours seemed like a few minutes and they began banging on my car window, telling me the fish was about to be landed. I climbed out of the car rather slowly trying to wake up. Finner came along and said, "Come on, let's go". We then hurried up to the rig floor to observe and offer any advice necessary to help break the gun out of the overshot and, of course, Schlumberger personnel, operators that is, had to handle the gun from that point on.

Well, everything was going fine. They were just pulling the gun through the rotary when, all at once, there was a big bang and steam began rushing through the rotary table enveloping the whole floor. The driller shouted something and the roughnecks took off for the catwalk. I wasn't sure what was going on but I had visions of that well coming in and wasn't taking any chances. I followed the roughnecks and almost ran them down on the catwalk. Finner was following, I found out later, but the tool pusher grabbed him by the arm telling him everything was OK. A steam line had broken under the rig floor. The pusher said Finner drug him half way across the rig floor before he could convince him things were safe. I was at my finest, trampling everyone in my way. I would have put OJ Simpson or any other back in the NFL to shame at that particular moment. Man, did I move and I didn't look back until I was well clear of the rig. Not feeling any heat on my behind or hearing any explosions, I stopped and looked around. I saw the roughnecks going under the rig floor and decided it was okay to return.

Needless to say, when I got back I was given a big hurrah by one and all. Taking such a ribbing wasn't exactly fun. I asked what they were all doing, the roughnecks that is, running down the catwalk. They said we had to close a steam valve. I was a little red faced and let them pile it on while I mulled it over in my mind. Then I spoke up and said, "I don't think I was the only one scared. It doesn't take three of you to close one valve". They didn't have a come-back for

that. It was then that the pusher told me about Finner. It seems he was scared but I was just a bit faster, more determined and, I'm convinced, more than one roughneck was frightened as well, even though they weren't about to admit it.

AN INTRODUCTION TO LIGNITE

Lignite is a form of coal, which is a development stage between peat and the bituminous variety. As such, it has a high concentration of hydrogen atoms in it as well as other volatile matter. It exhibits a high resistivity much like a gas sand would and, of course, also a high neutron count-rate or apparent porosity. At this point in my career, I had yet to experience such sediments

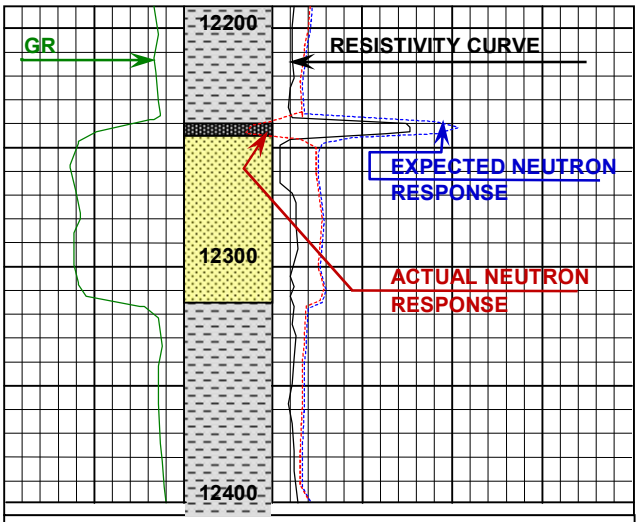

Figure 9-22 Illustration of an unexpected neutron response near Alleyton, Texas.

in any logging or perforating operation. I knew they existed through geologic studies but hadn't even considered how lignite might respond to a neutron log or any other type for that matter. I just didn't expect such deposits in any oil well.

The job involved was in the Columbus, Texas district to the north of us in Colorado County near the town of Alleyton. See figure 9-12 for orientation. The customer had called for a gamma ray neutron collar log along with a rather large section to be perforated. The formation, whose name I now forget, was either nonexistent or too deep to encounter in the Wharton district. Even near Columbus, the well was 12,000 feet deep.

We arrived on location, did all the preliminaries and proceeded to run the gamma ray neutron. I knew the required scales would be somewhat different than what I was used to and went about establishing both zero offset and sensitivity as we neared TD. The customer had provided a copy of the resistivity log and had also pointed out the interval to be perforated. Everything seemed in order. I tied into the open hole log and came up logging. As we moved up hole, I observed a thick sandstone formation with a resistive streak on top. *I* made a mental note to check tie-in accuracy at that point.

Of course, I expected a sharp deflection to the right, i.e. a lower count rate, because I assumed the resistive streak was either due to low porosity or a gas zone. I couldn't believe my eyes as the galvanometer swung left into the depth track and then back to the shale line as we left the sand as illustrated in figure 9-22. I had the operator, C J Zatopeck, shut the winch down and drop back so we could re-log the interval. First of all, the unexpected excursion to the left seemed incorrect and I suspected a tool problem. Secondly, my scale was ruined because we were always counseled to keep the curves within the scaled tracks and out of the depth column. As we came up the second time, what to my wondering eyes should appear but a repeat of the previous pass? It appeared to be exact in the recorder periscope but to be sure I had the other operator develop the film. Sure enough, I could lay the two exactly on top of one another. Such a repeat is a good indication of a legitimate log but I had to be sure. I knew something odd was going on and decided to log through a few more resistive zones rearing their ugly heads up the borehole a ways. Several responded the same way but then a couple kicked to the right as I expected.

Convinced my tool was responding correctly even though I didn't understand the response I was seeing, I adjusted my scale and went back to bottom to re-log once again. We finished the log and as I took a print in to the company man, I was still scratching my head. Everything appeared normal but maybe a half dozen kicks to the left, which, in each case, were at the top of rather thick sands. I pointed this out to the completion engineer and took time to explain why I thought the tool was working all right. He had no explanation either but said as far as he was concerned the log looked as good as any he had seen.

We completed the perforating with no special problems, rigged down and headed for the house. As I drove home, I couldn't get the neutron response out of my mind. Arriving in the office, I showed the log to a couple of other

engineers but they didn't have an answer either. They agreed the log looked good except, maybe, for those resistive streaks. After working up my film, I grabbed all the technical papers I could find in the office on neutron logging and began to peruse them. About the third one I got to I found an example of a set of logs run in the formation I had just logged in. Sure enough, there in the top of several sands were resistive streaks and, sure enough, the neutron log deflected to the left rather than the right. There in the geologic column was the label, "lignite". Suddenly the light dawned and I thought "A-ha, lignite, a form of coal, lots of hydrogen, more than in shales which equals deflections to the left. By golly, they would be resistive too, having no salt water in them. So that explains that weird response I was seeing in the well up there in Colorado County". Now I could go home and get a good night's sleep. My log was vindicated, as was I and that seemed important to me.

MISCELLANEOUS EXPERIENCES

NOT EXACTLY USING MY BRAIN POWER

This little story is one of those secrets I have kept all my life not telling anyone but now, having reached the ripe old age of 80, it seems to be safe. The time of any hurrah or name-calling of which I might be the recipient is limited by my tenure on this earth. So, here goes. In early 1957 my company car was replaced with a new Ford Fairlane. Man, was I pleased. It was somewhat lower, 14" wheels as opposed to 15" wheels on the old '55 model, and it was a little larger. I thought it was the cat's meow as I made the switch. The first thing I found out was that the lower profile made it harder to get into and out of than the old 55. One had to kind of extend his right leg into the floorboard area and then slide into the seat as he brought the other leg in. It was rather clumsy at first but soon I had it down and was almost as fast as with the old car.

Now, Schlumberger engineers were always in a hurry. The job tended to build that into you. As I have said, we were always busy going to or coming from a job when not actually logging on the well. It wasn't unusual to see an engineer run from the office, toss his brief case into the back seat area and jump in his car and, almost simultaneously, fire up the ignition. The car would then burn rubber as he wheeled out of the parking lot. I was no different. I knew just how long it took to drive to a specific area and never left until the last minute. A minute saved was a minute to spend on some other task or even snatching a little extra sleep.

One day I was leaving for a well in Matagorda County and just had time to get there. I followed my usual procedure, tossed everything into the back seat, pulled open the front door, made my low profile entry while firing up the ignition and closed the front door as I pulled in my leg. Well, something went wrong, indeed, terribly wrong. Though my big foot cleared the doorway with time to spare, my head didn't. Whop, I felt the door slam my head up against the door frame and, as stars began to explode in that momentary darkness of high noon, I felt a pain shoot through my head. I struggled to clear my head and felt around for blood, which surely must begin to flow. I felt none but sat there for a few minutes trying to figure out what happened. Then a sudden realization of the stupidity of the act flashed across my mind. What if someone saw me? I quickly looked around and, at least with my blurred vision, I couldn't see anyone. I made sure my head and everything else was inside this time and quietly closed the door and sat there for a while collecting my senses. There was still no blood, just a pounding head and burning embarrassment for the ridiculous nature of what I had just done. When I felt I could focus on the road properly, I quietly put the car in gear and slowly drove out of the shop area like a dog with his tail between his legs. This was one incident I had no intention of publicizing and am not altogether sure of why I am doing so now.

A LUXURY TURNS NECESSITY

During the summer of 1956, we suffered through the hot humid weather of the Texas gulf coast. We were somewhat used to such weather having spent 3 summers in Biloxi, Mississippi but even so, this was worse. There was no gulf breeze as in Mississippi because we were too far inland. We did have an attic fan, which helped at night but half the time I had to catch what sleep I could during the day. Anyhow, by the summer of 1957 we decided to look for an air conditioner to fit our bedroom window. They were just becoming popular. Soon we had one of the bigger ones rated at a ton and a half. It required a 220-volt outlet, which cost $50 to install and the unit was $300. Even so, I considered the investment a bargain because I no longer had to lie in a pool of sweat. Sleep was no longer just a necessity but a pleasure, as was my feeling of refreshment more so than it

had been before. As you can see in figure 9-11, the unit faced the doorway to our bedroom. We closed the hall door to the dining area and left the two bedroom doors as well as the bathroom door open. The unit cooled the two bedrooms quite well even in the daytime making summer days much more tolerable for Esther and the girls. That $350 investment turned out to be one of my better decisions regarding appliances in spite of the later resale price, which turned out to be somewhat of a fiasco. You see, we only used it one summer and then carried it around with us until finally selling it in 1962 for about $100 and I suspect, Schlumberger paid at least that much in moving costs.

SALES WORK BECOMES A PART OF THE JOB

I don't exactly remember the timing, maybe about the summer of 1956, there began to be considerable emphasis placed on field engineers becoming more involved in sales work when not actually riding a truck. It seems competition was on the increase and Schlumberger's percent of the market was decreasing. The division office began to count monthly contacts and report the same to both the district and the division manager. Anyone that knew me at that time would realize such activity wasn't my forte. Frankly, I detested the idea of visiting a client's office and asking for the logging work on such and such a well. I didn't mind going in and interpreting logs but beyond that the idea was less than comforting.

We also were told to get better acquainted with the field geologists and engineers by taking them to lunch from time to time, as well as to other social events. The idea was, of course, to have Schlumberger engineers develop friendships with oil company personnel and thus improve our chances of getting the logging work on wells in our area or district. Though not happy with the situation, I began to adjust to the required involvement, making my share of contacts on a regular basis. Even so, for me, such activity was much like taking a dose of castor oil. I did fine with geologists, etc. at the well and frequently bought them dinner after a job but found it difficult for some reason to call at the office and take them to lunch. The latter seemed rather synthetic and particularly difficult when I had to ask for a logging job as well, heaven forbid.

As I indicated earlier, we had to report our contacts on a monthly basis and if they were too low, a poison pen letter would arrive from the division office. Keeping out of such trouble apparently motivated me because I persevered and gradually found such contacting easier to do. My natural timid nature and, I suppose, my 8 summers in the forest service produced a personality aberration that continued to plague me to some degree throughout my career. Even though painful, at times, I'm sure such experiences did more for me than the technical aspects of the job which I found so enjoyable. To my credit, I can say I never shunned opportunities to become involved in sales work, as you will see in later experiences with Schlumberger. That may or may not have been wise but seemed the way to advance.

A FAMILY VACATION

By July 1956 we had reached a reasonable level of financial confidence and security in life and decided to take a three-week vacation trip to Idaho. We had a car, though it wasn't air-conditioned, two cute girls to show off and I had accumulated three weeks of vacation, which had to be taken. The distance was about 2400 miles and it would take at least four full days to get there and another four to get back. That left about 13 days to spend with both families, i.e. those in Glenns Ferry and in Boise.

Even then, we knew the trip would be tough because, freeways were non-existent. Eighteen-wheelers had to be passed and every little town along the route had to be driven through. That meant top speeds of maybe 65 miles an hour were reached occasionally but only maintained for short periods of time. I became somewhat of an expert at passing those big monsters of the road but hardly comfortable. One would have to peek around the left side of the trailer, watching for a straight stretch of road without oncoming cars and then hit the throttle when favorable conditions occurred.

Such a state of affairs was often difficult to find and particularly so as we got into the Rocky Mountain area where curves and hills were plentiful. Thus, it would frequently take 10 or 15 minutes and often even longer to get around such a truck after pulling up behind the trailer. During that time the diesel exhaust would almost suffocate my loved ones and me, as our 450 air conditioner sucked the fumes in through the open windows. One had to temper his desire to pass with the reality of the oncoming traffic. Taking a chance was out of the question as trucks and cars whizzing by provided a vivid picture of the ramifications of any such resulting

failure. Nope, taking a chance was out of the question even if I were traveling alone, let alone with the family.

When an opportunity opened up I floored my old 55 Ford and moved into the left lane. I don't remember the horsepower of that old car but with a full load it took a rather lengthy section of highway before we could slip back into the safe zone in front of the truck. While negotiating such an operation, we could feel the vibrations from the truck, watch the pulsating motion of the truck's wheels pounding the pavement as we inched our way past and smelled the hot tar of the road mixed in with the stench of diesel. What a relief to see the radiator of the truck fade into the background sufficiently to allow me to pull back to the right. Yes, that trip was full of highway stress. Even though traffic was much lighter in those days, I can say without question that, I prefer the freeways and traffic of today, when going across country. Of course, Atlanta's 50-mile long parking lots are another matter, trying one's patience and certainly making one question such improvements.

We had made almost 700 miles and were still in Texas, of all things. I began to appreciate, or maybe a better word is, detest, the size of that state that day.

That old Ford didn't have a lot of room inside or in the trunk. With two girls and two adults packing for three weeks, it became apparent we would need a car carrier on top for the luggage. I installed one, the day before we left, it being the first of many. It became rather a standard item for our later vacations. We packed most of the car the night before and got an early start that morning, about 5:00 AM. Placing the crib mattress in the back seat, we loaded the girls in before they were awake and headed northwest. Bypassing San Antonio as well as Lubbock and going through Abilene we ended up in Amarillo that night. We had made almost 700 miles and were still in Texas, of all things. I began to appreciate, or should I say, detest, the size of that state that day. There we got some supper and a motel. Esther and I were bushed but the girls wanted to play. After all, they had slept late in the back of the car and had been penned up there all day as well. We took a little swim with them and Esther read to them later for a while. The room had an air conditioner, which was a blessing, and about 9:00 PM they were tired enough to go to sleep.

I had left a wakeup call for 4:00 AM and we were on our way again by five. The girls were sleeping like logs and we made it all the way to Clayton, New Mexico before they came to. We stopped briefly for breakfast and headed out for Raton. Soon, we were on top of Raton Pass, a highlight of the trip because the girls got to see their first snow. We let them out of the car for a while so they could play in it along-side the road. I would have thought we would have taken a picture or two but I can't seem to find any. At any rate we continued on to Pueblo and then cut west over the Rockies to Gunnison, as I remember. We spent the second night there and once again got an early start for Utah the next day. We continued on through Price to Salt Lake and stayed somewhere north of Ogden that third night. From there, it was on into Glenns Ferry where we got some badly needed rest for a few days. It had been a strain on all of us but maybe more so, on Esther who was constantly trying to keep the girls entertained.

Needless to say the girls were the center of attention while we were there. Art took plenty of pictures but I don't find any I can pin point to that trip. It's possible that the photo of figure 9-1 is one of them but I believe it was taken a year earlier. Though she and the girls had spent time in Glenns Ferry while I was in school and while waiting for me to bring them to Texas, it was as though this was their first experience. If spoiling was to be accomplished, they certainly put forth their best efforts. They virtually took them off our hands while we relaxed and enjoyed life. It was a welcome gesture after such a long hard 4-day trip, though not intended for our benefit.

After several days with Esther's family, we went on to Boise and spent some time. I don't remember any particulars of that trip but I'm sure we had several gatherings and kind of brought each other up to date. Dad was gone, of course, but mom was still at the 17th street residence. There may be some pictures around of that particular vintage but again I don't seem to be able to put my hands on them. After spending several days visiting with mom and my siblings in Boise, we returned to Glenns Ferry for a last hurrah before starting our trek back.

We, of course, then did the whole thing, the trip that is, in reverse but we did decide to take a little different route. Going down through Salt Lake we headed east to Vernal passing Strawberry Reservoir on the way. After getting a room there, in Vernal, we took in the Dinosaur

National Monument, which was just getting started a few miles to the east. With my geologic background, I found it very interesting. The girls and especially Valerie, because of her age, were awe struck at the big skeletons. I enjoyed sharing my limited geologic knowledge and about dark we headed back to Vernal to spend a peaceful night. We were all tired from the visit with the dinosaurs and slept like logs.

Early the next morning we headed across the Rockies on highway 40 and down through Denver, finally staying the night at Trinidad. All I remember was; we were dead tired having gone further than we had intended, before finally finding a rather dumpy motel with two beds. It wasn't much, not even air conditioned, but we slept like logs anyway. We got an early start and made it back into Texas passing our Amarillo motel to make extra miles and shorten the last day. We stayed somewhere between Amarillo and Abilene but the exact spot escapes me now. In any case we were more than happy to arrive at our little home in Wharton the fourth day, bushed but no worse for the wear.

OPPORTUNITY KNOCKS AT OUR DOOR

About a year after I arrived in Wharton, another new engineer arrived there whose name was Bill Baker. Around the summer of 1957, yet another one showed up by the name of Bud Graham. I believe Bill replaced W. L. Watson who resigned. With the arrival of Bud, however, business was beginning to drop a little and it became obvious that Wharton had too many engineers. In October, Bill Baker was asked to transfer to the Rockies. I would have jumped at the chance because my intent had always been to get back to the country I loved. As you know, I particularly love the mountains and felt we would be happier there; taking family outings as well as being closer to relatives. I secretly hoped he would turn the transfer down and, if so, I would volunteer. Unfortunately, he accepted and was told to report to Rock springs, Wyoming. He was on his way within days.

I thought, what the heck, and went in and talked to Mac McCullough anyway, expressing my desire to transfer to the Rockies. It wasn't long until I was notified that there was an opening in Glendive, Montana. Though that wasn't quite what I had in mind, I accepted and Esther and I began to make plans for the move. Bill had already gone but I made the remark to Mac that I preferred Rock Springs since it was nearer the mountains as well as to Idaho; home for us. He said he couldn't change things and I should plan on working in Glendive, Montana.

We had a new problem now, i.e. we had real furniture to move. We had come to Wharton with little more than the clothes on our backs but we would be leaving with a rather normal array of household goods. Mac explained to me the procedure for a company move including what Schlumberger would and wouldn't pay for. Soon I was negotiating with Mayflower for the move.

Things moved along rather quickly and before we knew it, the big day had arrived with Mayflower coming to move us. The driver had picked up local labor to help pack and load. In this case it was a couple of colored guys who seemed nice enough but none too ambitious. Esther watched them with an eagle eye. She wanted her stuff packed just right. They didn't care as long as they got paid for the day's work and tossed any old thing in a given box. Esther, on the other hand, wanted it organized so she knew where things were and could find what she needed at the other end. She went between the two of them directing their efforts and making them change things from occasionally. She also watched closely as they carried out furniture; being sure they didn't bang it against the doorframes. She was a tough taskmaster. I suspect her toughness and tenacity in carrying out the job of overseeing was primarily motivated by the fact that she now had a house full of furniture. Though not of the highest quality; it was relatively new and it was hers. She dogged those poor guys right up until the last piece was loaded on the truck. Once loaded, the driver said he would see us in Glendive, Montana in a week and took off. Ours was a partial load and he had more to pick up.

The next morning, we went by the office before heading out. Mac told me to stop in Denver and talk to the area manager. That was fine with me. Besides, I had recently traveled the route and knew where to stop as well as the required travel time. I told Esther of the change and we headed north to Denver, Colorado to check in. I figured they just wanted to meet me and we could then continue north to our destination. We could make Denver in two days and Casper on the third. I assumed we would lose a half day in Denver but we should arrive in Glendive on the fourth day of travel with any luck.