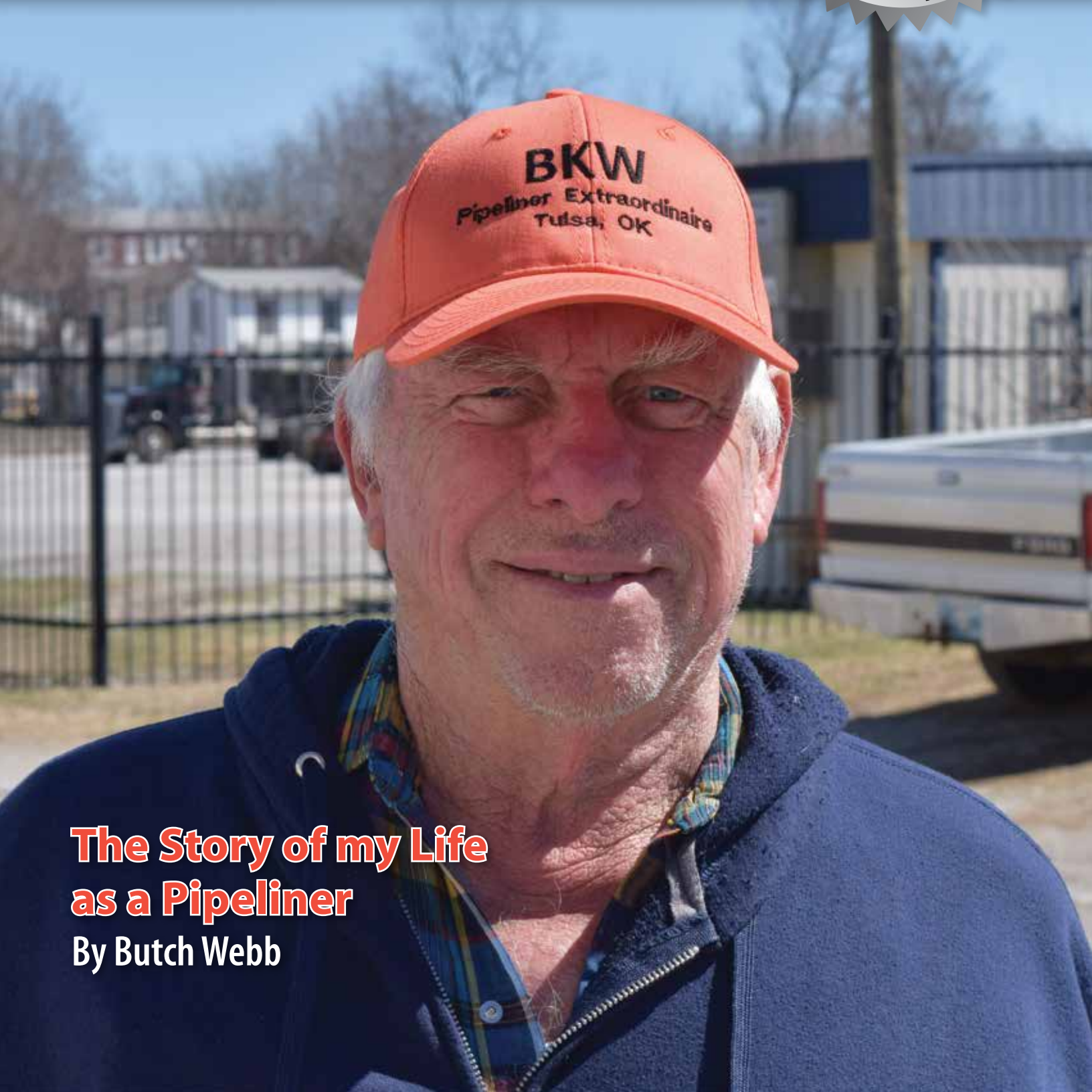


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PIPELINERS

HALL of FAME NEWS



**The Story of my Life
as a Pipeliner**

By Butch Webb

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In 2003, the Pipe Liners' Club awarded me the title of "Pipe Liner of the Year". I was very honored and gave an attempt at an acceptance speech by saying I was proud and I thanked everybody including all the people who had taught me what I know about pipelining. However, after a few years thinking about that poor feeble speech, I decided to really thank those responsible for the knowledge I have and to pass this knowledge on to others.

From my experience, nobody can live long enough to learn everything they need to know to be a good pipeliner. They have to learn from somebody who has pipelined and gained knowledge and experience and then shared that knowledge and experience with others. This knowledge comes from listening to the old pipeliners telling stories about some of their "Oh my Gods", and how they solved the problem. Pipelining is a unique industry. Pipeliners have a certain mindset and to develop that mindset they need to gain knowledge from experienced pipeliners. Pipelining is a rewarding occupation and not just financially but in the pride of accomplishment, being outdoors, constantly moving down the line, and comradeship.

In addition, every day is a challenge because of bad weather, rock where there was supposed to be no rock, or just plain bad luck. The pipeliner still has to figure out how to keep the pipeline moving down the line. It takes a kind of toughness to keep going.

My first thank you goes to my dad, Hi Webb. He was a Texas Aggie engineer working for Phillips in Bartlesville, Oklahoma. When I was a kid, we lived in Dewey and on

those hot summer nights we would have the windows wide open to get some fleeting breeze and when it came, it felt good. So, all night we would listen to those one-lung lease engines pumping the oil out of those stripper wells. My dad had the Oil and Gas Journal sent to the house and since there was no television, I learned something about the oil patch. Every four years we would go to Tulsa for the oil show and that was spectacular for a young boy.

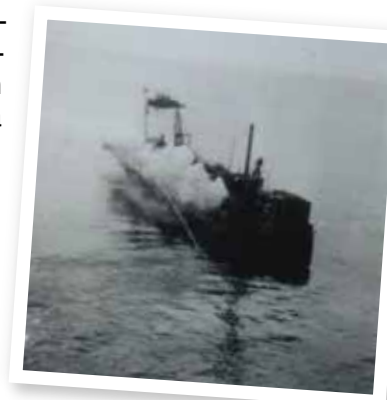
I graduated from Dewey High School in 1953 and three days later I was in south Louisiana standing on the deck of a Brown Root spud barge laying pipe along the east side of the Mississippi River in the salt grass. I was a welder helper for Orval Toby Thorpe. I helped Toby for three summers while going to Oklahoma A&M College at Stillwater. On that job in 1953, Brown Root went offshore in the Brenton Sound laying 4-inch pipe from a WWII LST. It still had the super structure and this was one clumsy operation. Good thing it was a short line.



Toby Thorpe taught me to weld and fabricate pipeline equipment. Of course, during that time I had to listen to a few of his wild stories. Some other wild stories came from Ben Baldwin who was the barge foreman and he knew how to run the lay barge with efficiency. Also, there

was Jean Loverin and Willie Bloomberg who were spacers. These hands were all WWII vets and real men.

In 1954, we laid pipe offshore Grand Isle Louisiana for Humble. Brown & Root had a cork for a lay barge and we had to lay pipe in 30 feet of water. It had two welding stations and one extra combined station for x-ray, coal tar and concrete. It only had four anchors, one on each corner. Rough seas shut us down. However, we were still able to lay pipe and set platform risers.



In 1955, Brown & Root built a Cadillac lay barge. A big cut down LST with three welding stations, one x-ray, one coal tar, and one concrete. The barge had two anchors on each point with one anchor midship on each side. We could lay 125 joints of 12" in 12 hours. This was the first lay barge that laid pipe off the right side since all other lay barges laid off the left side, which is traditional pipe lay.



So, when I got on deck I asked why and was told the reason was the side boom hand. In those days the lay barge set pipe with a side boom, which is typical, and the operator looks over his shoulder to watch the spacers. Well, this side boom hand was an older fellow who had been with Brown & Root for a long time and he had a stiff neck. He talked them into putting the lay string on the right side so he wouldn't have to turn his head to look at the spacers. It's been that way ever since, even without the side boom.

Bead-eye Hoke had the night shift on the lay barge. They did not lay pipe but watched for storms and made repairs. Sometimes he would have me help if needed. Bead-eye taught me how to run a tight ship.

I want, in a big way, to thank Mr. W.D. Willie Schoolcraft who was a friend of the family and the Brown & Root pipeline superintendent. He told me that when I graduated from high school, he would put me to working pipeline. He did and I have been grateful ever since. When he formed Horton and Schoolcraft, Toby Thorpe and I went with him double jointing 36" concrete coated pipe.

In 1956 Mr. Schoolcraft went to work for Fish Service laying pipe in the northwest, of course his entourage followed him. We laid gas service lines in Spokane, Washington. This is when Howard Hibler taught me about servicing towns. Spokane was tied into the Northwest Pipeline and was expanding the towns gas service pipelines. I met Gus Sprague whose dad was a welder and again I learned more about gas service lines.

In 1957 I graduated from Oklahoma A&M in Engineering. I went back to work for Howard Hibler with Fish Service and wound up in Idaho putting in gas service lines. During this time, I worked with Grady Howard who inspected the work in Montpelier, Idaho. When Fish Service's contract ran out, I went to work for the contractor as a laborer. During that time, we dug the service lines from the main to the houses by hand and one day the foreman came by with a small ditching machine called a Ditch Witch and he elected me the operator. It only had four small wheels and you stood by it and pushed it in the direction you wanted it to go, but it was sure fast. After that work ended, we laid a 4" cross country gas pipeline in Wyoming. About that time the foreman handed me my greetings telegraph from the U.S. Army and I became dressed in olive drab and equipped with an M1 Grand.

After I returned from the service, I contacted Howard Hibler who was working for Trunkline Gas Co. and needed help with their 1959 expansion. I want to thank him for this opportunity because that's when I became a real design engineer. Trunkline was going offshore for the first time and they did not have engineers with offshore experience, at least I had worked on a lay barge and knew the limitations and techniques.

Howard Hibler had the Michigan Expansion section and he did not pre-survey the route but scaled the distances from maps. He was going to pick up the station numbers with the as-built survey, kind of gutsy when dealing with land owners. On this job I learned about the B31.8 code and how to apply it to alignment sheets, specifications, and material. I really learned pipeline engineering on this job from Tom McPearson, John Hughes, Howard Hibler, Johnny Sellers, and the chief engineer Burt Mast. They were well experienced engineers. Then there was Virgil Kinchlow who ran field services. He knew how to control the contractors with inspectors like Crum Davis. Jack Phillips was his assistant and we worked together on some jobs.

I want to thank Clay Spelman who ran the pipeline operations for Trunkline. He wanted me to be the northern division engineer chasing electromites. So, in 1960 I moved north. This is where I learned how to handle gas and how a blow down was used. Trunkline was supervising a big loop program, we had to handle the gas and help with the flame

cuts and flame tie-ins. This experience became valuable later when I was involved with new gas pipeline construction and few people had this knowledge. I want to thank H.G. Smitty Smith the division superintendent, Sweed Pearson district superintendent, and many others including welders and helpers.

My boss was Burt Surber, he taught me how to run a corrosion control system. I really admire him for his patience and ability to be a good boss. As the local engineer I designed widgets and some pipe parts but mostly hung around construction. Meterman Bailey taught me about meters, Mac McDuffy taught me about microwave communications and two-way radios, and aviator White taught me about airplanes flying patrol.

Burt Mast was a forward-thinking engineer, he was constantly testing pipelines and advancing pipeline technology with the American Gas Association. We tried to blow out a quarter mile of 26" pipe to study the rate of shear as the crack moved faster than the speed of sound. Burt Mast and his engineers were constantly testing the Panhandle Eastern natural gas flow formula for pipelines. We tested various methods to internally coat in place pipelines. Inventors would bring their internal coating machines and Trunkline would run them with air and they would come out junk. Others would bring their super internal coating pigs and would leave 10 miles of coating in the first half mile. That is when we started testing sand blasting techniques to remove the coating. Trunkline also tested various types of protective tapes for corrosion coating and some tapes were so bad the contractor wanted extra money to put them on. Some tapes were even removed because they did not protect the pipe. He definitely advanced pipelining and for that we can all thank him.

In 1966 Williams Brothers Engineering Co. (WBEC) needed a gas hand to help build 1,000 miles of 36" pipeline located in Minnesota, Wisconsin, and Michigan called the Great Lakes Pipeline (GLGT). WBEC chief engineer was Charlie Flint and he gave me a chance to use all the knowledge I had gained from all those people I have already mentioned. I went to work for Bill Stalcup and he turned me loose and I was all over that country making alignment sheets and locating appurtenances. The job was in two phases. The first phase was 200 miles in Michigan in 1967 and the second phase was 800 miles headed north in 1968. I hydrostatic tested the first 200 miles and was taught by our head field superintendent A.T. One-arm Maxwell. He was definitely a construction hand and let the contractors know it. His welding inspector was the famous Glen Owens who could handle welders. The test company was Williams Pressure Service out of Shreveport, Louisiana and their foremen were Terry Bryant and Don Olsen. These two get a big thank you for their knowledge and experience. They should have

taught pipeline testing classes so future test procedures would be compatible with construction techniques.

On Phase 1 (the first 200 miles) one of the contractors was H.C. Price and the spread man was Ed Kennedy. There was a country café on the main highway along the pipeline and on occasion he would buy lunch there and eat vegetable stew. It had been dry with no rain and Mr. Kennedy was really laying pipe across Michigan. However, about the time he came upon the carrot patch which was about a half mile long, the rains came and the line required set-on weights. The carrot patch became one big bog and at best all he could do was waller the pipe into the ground. Even helicopters did not help much. One day he asked to go to lunch and at the country café he again ordered vegetable stew. While eating I noticed he was picking out the carrots. I asked him about it and he said he didn't eat carrots anymore. This tells you something about spread men.

On Phase 2, I tested 200 miles of pipe in upper peninsula Michigan. The terrain was hilly and Williams Pressure Service needed an engineer so they sent Tom White to run things. Tom and I were always trying to make life easier, he taught me a lot. On the last series of tie-ins after hydro-testing eight sections I was specifically told by the Tulsa Headquarters to dewater each section with air before tying in the sections. However, Williams Pressure had been dewatering with air compressors at the west end and had air locked. Shorty Cunningham was the field superintendent and he had only 5 days to finish or else because we had to have gas flowing by November 1st, 1968. So, we had a big powwow with Charlie James, the construction superintendent, and he said there was hardly enough time to make tie-ins alone much less dewatering first. So, they both looked at me and said "Well?", shocked I said "I think I can make it if we tie it all in and put two test headers at the west end to get more pig velocity." I opened up everything that had a hole in those headers and told them to let 'er rip. It was late and the water came out kinda sorta good but then it came down to just a trickle and I thought about moving to Canada. Well, night came and I went to sleep. When I woke up water was going into the low clouds and when the pig came in it was hallelujah. We beat the final tie-in date and became heroes.

Want to thank Jack Gibbs who was on Phase 1 and 2 as main boss over inspection. He was a smart boss that could get things organized. On Phase 2, met the famous spread man Rusty Killingsworth on one of my test spreads. He knew how to chew people out. On Ed Kennedy's spread we had the famous phantom leak in a swamp in upper Michigan that we never found and wound up replacing about 600 feet of pipe. It was a bad deal until the famous blow outs. When the blow outs occurred, Great Lakes was accused of lacking quality inspection and they presented the report

on the phantom leak and said 'look how much money we spent on a leak we could not find'. That ended that.



The pipeline operated from November 1, 1968 till December 27, 1968 when there was a blow out in upper Michigan. On January 1, 1969 I was on an airplane to the site to hydrostatic test the repair. It was -30°F with a 30-mph wind, I was a cold Okie. It blew out 1,200 feet of pipe and it was scrap. Two weeks later it was repaired and during pack it blew out again. Both blow outs were caused by 6-inch scraps on the pipe wall. This was the first major pipeline to use x65 pipe and we learned a lot. Kenny Bond was the GLGT superintendent on the job and I don't believe he ever slept until the line was back in service.

Many thanks goes to Clint McClure for his advice and pipeline experience. He was raised on a ranch in New Mexico, had been a POW in Germany, was an engineer for El Paso Natural and tested pipeline equipment among his other duties. I would consult with him on problems and he kept me out of trouble on many occasions. On Phase 2, he wrote the hydrostatic test procedures in great detail and they became a book. David Williams had enlisted several top hands for the Great Lakes project, one included Fred Culvern who had been with Panhandle Eastern and had helped develop the Panhandle Eastern formula for natural gas pipeline throughput. He was also responsible for Trunkline Gas Company not using flanged fittings. He said he was watching some hands change out a flanged valve at a compressor station and they cut off the flanges on the pipe and bolted them to the new valve and then welded the flanges back into the pipeline. Shocked, he asked why and they said it was easier and quicker to make a tight seal. He told them he could fix that by furnishing weld-in valves.

O.W. Wade was hired as a protective coating expert and he taught us the pros and cons of asphalt enamel, coal tar enamel, FBE, tape, and wax. After all the studying and testing, he settled on asphalt enamel and wax.

During Phase 2 WBEC designed the straights of Mackinaw 4-mile crossing with two 24" pipelines. To engineer this project WBEC brought in two top hands in Bob Aldridge and John Bomba. They designed the crossing and it was successful all the way.

I want to thank Bob Aldridge for forming an offshore group at WBEC. This was the beginning of wandering around the

world building pipelines. I worked for Carl Rollins on one job and he was the ideal boss. He turned me loose and when I needed help with an ignorant client he would intervene and it made the job run smooth. Another project manager was Liesel Berger head engineer in London with a job in Algeria. On that job, I had river crossings and hydrostatic test procedures and their construction superintendent was Charlie Malone and he couldn't thank me enough when I changed the design on the river crossings. The hydrotest was another matter. I was going to use Clint McClure's super test manual as a go-by and when I got it all together Mr. Ed Mencheff, who was in charge of construction, asked me to sit by him and he would go over the manual with me. Well, he tore out the first page and said "I am not going to do that" then it was the next page that was gone and the next and on and on until there was only about 4 pages left. He then said "Kid, I am the contractor, not the engineer." Guess what that taught me.



In 1972 Great Lakes Pipeline started looping with 36" loops in Minnesota. I was glad to see Terry Bryant and Don Olsen on the job. It was winter and cold. Near Ballpark Minnesota there was a small lake we were using for water supply. We dewatered a mile of pipe going east and the Corp of Engineers said we were polluting the lake with mud. So, they wanted to know what I was going to do with the west 25 miles of pipeline. Fortunately, the terrain was flat without a hydraulic head at the test header. It was 16°F and I opened both 6" dewater valves and let them freeze. The Corp hands showed up at dusk and John McCauly was the head inspector on this section. I told John to get 125 lbs. of gas behind the pig and let me know. He said he had the gas and I thawed out one of the 6" valves. Poof, the water went up in the night sky and came down snow. The Corp hands inspected everything and said it's ok. I thawed out the other and poof, two dewater fountains.

Well Williams Pressure had their fill pump parked close to this little operation and the snow was drifting over to the pump. Miscalculating the amount of water in that pipeline I let it go. I went to sleep and when the pig came in all I could see was a huge mountain of snow in bright sunshine. That fill pump was under 30 feet of snow and ice! When Don Olsen showed up, I thought he was going to whip my butt. Boy was he mad. It took a 98 clam all day to dig out the fill pump, it was in bad shape. However, the Corp hands were happy and I got another hero button, until July 4 the next summer. They were mad again because it was the only ice around that part of the country and they picked up 134 beer cans that morning. You just can't satisfy the Corp.

During that job there were three compressor station tie-ins. These tie-ins included a 30" bypass valve connected to a 36x36x30 tee. During the welding it was cold, the tee was extra heavy and the valve came equipped with pipe pups. The heavy tee absorbed the heat from welding causing a problem. The hydrotest Gods always started the testing at night when it was cold and when Terry Bryant put the squeeze on the test section the weld between the tee and the valve let go and blew the valve 60 feet.



When Terry moved to the second compressor site, he blew the valve 65 feet trying to set a record. When we got to the third compressor site, John McCauly was the inspector and stated his valve was not going to blow off. When asked why he said that after the first blow off he had the welders add more meat to the outside and at the second blow off he had the weld cap cut off and added more meat to the stringer bead. We put the squeeze on the section and pressurized to yield pressure and at 10psi drop repressured. The weld held for 12.5 hours before letting go. The valve did not blow off but the crack began in the weld and traveled into the valve pipe pup. This shows that steel is not solid but plastic and meter grains will realign under stress.

Williams Brothers Engineering had great leadership and a high regard for the employees. David Williams had a great vision for building pipelines and was very personable with the hands. He brought on Morgan Greenwood who also made a person feel important. These men took care of the hands overseas which is not always present with engineering companies. For bosses there was Billy Jack Stalcup, Bob Aldridge, Carl Rollins, and the most dynamic of all Chuck Norris. Then there was Ed Robinson, head of computers, who was always trying to pump my head with computer logic. He had Glen Cunningham helping and Glen and I went back to the Idaho days. For the slurry group there was Ralph Hughes and Jack Tennant. When I wasn't on a paying job, I would help them set up a test because I could weld the test samples. When it came to slurry, they knew their stuff. Other top hands that I worked with and who told of their experiences were Bill Rischard, Billy Delancy, Handy Whychoff, Curt Jacobs, Joe Blankenship, Bill Smith, Ed Kavanagh, Mike Langston, Bill Brownfield, Jim Brooking, and many others who may have been only a passing conversation but still had a transfer of

knowledge. Curt Jacobs taught me about pipeline hydraulics and we tested ball pigs running through a side swing check valve. It worked. While working for Williams Brothers several salesmen came to visit and shared their knowledge with the hands. One was Paul Theobald who was a Cameron valve salesman. He had been a B-24 bomber pilot over Europe with many stories. While in Bolivia I had tried to open a 4-inch single trunnion ball valve with 1,000-pound gas and could not hold it open. Even with a valve operator and four peons and a 36-inch rigid it would not stay open. When asked, Paul explained how a ball valve works and why they were double trunnioned. Also, John Hoff would visit and teach about pipe coatings and field joint coatings. And you cannot forget Sam Johnson who knows everybody in the industry and why and where you use gate valves and ball valves. These types of people are all valuable.

I want to thank Allen Edwards for having the faith to help develop my auger anchor system for buoyancy control for pipelines. We worked on that project and obtained the patent on pull testing each auger anchor after installation and then he told me to go after the work. Well, sales was not my trump suit so when Stalcup called I went to Bolivia operating a gas pipeline. The pipeline carried gas from Santa



Cruz, Bolivia to Argentina. Williams Brothers had laid the pipeline and a top hand named Bowie was left to clean up the paperwork. Humberto Saraz was the Bolivian in charge of the project and I was in the Army with him. Small world. On one project in Carlsbad, New Mexico, an in-place water line had to be internally coated. WBEC sent me there to observe since I had experience with Trunkline. The line had been pickled by Bill Shriver who had developed a super pig for internal coating. However, another company had a monster pig machine that sprayed coating on the pipe walls and this is the equipment that was tested. It made a lot of noise but it worked.

In 1974 Bill Smith was head of the pipeline department of Crest Engineering Company which was a process design company. I want to thank him for sending me all over the world. First, Holland designing a job in Saudi Arabia, Iraq putting a gas gathering system. Indonesia doing offshore and land pipelines. The Iraq project engineer was Dennis Turner who let me loose on the pipeline with Bill Floyd whom I really appreciated. Bill was a surveyor, had a genius IQ and was an aide for General Patton from North Africa to the Battle of the Bulge. He located all the pipelines without a ground survey using various coordinates. In Iraq as-builts are unknown so Bill and I had to guess locations from aerials and road maps. While in Iraq we got run out of that famous museum in Baghdad and partied with the Iraq engineers at the engineers' club. Highlight of our trip.

In Indonesia in 1975, we had a construction superintendent Don Hendrickson. He ran a good ship in a jungle where there wasn't a Wally World around to go buy supplies to keep the job running. We had some top hands on this job. Pat Martin on gathering systems, Goins Boys and Sam Stubbs inspecting, and Bob Bailey running the overall job. The contractors were Keith Stone with Dodsels the land contractor, and Ernie Gant superintendent for CB&I building the storage tanks. Stone and Gant both demonstrated how far ahead you had to plan to keep the job running smooth in the jungle. McDermott had the offshore and river crossings and no project with McDermott would be complete without the Drinkwater boys hollering "force account" every day. Most of McDermott's top hands were LSU engineers and a young engineer on site said that at LSU in engineering class 101, you learned how to fill out McDermott's force accounts.

Ernie Gant was responsible for five 500,000 BBL oil storage tanks plus miscellaneous smaller tanks. He had to liter the material from ships to shore on a 1-mile mud flat at low tide to the jungle at high tide. Quite a feat. He brought one other American for a welder foreman and the rest were locals. The local union boss was a colonel in the army that collected \$10.50/day for the hands and paid the hands \$1.50/day. The Colonel had a good deal going. However,

he got greedy and did not pay the hands and they got their machetes and cornered Ernie and his foreman in the office shack with threats they were going to have to learn to live headless unless they got paid. Well, the Colonel was summoned with money and the hands got paid and Ernie and his foreman kept their heads. That's life in the jungle.

Joe Eaton was the man that bid the work for Williams Brothers Construction. When not on projects, I would help him gather information, count welds, fittings, valves, and anything else. He would throw all that information into the computer hopper and it would grind out the answer. There was top secret info in that computer that was definitely not privy to me. When asked about it, Joe would only grin.

In 1979 Ralph Hughes started an engineering company called Entran, he had work but no hands. So, I worked for him designing and building gathering systems. One big gas gathering system was located in Nowata County Oklahoma. Kenny Green tied in with Leroy Steven who was an old spread man for many years and they did the construction of the system. Together they were very knowledgeable.

About this time Northern Border was kicking off and Tom White who was with Price called me about auger anchors being spec'd on the job. I want to thank Tom for this because it put me in business. Without Tom, there would be no BKW.

At the time, in 1980, I was not in the fabrication business so I went to Valmont who fabricated my anchors and there was Carl Rollins who really got the ball rolling. I rented a building and got one of my Indonesia inspectors Ted Norman, who knew fabrication, to put the installation tools together. In addition to Price, Gary Bracken with Williams Brothers gave BKW their anchor job and Bobby Mosley was the spread man.

Since 1980 BKW has installed anchors all over the country and offshore thanks to a lot of friends. They have been most helpful. In addition to anchoring, I worked with Duck Brantley, a spread man for Price; Blasdale, a spread man for Troy; Larry Neff, who ran SUN Engineering and was a super pig designer; Fayette Curtis, who taught me about quality of weld xrays; Chuck Paul, a machinist who knows metals; Bob McCarty, with DNOW, who knows pipe and fittings; and Wilson Rubottom, who does my drafting. Without these people life would be difficult.

In the mid 80's Dudley Malone with Anson asked if I would design and build gas gathering pipelines in western Oklahoma. I partnered with Kenny Green on the construction and had Dick Korgan do survey and alignment sheets. Bill Hoover, with HRM, furnished rental gas compressors for gathering systems and he would have us install the com-

pressors on these systems. He taught us a lot about compression. We worked at this till the gas play died. Later I would partner with Keith Stone on local pipeline construction projects. Most of the lines we laid were to high pressure gas wells and required steel pipe. The ends normally had 90° risers using long radius weld ells. Filling the lines with a pig for hydrostatic testing was ok but dewatering a one-mile long line with an air compressor caused a problem when the dewater pig hit the weld ells on the other end. The pig would stop and you had to wait an hour before getting enough pressure to push the pig through the ells.

We were using SUN Engineering pigs that were take apart types. I removed some of the cups and the pig would fly through the ells with no problem. So, I designed the tadpole pig for just such type of work. To make the pig, I consulted with Kenny Knapp with Knapp Polly Pig, he made the molds and poured the pigs. He was good at it.

I want to thank the Price boys again, Tom White and Mike Langston, for letting me design the jet fuel pipeline in Anchorage Alaska for their subsidiary Conam Construction. In 1997 this company was run by Bob Stinson and Dale Kisse who were good people to work for. The engineer for Conam was Jeff Huey and he worked on permits. Keith Stone came up and ran a side boom. This job was the first job that I had a run-in with tree huggers. Jeff Huey had to deal with them and I was just an observer. The tree huggers had several organizations that wanted money or a toll to approve the pipeline. Some wanted to replace land that was consumed by the pipeline even though it was buried and the animals still had access to the vegetation. As Jeff Huey said it was just extortion. The tree huggers received over a million dollars but when they divided it up, they were around \$80,000 short.

To prevent street lay and traffic congestion, the pipeline was routed offshore in Cook Inlet on the mud flats. The construction was timed at low-low tide and Jeff said ok to more extortion but they had to sign off before low-low tide. They grumbled but eventually signed off and we laid pipe. Jack Hivley was the engineer for the client who owned the jet fuel system at the airport. Jet fuel systems have to be squeaky clean so Jack sat us down and taught us about filters and fueling airplanes. Anchorage International used 42,000 BBL per day jet fuel. That's a lot of jet fuel.

We designed the pipeline, pig traps, and pump station with three engineers. I had pipeline, Curt Jacobs had pumps, and Otto Boothe had electrical and SCADA. Together we made a good team and the project was successful. On this job, Hugh Eidt was a pipe salesman who played ball for me and he showed the competition how to sell concrete coated pipe at a low cost. It was a good job for him.

After that job we pulled three flow lines 10,000 feet from shore to an offshore platform in Cook Inlet. BKW fabricated several pieces of equipment for the pulls. Bob Gilchrist was the guru marine engineer and when he calculated the pull loads on pulling the pipe through the j-tubes, he was right on. He also helped on a 10" pull in Turnagain Arm. American Marine did the diving and after that job Steve Stuart, one of the head divers, had me design various pieces of equipment for them on other jobs. Between Conam and American Marine BKW has worked all over Alaska and I am very grateful. Alaska is beautiful country. It should be noted that if you design equipment that makes life easier for divers, they will buy you beer all night long.

VECO had BKW design and construct a small pipeline on Saklin Island, Russia. The superintendent was Bob Yant and he knew how to talk to the Russians. He was a Navy pilot in WWII in the Pacific and was a top hand for Curran. Keith Stone ran the construction and Max Bell taught everybody how to grind out the Russian laborers' campfire with a 7 sideboom. His swamper did not want to work, they wanted to stay warm but when he headed for their fire in that 7 sideboom they scattered like a covey of quail. After that, they went to work.

That was another job that did not have a Wally World, you had to bring everything you needed to get the job done. The client wanted to load barges with crude oil before the ice formed so we laid pipe from storage to shore and then plastic pipe to offshore with hoses from a PLEM. Before leaving the client said no pig traps, so that meant no material. After arriving on Sakhalin, the client said he wanted pig traps and he also moved the meter station to the middle of the pipeline requiring two sets of traps. Fortunately, the job was at a refinery and they had some material and a junk pile. However, they didn't have everything and we made orange peel reducers, padded tees and blind flanges out of weld necks with internal plates. Luckily everything passed hydrostatic test.

You have to have mountain man instincts to work in Russia. The boat captain that shipped the pipe, sidebooms, welding machines, pickups, and other equipment paid a Russian boat captain to offload and liter the material to shore. However, after receiving the money he did not show and the ship captain used our welders and material to build a barge big enough to haul the sidebooms. This captain was determined to offload and he did. He knew his stuff.

In the 80's BKW got into the design and fabrication of pigging equipment. A big thank you goes to Jim Forrester, Frank Gray, Shane Stevens, and Harvey Diehl for educating me on pigging techniques, design and operations. Their experiences are valuable. In 2015, Shane Stevens with SUN Engineering had BKW test some 48" diameter

pig cups to determine how much pressure it took behind the pig to blow out the cup. BKW designed and fabricated the test jig and went to work testing. Shane would furnish the cups and after the cup blow out, he would go back to his lab and build another for testing until he got what he wanted. It worked.



From the 90's on, BKW has been making widgets that pipeliners cannot find on the shelf. On the North Slope, Conam Construction needed an internal pipe cleaning machine and BKW made a lance that cleaned the pipe squeaky clean. American Marine divers in Cook Inlet needed pull heads and a 250,000-pound chain jack to pull those three flow lines from shore through an internal j-tube. The divers also received two underwater towers to lift the pipe to make repairs. One time the divers needed two 30" diameter dam plugs and dual 9,000-pound pull heads to create a pipe ditch during a pull.

BKW specializes in Piggable Y's and Switches used in the gas gathering systems, and Ball Launchers and Receivers, along with Ball Release Pins. Making widgets that work for pipeliners is a challenge and a joy. Some of the people that have been foremen that installed anchors on pipelines have been Larry Smith, with Henkels & McCoy, James Wentworth with Sunland, and a foreman named Hobbie. These foremen were good hands and made the contractors money.

After many years designing, constructing, and operating pipelines, I look back at the teachers that gave me the needed tools. In high school, Charlie Hankins taught machine design drafting, Bernie Mitchel taught science, Ralph Bunch taught math. In college, Pop Leonard taught heat power, Wyatt taught pipeline hydraulics. These people formed the foundation for anybody coming in contact with them to advance our culture. They deserve a big thank you. Pipeliners leave a legacy behind after building pipelines

and growing old, when they finally go to the big spread in the sky. Panhandle Eastern has 1930 pipelines that had single random length pipe double jointed with acetylene welding into 40' long pipe joints and then tie-in with Dresser couplings. The hands that installed those pipelines are long gone but the pipeline still transports gas from production to the customers. Likewise, I have worked on pipelines in the 1950's and 60's and these pipelines are still working. Our legacy is something we can be proud of.

Pipelining has changed since the 1950's. In those days, a 36" spread could lay 2 miles of pipe in a day with only 250 hands. That was when there was no OSHA, no EPA, and no environmentalists running pipeline design. Now it takes 750-1,000 hands to do the same work. This does not make better, safer pipelines, it just runs up the cost of service. Some day when a little old lady at the end of the gas pipeline can't afford the gas and freezes to death will anybody take the blame? Definitely not a bureaucrat.

Also, in those days when there was a pipeline incident only the people involved and the company felt the pain of restitution. Now when there is an incident an army of bureaucrats swarm out of Washington D.C. and begin overreacting and writing numerous regulations just to justify their existence. This just makes it hard on pipeliners and raises the cost of pipelines.

Pipelining is a part of the oil patch. We transport what the down holers produce. The media and the government don't like us because we don't need their subsidies or handouts, therefore they can't control us. The fact is the government is just in the way. As pipeliners we consider the tree huggers as hypocrites. Next to medical doctors, pipeliners have made life for people much easier. We get no thank you's for supplying fuel to the power plants to light their houses, or fuel to heat their houses, fuel for their cars, nor do they need outhouses or water wells. Just think what their life would be like without pipeliners. I am proud to be a pipeliner.

-Butch Webb

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