5.6 Headquarters

Operation of the pipeline was "a coordinated effort of all the stations and station operators."[68] Fort Richardson's dispatch division in the Petroleum Distribution Office (PDO) directed these efforts. Dispatch ordered fuel, monitored the inventory and planned pumping schedules. Pump station operators communicated with dispatch through two-way teletype. Hourly reports were sent to headquarters from every pump station, 24-hours a day. These reports detailed tank gauge readings, barrels received, pressure levels, air temperatures and tank farm inventories. All this information was needed to work out the day's operating guidelines.

Many variables had to be considered when creating the pumping schedules to ensure the timely delivery of fuel. As the pipeline's operating manual stated, "One of the biggest problems of the dispatcher will be to get the right product, to the right place, at the right time."[69] Use of four different products had to be predicted well in advance of the tanker deliveries and be coordinated with available storage space in tanks at Haines, Tok, Fairbanks, Eielson and Fort Greely. Another factor to consider was that it took 11 to 18 days for fuel to move the 626 miles from Haines to Fairbanks. Also, the pipeline had to be packed with fuel at all times, even when Fairbanks was not receiving product. The entire pipeline had a 210,000-barrel capacity. Finally, pumping fuel in large batches was desirable to limit the number of product interfaces. All these factors were carefully considered when ordering fuel and making the batch schedules.

Dispatchers monitored the pipeline at a manually operated control board. The pipeline was represented by a paper tape scaled to 1/8 inch equaling 100 barrels of product. "The paper tape was used to plot the displacement of the products in the line by batches, corrected to all operating variables including time of entry into the line and specific gravity of the product. At hourly intervals this color-coded tape was manually advanced in the direction of product flow a distance equal to the net quantity of product pumped into the line."[70]

HEADQUARTERS TRANSFER

The Haines-Fairbanks Pipeline headquarters were originally located at Haines. In 1956 the Army decided to move administrative control of the pipeline to Fort Richardson. The Haines Business Council caught wind of the plan and organized to protest the move. The Council sent a letter to the President of the United States and Alaska's Governor, Frank Heintzleman. The letter argued that the move was unnecessary, likely to increase operating costs of the pipeline, and not in the best interests of Haines residents. They stated: "It is believed that this move is being sparked entirely in military circles with only personal interest and conveniences in mind and not the interests of the government. If it is a question of housing and conveniences of living, we would like to point out that living conditions in Haines are comparable to those in any Alaskan town."

Governor Heintzleman took the issue to heart and promised to lend support against the headquarters transfer. Heintzleman sent the Army an inquiry about the justification for the proposed move. The Army replied with a letter, signed by the Colonel Keith H. Ewbank, detailing the reasons for the headquarters relocation. The Army cited the need for centralized control of all military fuel distribution operations in Alaska. Besides the Haines Fairbanks Pipeline the military was supervising railroad tank car transport from Seward and Whittier to locations throughout the territory. The Army further stated that the move would "result in a more efficient and economical petroleum distribution system."

According to Haines Terminal foreman, Ray Carder, pipeline employees were not overly concerned by the move. They realized there was little office space at the Haines Terminal and that the Army needed to consolidate control of their fuel distribution. The Army letter resolved the issue and the headquarters were transferred in September of 1956.

[68] U.S. Army Corps of Engineers Alaska District. *Product Pipeline, Haines to Fairbanks Alaska, Operating Manual*. Prepared by the Fluor Corp., Ltd. Los Angeles California.

[69] Ibid. p. 23.

[70] Garfield, D.E., Ashline, C.E., Haynes, F.D., Ueda, H.T. *Haines-Fairbanks Pipeline: Design, Construction and Operation*. CRREL, Special Report 77-4, February 1977. p.11.

5.7 Interface Control

The Haines-Fairbanks Pipeline transported four different products. For example, a batch of diesel fuel pumped through the pipeline was followed and pushed by a batch of jet fuel. This was done without physical separation of the two fuels. Mixing of the products, otherwise known as fuel interface, was kept to a minimum by pressurizing the pipeline. Even when pumping was stopped, the line was kept tightly packed with fuel and pressure was maintained to prevent mixing.

The mixing that occurred was predictable, testable and controlled. Mixture occurred because the products had different specific gravities. The mixture rate then depended on the gravity difference of the products, velocity and pipe diameter. Heavier products tended to go to the bottom of the pipeline and the lighter product was forced to the top.

Fuel interface was the most important factor for pipeline operators to control. Without careful monitoring and testing, contaminated products could cause engine failures. It was particularly important in jet and aviation fuel, where a stalled engine could cause a plane crash. Table 3 shows the amount of product that could be safely mixed with each fuel type.

Table 3. Permissible fuel contamination levels.

PERCENT ALLOWABLE CONTAMINATION OF ONE PRODUCT WITH ANOTHER (Assumed in Tankage)				
Contaminant	**AvGas**	**MoGas**	**Jet**	**Diesel**
Av Gas	100%	10%	0%	0%
Mo Gas	0%	100%	2%	0%
Jet	0%	0%	100%	5%
Diesel	0%	0%	0%	100%

Machines that measured the specific gravity of fuel, called gravitometers, were installed at every pump station. The gravitometers provided a continuous gravity reading on the product flowing through the line. Since each fuel type had a different specific gravity, it was possible to determine where in the pipeline the fuel interface was located. Gravitometer checks worked best when the specific gravity of two fuels next to each other was not too similar. There was, therefore, a preferred pumping sequence for the products.

Tok Terminal employee Earnest Kelly recalls managing the fuel interface:

> The gravity starts to change when it gets close to this interface, so you know you're close to it. Then it changes clear over to where it says pure gravity for this fuel that's pushing the other fuel. You open a valve real fast and that pure fuel then starts going up on the hill to your storage tanks. And that little interface is opened to a slop tank. And it goes in a slop tank and then it's closed off. Just a few barrels go to this slop tank.[71]

Fuel could also be monitored visually by color. Automotive fuel was red, aviation fuel was green or purple and diesel was a pale straw color. The mixing of the fuels would create a noticeably different color.

5.8 Temperature Issues

The Haines-Fairbanks Pipeline was exposed to extreme temperature variations ranging from a low of –83°F to a high of 92°F. Fuel expands in the heat and contracts in

[71] Earnest Kelly, interviewed by Kristy Hollinger, 11 April 2002. p. 27.

the cold. Expansion or contraction of the product affected the fuel volume and amount of pressure required to pump the product. Cold temperatures also increased the viscosity (resistance to flow) of the fuel. As the operating manual stated:

> The expansion and contraction of product in the line is so great that on a temperature rise it is possible to be receiving product at the north end of the line without any pumps operating. The converse is also true that on a temperature drop, and with the pumps operating, no product will be delivered at the north end, the pumped product being used to repack the line. The operator will have to observe continuously the temperature and pressure conditions all along the line.[72]

Pumping operations were not the only thing affected by extreme temperatures. Fuel levels in the storage tanks were affected as well. The tanks were painted white to reflect heat. Even so, Frank Haas recalled:

> The initial boiling point on some of those products were as low as eight-six degrees Fahrenheit. So on a hot day, you could go out by the tanks and you could watch, you could actually see the vapors coming boiling off the tanks and just like a waterfall coming down the side of the tank. They were dense enough, that they actually obliterated or blocked the sunlight enough to create a shadow.[73]

Most of the fuel transported through the Haines-Fairbanks Pipeline had a very low freezing point. Diesel was the only product occasionally affected by the cold. During some particularly bad weather at Tok, temperatures reached minus 70. According to operators, diesel came out of the pipe looking like Jell-O.[74] After that experience, dispatch tried not to pump diesel fuel during extremely cold weather.

Figure 27. Vern McConnell at the Fairbanks Terminal. Courtesy Vern McConnell.

5.9 Fuel Delivered: Fairbanks Terminal, Eielson Air Force Base and Fort Greely

The Haines-Fairbanks Pipeline delivered fuel to Ladd AFB, Eielson AFB and Fort Greely. By 1961 Ladd AFB was transferred to the Army and renamed Fort Jonathan Wainwright. All three bases had tank farms for fuel storage. Fuel was also delivered to a storage area at Birch Lake. Eielson AFB, Fort Greely and Birch Lake were supplied by taking cuts from batches of fuel passing on the way north.

The Fairbanks Terminal was different from the other pump stations because personnel had direct, day-to-day contact with the military and

[72] U.S. Army Corps of Engineers Alaska District. *Product Pipeline, Haines to Fairbanks Alaska, Operating Manual*. Prepared by the Fluor Corp., Ltd. Los Angeles California.

[73] Frank Haas, interviewed by Pam Moore, tape #92.210.01, transcribed by KM, April 1999. On file at the Sheldon Museum Archives, Haines, Alaska. p. 9.

[74] Ibid. p. 23.

1967 CHENA RIVER FLOOD

In the summer of 1967, the worst disaster in Fairbanks history occurred when the Chena River flooded. The city was inundated with water and 7,000 residents were displaced. Fort Wainwright was equally affected. Fortunately, the pipeline was not damaged and pumping operations continued without serious interruption. Small vehicle fuel distribution points were out of commission though, and a temporary refueling station had to be set up on Gaffney Road. Also, Fort Wainwright at that time had an outdoor storage area for drummed fuel stock. The drums were carried away by the flood waters and had to be recovered with a wrecker. Most of the barrels were eventually located and returned.

The Fairbanks Terminal foreman, Vern McConnell, received a meritorious civilian's award for "service to the Fairbanks Terminal during the flood, which resulted in severe damage to his personal property which would have been avoided had he not stayed on to work his job for nearly three straight days."

Figure 28. Fuel drum recovery on Fort Wainwright. Courtesy Vern McConnell.

the terminal served as a base for the four or five tank gaugers working at Eielson Air Force Base. Also, Fairbanks had fuel distribution officers. Distribution officers transferred fuel to holding tanks, tanker trucks and railroad tank cars for use around the base. Finally, there was no station housing at Fairbanks. Pipeline employees lived in town.

The Fairbanks Terminal was equipped with pumps to push fuel south to Eielson AFB when necessary. The terminal had a lab for final checks on the quality of the fuel inventory. The lab was mostly staffed with military personnel.

The Fairbanks tank farm on Birch Hill was built in 1943 to store fuel arriving from the CANOL Pipeline. The tanks were a portable, bolted steel type, set up for permanent use in W.W.II. As George Lyle explained, "You could take them apart in sections and haul them on a flatbed truck and then bolt them back together when you got to the new location. But they set them up as permanent tanks and so they went inside and they welded a channel over all those bolt heads on the insides so it was more or less a welded tank after that."[75] These older tanks were sometimes a problem in cold temperatures. Welds occasionally cracked when the fuel level was low and the tank would leak a small amount of fuel.

Starting in 1961 the Fairbanks Terminal took on the job of getting fuel to Nenana, which was a distribution point for supplying fuel to the White Alice and DEW Line sites. Fuel was loaded onto railroad tank cars in Fairbanks for the short journey south to Nenana. There the fuel was transferred to barges and floated to the Yukon River. The barges delivered fuel to an airfield at Galena and other points along the river. From the airfield, fuel was flown to sites as needed.[76]

[75] George Lyle, interviewed by Kristy Hollinger. 12 July 2002. p. 10.
[76] Personal communication with George Lyle. October 2002.

Figure 29. Aerial view of Fairbanks Terminal. University of Alaska Anchorage: Consortium Library Manuscripts & Archives Dept. U.S. Army Haines Fairbanks-Pipeline Records 1954–1958.

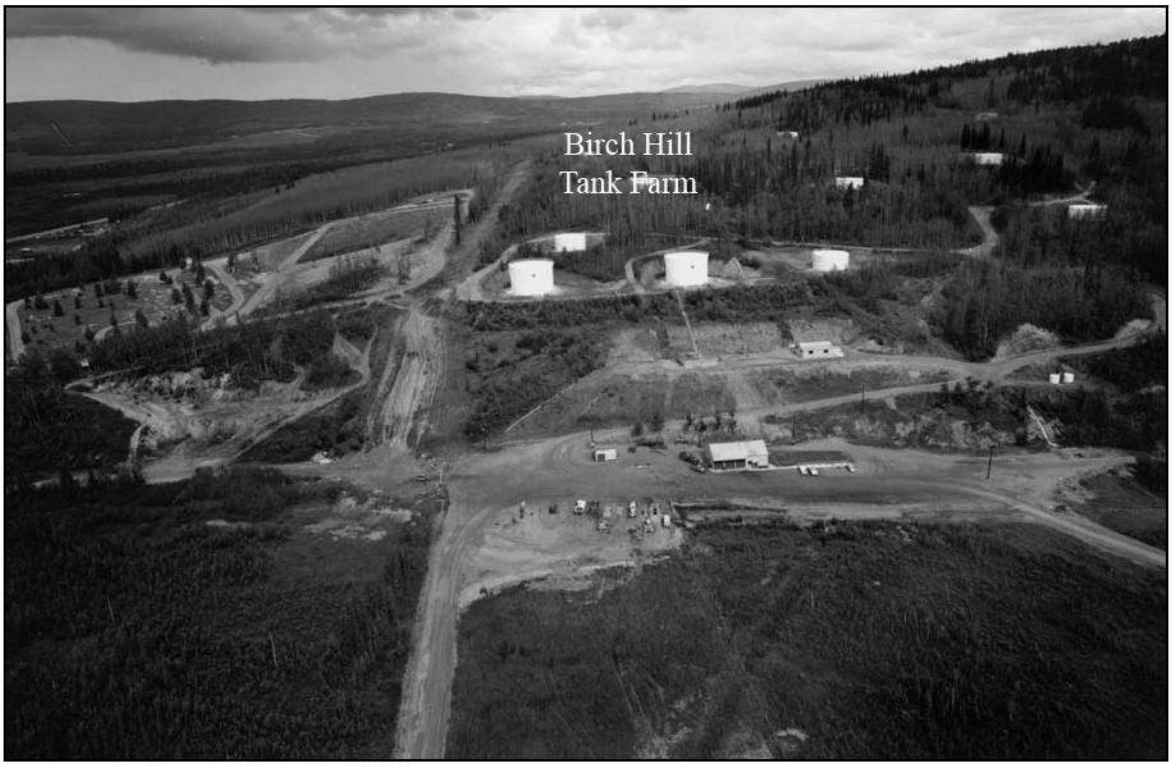


Figure 30. Fairbanks Terminal. NARA.

5.10 Routine Operations

A team of workers supported pipeline operations. These included maintenance crews, supply specialists, electricians, mechanics, welders, pump operators, fuel gaugers, lab technicians and fuel distribution officers. The number of employees fluctuated over the years as military fuel needs changed. During peak operations, up to 280 people were employed at the stations.[77] Another 30 to 40 people supported pipeline operations at the Fort Richardson headquarters Petroleum Distribution Office in Building 724. The pump stations were staffed 24 hours a day, seven days a week. Employees worked on rotating shift schedules. There were three eight-hour shifts at Tok and Haines: 8:00 am to 5:00 pm, 5:00 pm to 12:00 am and 12:00 am to 8:00 am. The shift schedule changes varied according to pump station, but staff could rotate shifts as often as every week. A foreman was in charge of each station and he reported to the officer in charge at the Fort Richardson headquarters.

Two jobs central to pipeline functions were pump operator and tank gauger. Pump operators were based in the mainline pump building office. They managed pumping duties in conjunction with orders received from the headquarters dispatch office at Fort Richardson. Pump operators monitored the pumps and the diesel engines that ran the pumps. They tracked the fuel interface with gravitometers and took samples of fuel to double check the gravitometer accuracy. Pump operators kept detailed, hourly records of the pumping pressure, barrels received, tank gauge levels and air temperatures, and they relayed this information to the dispatch office via teletype. Operators also frequently assisted with other station work such as building and equipment maintenance.

Tank gaugers controlled fuel storage. They worked in the manifold building and the tank farms. Gaugers operated the manifold equipment to control fuel flow to and from the storage tanks. They also manually checked the fuel levels in the tanks and recalibrated this information to account for temperature influence on the fuel level. Gaugers operated the swing lines that filled and drained fuel from the tanks. Gaugers were also involved in routine station maintenance and tank cleaning operations.

PRANKS

Operating the pipeline wasn't all work as Frank Haas recalled:

"….some of the pranks that were played, one that I always loved, they had a new dispatcher. Now he was up in Anchorage, and he's connected by teletype and by P.O.L. phone. But he didn't know the ins and outs of the system…And they decided to do a little hufurah on this new dispatcher. So they called each other on the local telephone system and set this up. And then Thompson came on the line with the teletype. 'Attention dispatch, Haines station, ready to go on line with paint tender number blah, blah, blah.' A tender was a shipment of fuel. But this was a paint tender. Then the fellow up at 48-mile came on the line, "48-mile ready to receive tender such and such of paint." And this guy is going nuts. Now this is like two in the morning. So, you know, you don't want to call your boss at two o'clock in the morning. Well, he got on the P.O.L. phone and he called. And he said, "Thompson, what's this about the paint tender?" Thompson says, "I got it right here on my dispatch log. I'm supposed to start pumping about two o'clock in the morning with this, this paint" And then Buskirk picked up the phone and he says, 'Yeah" he says 'Hey, listen dispatcher." He says, "It's on my log too.' He says, 'We're supposed to receive 5,000 barrels of yellow paint.' This guy, as I said, this dispatch was as green as grass, and they had him going. And he was finally going to call the Chief Dispatcher. At two o'clock in the morning, he would not have been a happy man, really and truthfully. We always had things like that going on."

— Excerpted from Frank Haas interview.

[77] First Report, *Alaskan Command Natural Resource Information Exchange*. 11 Jan 1971. On file at UAA Archives & Manuscripts Dept, U.S. Army Haines-Fairbanks Pipeline collection.

5.11 Maintenance

Besides the day-to-day pumping functions of the pipeline, there was also regular maintenance work taking place. Maintenance was an ongoing concern to prevent problems before they occurred. Potential environmental impacts, the loss of product, and scheduling delays were to be avoided if at all possible.

There were four main areas of maintenance: station, pipeline and right-of-way repairs and tank cleaning. Station work involved repairing and painting buildings and equipment, and cleaning and oiling machinery. As Ray Carder said, "You kept the place spick and span. You could eat off the floor."[78] During the first years of pipeline operations the staff was still limited, so everyone helped out with these jobs. Gradually full-time maintenance crews were added to the team. They were stationed at the Tok and Haines terminals.

Maintaining the pipeline right-of-way was critical to the smooth operation of the system. The majority of the line was surface laid and flash floods occasionally washed out the soil supporting the pipeline. Or the permafrost underneath the pipe might collapse, leaving the line hanging in the air. The soil had to be carefully replaced without damaging the pipe.

Controlling vegetation encroachment along the corridor was the other big issue. The right-of-way needed to be kept clear of trees and brush so repair crews had easy access to the pipeline. Vegetation could also compromise the pipeline metal and had to be cleared often before it grew out of control. Brush control work occurred in winter and summer. In the winter, the frozen ground sometimes facilitated easier removal of vegetation. Cats on both sides of the pipeline plowed brush and snow to the right-of-way edges. To prevent the tractors from running over the pipeline that was under the winter's snow, a man walked the corridor in snowshoes and located the pipe with a rod. For several years, starting in 1968, chemical defoliants were used to control vegetation growth. The defoliants were sprayed aerially. (See Chapter 9 for more information.)

Pipeline repairs involved welding failing seams, replacing valves, and cleaning valve boxes. Fixing holes caused by corrosion or bullet holes required replacing sections of pipe or welding patches to the breaks.

Cleaning the fuel storage tanks periodically was necessary so that the water settling in the tank bottoms did not rust the tank. The slow buildup of sediment in the tank bottoms could also compromise fuel purity. Tank cleaning was a hazardous operation and required strict safety precautions. Tanks at Fairbanks, Fort Greely, Tok, Haines and Eielson were cleaned every three to five years. Pipeline tank guagers and maintenance personnel were usually recruited for the work.

Tank cleaning began with the removal of all fuel. Even when all visible traces of fuel were eliminated, there were still residual toxic fumes in the tank. The tanks were covered, so it was almost pitch black inside and there was no air ventilation. Personnel in protective suits entered the tanks from a side door, known as the "dead man's hatch." Lighting equipment was brought inside with the workers. Initially, fans were used to blow fresh air inside the tanks during cleaning. Later Ventura air movers were used to draw out the fumes. Personnel were connected to fresh air

[78] Ray Carder interviewed by Kristy Hollinger. 8 April 2002. p. 3.

equipment. Sediment was shoveled, swept and mopped up, and then the tank was pressure washed with water and detergent. Sometimes the tank bottoms were sprayed with a tar coating to seal the bottom and protect it from rusting. After the cleaning operation, the tanks were mopped dry and resealed. Sludge removed from the tanks was usually put in barrels and buried near the tank.[79]

5.12 Safety

Fuel is a highly volatile product with explosive potential. Fire was a very serious concern at the tank farms, and each tank was hooked to a central foam fire protection system. Fortunately there was never a fire at the tank farms, and the fire foam system was not used. Pipeline employees observed strict safety precautions. Absolutely no smoking was permitted in the pump stations or tank farms. Lighters and matches were not allowed in working areas and nylon clothing was prohibited since it is spark conducive.

Special tools were provided to prevent sparks from igniting fumes, but as one employee remembered, the tools did not work very well:

> They had what they called safety non-spark tools, which was beryllium. And everybody called them rubber wrenches because if you put a good strain on them they would strain and break and somebody would get hurt. So they said the best way to do those, you take and drill a hole in each one, put a display board on a wall, bolt them to a wall so nobody can get them off – say "There's your safety tools up there, but don't use them."[80]

Pipeline maintenance was also potentially hazardous. John Koehler worked on maintenance crews at Haines and Tok from 1955 to 1970. He remembers visiting every pump station from Haines to Fairbanks and walking almost the entire pipeline at one time or another. He said,

> I tried my best to be careful and not get any of the other fellas burned up. It was dangerous. With welding on the pipe, there's residue inside the pipe. You put heat to it and fumes come and you never know if there's an explosive mixture there or not. If there are a certain percentage of fumes, it will blow, it's explosive. It'll tear things apart.[81]

Daily routine exposure to volatile products could be taxing, particularly when combined with Alaska's treacherous weather. The working conditions for fuel distribution officers were explained in a job description:

> Approximately 50% of work is performed outside where winter temperatures to -70° F and summer temperatures to +90° F are encountered. Inside work is in well heated and ventilated buildings. Subject to fumes peculiar to petroleum products, to injury from climbing about large storage tanks and tank cars under snow and

[79] Harding Lawson Association, Engineering and Environmental Services. "Work Plan: Fuel Terminal Investigation: Haines, AK." HLA Project No. 20801. 10 Nov. 1992.

[80] George Lyle, interviewed by Kristy Hollinger. 12 July 2002. p. 7.

[81] John Koehler, interviewed by Kristy Hollinger. 10 April 2002. p. 2.

ice conditions, and to danger of explosions or fires of highly volatile petroleum products handled.[82]

5.13 Security

Pipeline security was an important issue because fuel distribution was a vital link to the defense missions of interior Alaska, especially for the Air Force. Interrupting the flow of fuel could directly affect the military's ability to function. This, combined with volatile nature of fuel and the large quantities being transported and stored, made it essential that no one inadvertently or purposefully damaged the pipeline or pump stations. The pump stations were posted with signs warning against trespass. All were fenced off with gate-controlled admittance. Employees kept in close contact with local authorities. Security generally "came down to individual vigilance."[83] As an added precaution, employees were subject to background checks before they were hired.

Security breeches at the pump stations were rare according to former employees. Vern McConnell recalled one incident when someone wrote an explosive chemical formula on the side of a tank. Guards were temporarily stationed at the terminal to protect the facilities.

5.13.1 Aerial Surveillance

Pipeline security was also maintained by weekly aerial surveillance flights. The pilot inspected the pipeline for sabotage and right-of-way encroachments. The flights were also used to scout pipeline leaks that were too small to show up on the pump station pressure gauges.

Figure 31. Pipeline marker for aerial surveillance. From collection of USARAK.

A civilian contractor conducted the surveillance flights.[84] The pilot had a special permit from the Federal Aviation Administration to fly 200 feet or lower. The pilot was based in Haines and flew to Tok one week and to Fairbanks the next. The flight to Tok took four hours each way and the Fairbanks trip took about six and a half hours. The flights included a fuel stop in Northway. The journey usually required an overnight stay somewhere along the line, except during the summer when extended daylight hours might enable the pilot to complete a trip before sunset. Overnight stays were kept to a minimum because the contractor had to pay for his own room and board.

Layton Bennett won the surveillance contracts for all but two years between 1958 and 1974. In the 14 years that he flew the pipeline, Bennett failed to complete the

[82] Department of the Army, Job Description, Fort Richardson, Alaska. Job No. 6984a, Fuel Distribution System Operator, Grade 11, OCC Code 5413, 13 Feb. 1963. Courtesy of George Lyle.

[83] Thomas Webster, interviewed by Kristy Hollinger. 29 October 2002. p. 13.

[84] Others sources state that the Army conducted pipeline surveillance with Huey helicopters in 1971, 1972 and 1973. The frequency and extent of this surveillance is unknown.
(http://www.t-6.com/Twelfthaviation/Support/History.html)

weekly trip just twice. He always pushed to finish the job because he was only paid for completed missions. The most common problem Bennett identified on the flights was that of people working close to the right-of-way with heavy equipment. Stopping people before they tried to cross the pipe with their tractors was extremely helpful in preventing pipeline damage. When Bennett saw someone working too close to the pipe, he radioed the location to the nearest pump station and a man was sent out to warn the person against crossing the line. The line locations were identified by large yellow milepost markers placed every mile along the route.

During his first few years on the job, Bennett's biggest problem was making the trip through Canada without stopping for fuel. Landing in Canada meant the Mounties had to drive to the airport to clear Bennett through customs. This caused a lengthy delay and quickly upped the cost of the trip and decreased the profit for Bennett. The flights were made year-round, and Bennett never canceled trips due to cold weather or poor conditions. He had occasional forced landings, but only two incidents caused minor damage to the plane.

The pipeline route mostly traversed unpopulated areas. Forced landings were made on the highway, which was not as busy as it is today. Weather in southeast Alaska can be treacherous. Bennett said he stayed safe during his long flying career by setting limits that he did not cross – no matter what. "I never push beyond a certain point," he said. "You have to give yourself that leeway. And you know somebody else goes through and he might make it, but you're doing this EVERY DAY. You've got to make it every time, not just a dozen times. And that's what brought me through. I always had this minimum." Despite the occasional danger Bennett said the flights were "just plain fun" and "exciting."[85]

[85] Layton Bennett, interview with Kristy Hollinger.

CHAPTER 6.0 System Expansions: 1961

Military fuel needs increased significantly in 1961, six years after the pipeline was built. Fortunately, growing fuel needs were anticipated when the pipeline was designed and allowed for relatively easy modifications to expand the system.

Six new pump stations were needed to boost pressure and move fuel through the pipeline at a faster rate. The new stations, from south to north, were: Blanchard River, Destruction Bay, Beaver Creek, Lakeview, Sears Creek and Timber. Three of the stations were in Canada and three were in the United States.

The United States asked Canada on April 19, 1962, to amend the June 30, 1953 Haines-Fairbanks Pipeline agreement to allow construction of the new stations. It was suggested that the same terms and conditions authorized in the original agreement be employed. In particular, Canadian supplies and labor were to be used in the construction and operation of the new stations. The Canadian Secretary of State for External Affairs approved the request on April 19, 1962.[86]

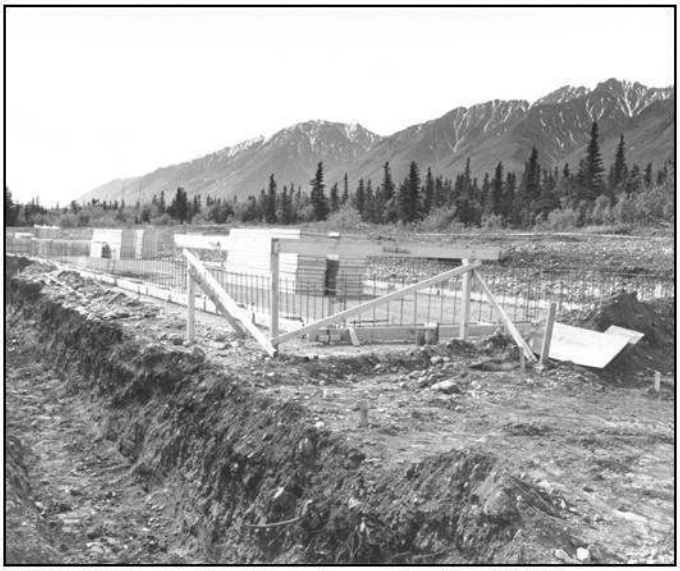


Figure 32. Destruction Bay under construction. NARA.

A $1,609,713 contract was awarded to Premier - H & K Construction Co. of Portland, Oregon, for the three Alaskan stations. Yukon Construction Co. of Edmonton had the $1,396,858 contract for Canadian work. Six 50-foot trailers were provided at each station for worker housing. The main concern was ensuring that all work was completed on time. Construction was carried out simultaneously at all sites. Delay at one station could hold up the entire project. Fort Greely's resident engineer at the time, Carl Eilertson, consulted with the Alaskan crews to make sure the schedule was adhered to. Eilerston's assistant, Ellis Morgan, took charge of the Canadian construction sites. He put in 1,200 to 1,500 miles a week traveling back and forth to the sites. Contractors had approximately six months to complete the job.[87]

The six new stations were nearly identical in design, with the exception of Blanchard River. Blanchard River was to have three pumps while the other stations would have two. The extra pump meant the composite building had to be larger and more fuel was required to keep the station running.

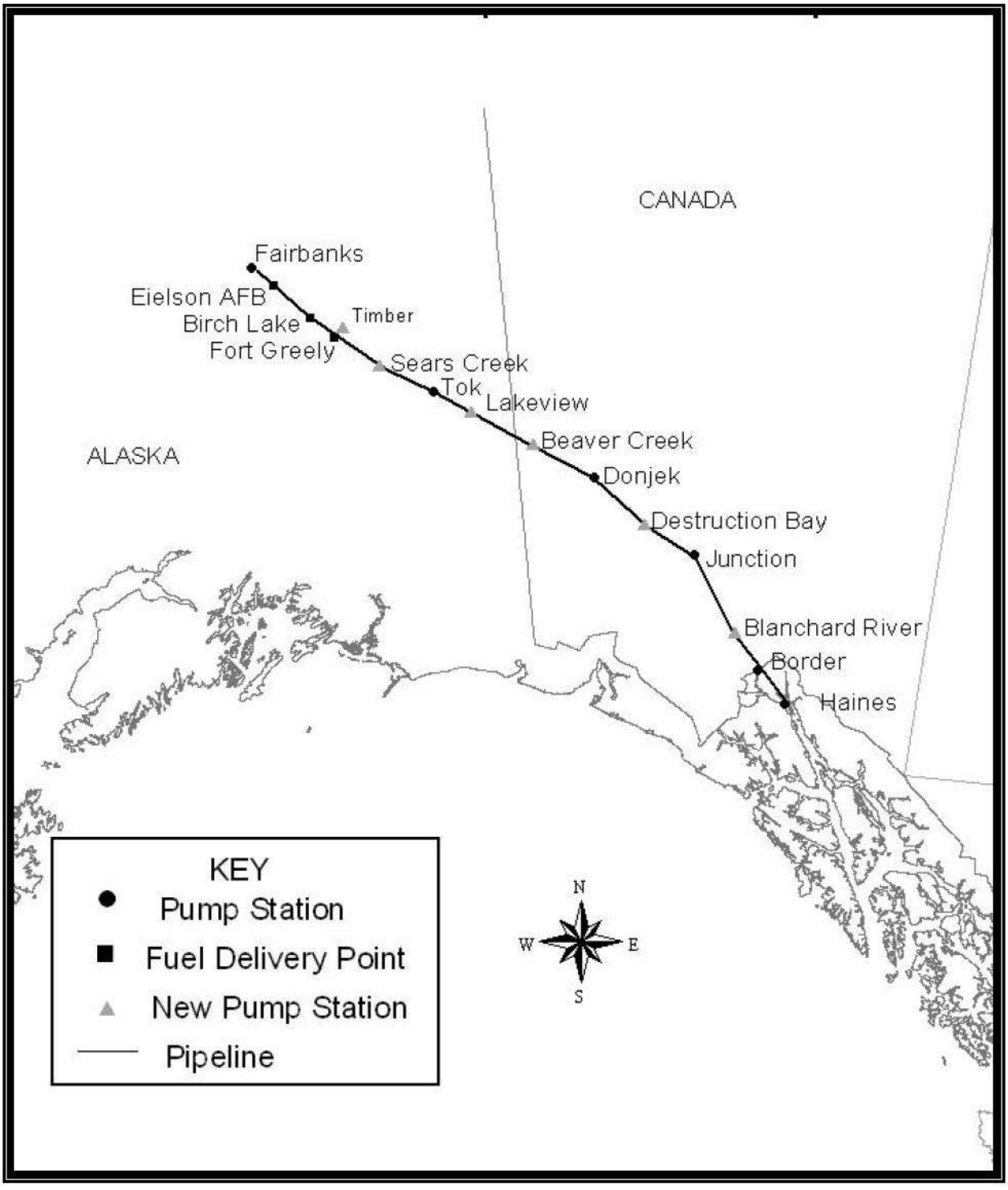
The addition of the six pump stations nearly doubled maximum daily fuel outputs. Previously, operating at the highest pumping capacity put 16,500 barrels a day through the system. This was increased to 27,500 barrels a day. According to former

[86] Department of External Affairs Canada, Note No. 63, Ottawa, April 19, 1962.
[87] Ross, F.K. "Alaska Pipeline Face-Lifting." *Pacific Builder and Engineer*. Vol. 68, No. 9. 1962. pp. 82-83.

employees, the new booster stations were only used to full capacity for several years before military fuel needs decreased again. The stations were put on care-taker status with fewer operating personnel. They were used intermittently when fuel needs escalated.

Figure 33. Blanchard River Pump Station. NARA.

Figure 34. Destruction Bay Pump Station. NARA.



Map 3. Haines-Fairbanks Pipeline: New Pump Stations, 1961–1973.

CHAPTER 7.0 Pipeline Life

Since the majority of the Haines-Fairbanks Pipeline was in remote rural areas, housing was provided on site for pipeline employees and their families. Life at a pump station is an interesting and unique part of the pipeline story. The stations were self-contained communities and as the Tok Terminal foreman described it, "Operating Tok was the same as operating a little city. You had everything. You generated your own power, you made your own heat. You were you own policeman and dog-catcher."[88] The following chapter looks at the lives of employees and family members at the Haines and Tok Terminals. Haines and Tok had the most employees because, in addition to pumping operations, they were also receiving and storing fuel. It was difficult to track down people from the smaller booster stations to record their memories for this document.

7.1 Haines Terminal

Employees at the Haines Terminal lived in town or on the station site. Most people referred to the station as the "tank farm." There were two housing complexes with 16 apartments, located between the tank farm and pumping area. One complex had eight three-bedroom apartments and one had eight two-bedroom apartments. They were two-story units with wood flooring, a kitchen, bathroom, living room and full basement. Former residents recall that the apartments were quite pleasant. There were also bachelor's quarters – more commonly known as the BOQ (Bachelor Officer Quarters). The BOQ had space for ten men and included a dining room, kitchen, living room, shower room and two toilets.

Figure 35. Bill Kelm in back of Haines apartments. Ca. 1959/60. Courtesy Jeannette Menaker.

The housing complex was fenced off from the tank farm and pumping area. The fencing was for the residents' safety and security. Family members rarely ventured into the terminal's working areas. Children could grow up at the station without ever going into the tank farm.

There was a concrete freezer building in front of the apartments, which everyone shared. To save money, families teamed up and ordered groceries wholesale from Seattle. Alaska Steam Ship delivered the food twice a year. Basics such as lemons, apples, oranges and eggs were purchased in bulk.

Haines was unique among the pump stations because it was in a community of around 1,000

[88] Johnny Burnham, interviewed by Kristy Hollinger. 7 May 2002. p 7.

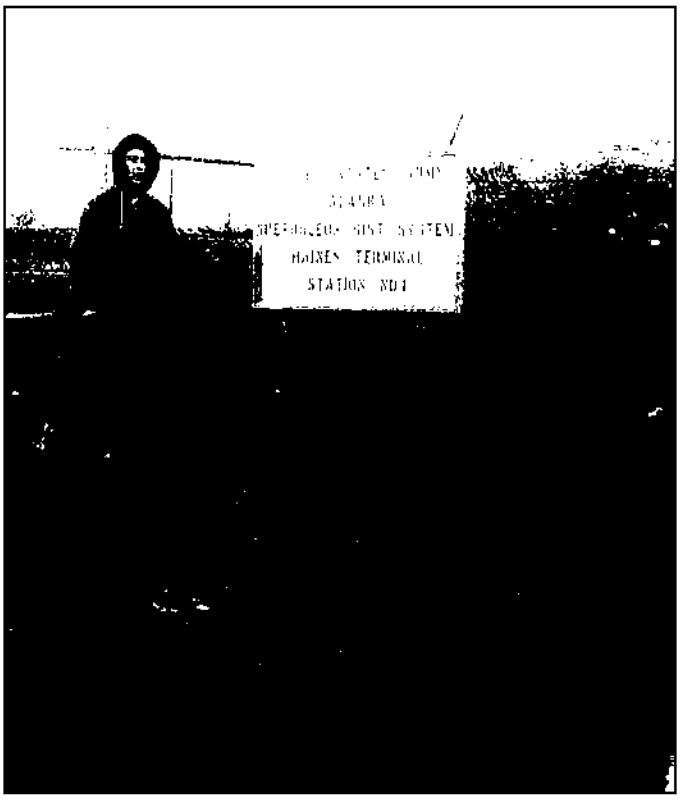


Figure 36. Byrd Kelley at the Haines Terminal front gate, ca. 1957. Courtesy Jeannette Menaker.

Figure 37. Jeanette, Joyce & Douglas Kelley in the dining room at their Haines Terminal apartment. Courtesy Jeanette (Kelley) Menaker.

people. Pipeline families had more recreational and social opportunities. At other stations families were limited to socializing with each other.

One-half to one-third of the Haines Terminal employees did not live in station housing. Yet even those living in town frequently maintained close ties with other pipeline families. There were holiday parties in the BOQ and the women often met for coffee klatches. June Haas remembers, "We had fun, and most of the people at the tank farm were friends. In town we used to go out to the Chilkat Lake when it really froze well and we'd have a fire out there and some of the guys would fix up a generator so we could have lights and music and cook moose steaks."[89]

The Haines Terminal was three and a half miles from the town center. During peak operations there were about 26 children living at the station. A school bus drove to the terminal to take them to school. Jeannette Menaker recalled that they never missed a day of school because of deep snow – a plow drove to the terminal especially to clear the road for their bus.

The arrival of tankers was always a special occasion. Joyce Thomas recalls, "That was a big time out at the tank farm when those ships came in. We would all go out and watch it dock. It was the entertainment."[90]

The Haines-Fairbanks Pipeline was a tool of the Cold War. It was thought that the facilities would be a second strike target by the Soviets if the war ever turned "hot." Most people interviewed did not think they were in danger by living in close proximity to the pipeline. Attack was, however, considered in the design of the project. All apartments had full basements that also served as air raid shelters.

There were pros and cons to living at the station. Living on site eliminated a commute, of course. Since employees were working shift schedules around the clock, it was a nice to have a short walk home at the end of the night. The

[89] June Haas, interviewed by Kristy Hollinger. 12 April 2002. p.7.
[90] Joyce Thomas and Jeannette Menaker, interviewed by Kristy Hollinger, 10 April 2002. p. 6.

Figure 38. Residents had gardens at the station. Here Betty Kelley sits on her front porch with prize turnips. Courtesy Jeanette Menaker.

housing was pleasant, and the rent was affordable. On the reverse side, living and working in the same place with the same people could be overwhelming. And because some men worked through the night, they were trying to sleep during the day. Keeping the noise down was an issue.

7.2 Tok Terminal

The Tok Terminal housing complex originally had 12 apartments in two buildings. One building had four three-bedroom units and the other had eight two-bedroom units. There was also a BOQ which accommodated ten men. Unlike at Haines, most of the Tok Terminal employees lived in station housing. As at Haines, the housing complex was enclosed in a fence for security and safety.

Tok was a very small community and there were few houses available to buy or rent. As more employees were hired, the station apartments quickly filled up. Trailer homes were purchased to accommodate new families. They were used for about five years before more station housing was built.

While the station apartments were pleasant, everyone described trailer living as a miserable experience. The walls were only two inches thick and the heating system was totally inadequate. Anything that touched the sides of the trailer in winter, such as bedding or clothes hanging in the closets, would freeze to the walls. As John Koehler said of the trailers, "you could exist in them but they weren't too warm."[91]

Tok was established as an Alaska Road Commission Camp during construction of the ALCAN and Glenn highways from 1942 to 1946. The 1960 Census recorded a population of 129 people, with another 186 people living nearby in "unspecified" locations.[92] This meant that pipeline employees mostly socialized with each other. Recreational activities available at Tok were mainly hunting and fishing. The BOQ was equipped with a bar for holiday parties. Movies were a popular diversion. The pump stations were on the Army movie circuit for many years, and a film was shown in the BOQ five times a week.

Some residents got cabin fever in the winter, finding the living conditions too stressful. As Johnny Burnham recalled, "Some people didn't stay over a year. One winter

[91] John Koehler, interviewed by Kristy Hollinger. 10 April 2002. p. 4.

[92] *Socioeconomic Community profiles: A Background for Planning. Delta Junction, Dot Lake, Norhtway, Tanacross, Tetlin, Tok.* Northwest Alaskan Pipeline Company, 1980.

would be enough. And then there was others that it didn't seem to bother." Burnham combated the winter blues with physical activity. He became an avid trapper.

Until the mid-1960s, Tok pipeline employees had commissary privileges at Fort Greely. Most families took advantage of the option and drove to Big Delta once a month to stock up. After commissary privileges were revoked in the mid-1960s, residents drove to Anchorage or Fairbanks to buy food.

There was a small school in Tok that served students in grades one through eight. In the mid- 1950s, the school had seven pupils and one teacher. Carly Hanson, pump operator Dwight Hanson's wife, drove the children to school. As the pump station grew, there were about 52 children living at the terminal and a bus was purchased for them. In 1958 a high school was built in Tok. Before 1958 some employees were forced to transfer to another station so their children could have access to education. The Hansons moved to the Fairbanks Terminal when their children reached high school age.[93]

7.3 Booster Stations

Living at the smaller pump stations was quite different than living at Tok or Haines. Most of the booster stations were in isolated, remote areas. The stations had a maximum of about six employees. The six pump stations added to the pipeline in 1961 were architecturally distinct from the original five stations. Instead of apartment housing there were detached 10' x 50', two- bedroom trailers for the station employees and some dorm-type accommodations. According to Richard Duke, who worked at the Lakeview Station, the trailers were not particularly nice. The windows were positioned so high that one had to stand to see outside.[94]

Often the smaller pump station residents had limited education access for their children. In the mid-1950s there were five or six children at the Border Station. They had school lessons with a teacher in the dormitory building. As children grew, families often moved to have access to better education. Residents at these pump stations also had limited access to social activities. Recreation often centered on outdoor pastimes such as hunting, fishing and camping.

Border Station, sometimes known as 48-mile or Rainy Hollow, was not accessible by road during the winter. Station residents kept mobile by airplane. Border experienced heavy snow in the winter months. Elizabeth Karmen remembered the winter of 1956 when "the snow was so high, you wouldn't believe this – we had to go up the upstairs window to look out. And he (Ed Karmen) had to go…change a light bulb in the streets, and …he's on a snow bank and bends down to change the light."[95]

Haines Terminal families often visited Border in the winter for sledding, skiing and curling parties. Ed Karmen flew people to the top of the ski hill in his ski equipped plane. Haines families usually spent the night during these get-togethers. Elizabeth Karmen said, "once a week we'd put on a dinner or supper for the people from Haines that would come up…And we'd feed them…And then somebody else next week would take it over."[96] In the summer Border families visited Haines.

[93] Dwight Hanson and Carley Hanson, interviewed by Kristy Hollinger. 7 May 2002.
[94] Richard Duke, interviewed by Kristy Hollinger. 15 April 2002.
[95] Ed and Elizabeth Karmen, interviewed by Kristy Hollinger. 11 April 2002. p 5.
[96] Ibid. p.7.

7.4 Economic Impact

Approximately 250 employees supported the 626-mile-long Haines-Fairbanks Pipeline during peak operations. The number of employees varied as fuel demands changed. Peak demand occurred in the early 1960s when six pump stations were added to the line. Though the number of workers may seem small overall, the impact they had on nearby communities was important—particularly at Tok and Haines where the largest number of workers were stationed. Jeannie Menaker thought the impact of the pipeline on Haines was significant:

> As far as the impact on the community, I'd say it was huge. It brought in a lot of people from different places with different… ideas. It put a lot of money into the community. Both in the construction…and operation. Then it stayed there as a viable economic entity.[97]

The pipeline pump stations, with the exception of the Fairbanks Terminal, were located in small, remote communities. Some booster stations were in totally unpopulated areas. Haines was the largest town on the pipeline corridor, and even there the addition of between 40 and 50 men with steady, good paying work made an important contribution to the local economy. Many employees were married with children and this increased the population. More goods and services were needed to support the growing community.

The towns further benefited by the provision of 874-money for schools. Since station housing was government owned, occupants were not required to pay property taxes. This 874-money compensated schools for this loss of revenue in accordance with the number of students living at the station. This money was extremely important to local schools and aided in the expansion and maintenance of services.

The pipeline probably affected Tok more than anywhere else along the pipeline corridor. Tok was a small community of 315 in 1960. The presence of pipeline employees played a role in stabilizing the Tok economy. Also, 874-money directly contributed to the construction of a new school in 1958 when the number of children at the station was increasing significantly.

[97] Jeannette Menaker, David Menaker and Joyce Thomas, interviewed by Kristy Hollinger, 10 April 2002. p. 19.

CHAPTER 8.0 Pipeline Shutdown, 1971–1979

The Haines-Fairbanks Pipeline did not close suddenly, unexpectedly, or even simultaneously. The northern half of the system, from Tok to Fairbanks, operated longer than the southern half. Most former employees interviewed were not surprised by the shutdown. The workforce was gradually reduced in the late 1960s. Many employees retired or transferred to the Whittier-Anchorage Pipeline.

The main driver behind the pipeline closure was the increasing cost of maintenance. Investigations revealed significant corrosion problems on the southern half of the pipeline. In 1968 there were five pipeline leaks attributed to weakened metal. The maximum pumping pressure out of Haines was reduced from 1000 pounds per square inch (psi) to 700 psi. This reduced stress on the pipe but also slowed the flow of fuel. In 1970, a study by the U.S. Army Material Command concluded the Haines-Fairbanks Pipeline was no longer needed—providing more fuel storage tanks were built at Eielson Air Force Base and railroad and tanker truck receiving facilities were upgraded.[98]

The Haines to Tok section of the pipeline was mothballed in July of 1971. Operators were instructed to leave the terminal in such condition that it could be reactivated within 30 days if necessary. Station equipment was carefully inventoried, cleaned and left in the buildings. All fuel was pumped out of the pipeline. Then propanol, water and air were successively displaced through the system to clean residual fuel traces from the pipe. The Army permanently closed the southern section of the pipeline one year later, in the summer of 1972.[99]

Starting in the 1970s, the Birch Lake and Fort Greely fuel tanks were gradually taken out of service and disassembled. The tanks were W.W.II type, bolted steel structures similar to those at Fairbanks. As the tanks aged, the bottoms started corroding and they had to be removed. At Birch Lake the soil under and around the tanks was excavated and replaced.[100]

After the southern half of the pipeline was closed in July of 1971, fuel was delivered from Anchorage to Tok by tanker truck or railroad and pumped north as needed. Then in 1973 the Tok to Eielson section of the pipeline was deactivated. The pipeline was scrubbed clean before it was abandoned. Residual fuel left in the pipe could vaporize and produce a combustible mixture. As Thomas Webster stated, "We couldn't guarantee 100% but we did, we did try to purge it (the pipeline) of all fuel. Scrub it clean and wash it down and try to make it as inert as we could." Only 27 miles of the Haines-Fairbanks Pipeline continued operating, from Fairbanks to Eielson Air Force Base.[101]

Though most of the pipeline was deactivated in 1973, the tank farms at Haines and Tok remained in service. The Cold War demanded strategic fuel reserves in the event of war. The Tok tank farm was used for standby storage until 1979 and Haines

[98] "Alaskan Command History 1970." Prepared by the Historian, Office of the Secretary. Joint Staff Headquarters ALCOM. 71-73.
[99] "Alaskan Command History 1972." Prepared by the Historian Office of the Secretary, Joint Staff, Headquarters ALCOM.
[100] Thomas Webster, interviewed by Kristy Hollinger. 29 October 2002. p.8.
[101] Ibid. p.7.

Figure 39. Example of a 3" pig used in the CANOL Pipeline. Courtesy George Lyle.

was used until 1988. The fuel had to be rotated out of storage every few years so it did not spoil. All the fuel was transported by tanker truck. Rotating such large quantities of fuel was a big job, and as Earnest Kelly stated, "We used to have a hell of a time juggling storage."[102] Thomas Webster said, "Sometimes we were having to haul JP4, for example, from here (Anchorage) to Tok to rotate the product. And that was not only expensive, but we just increased our exposure, our risk. Highway accidents, you know, what-have-you."[103]

In 1979 the Army decided to close the Tok tank farm. The Tok to Fairbanks section of the pipeline was briefly reactivated to pump all remaining fuel out of the station. The Army estimated reopening the line would save $500,000.00 in transportation costs and closing the tank farm would save another $400,900.00 in annual operating costs.[104]

Reactivating the pipeline for this final service necessitated checking for corrosion that may have developed during the five years the line lay dormant. A linalog survey was initiated in 1978. A linalog is an instrumented pig that measures pipe thickness, indicating where weakened metal is located. A pig is a scraper used to clean a pipeline. The linalog was pushed through the pipeline with water. The survey revealed that over 200 sections of pipe needed replacing. After the line was repaired, it was discovered that water had frozen in the pipeline in the Shaw Creek Flats area, north of Fort Greely, during the linalog survey. The pipeline was underground in that location. Repair crews dug up the line and located ice by shooting holes in the pipe with a 30-06 rifle. Patches were welded over the bullet holes. Eventually the line was repaired and all fuel was pumped out of Tok Terminal in July of 1979.[105]

Figure 40. Water shooting out of a bullet hole during pipeline repairs.

Several groups expressed interest in using the pipeline for other purposes as the system was phased out. The Canadian government considered using the line to transport fuel for civilian use in the Yukon. After the Canadians conducted a feasibility study, they concluded the repair and maintenance costs did not justify using the system.[106] There was also talk of using the pipeline to transport natural gas in the opposite direction, from Fairbanks to Haines. A 1979 study explored the possibility

[102] Earnest & Laura Kelly, interviewed by Kristy Hollinger 11 April 2002. p. 26.
[103] Thomas Webster, interviewed by Kristy Hollinger 29 October 2002. p. 6.
[104] Press Release, 78-6-20-94. "Pipeline to Reopen." Public Affairs, 172d Infantry Brigade. Fort Richardson, Alaska. 22 June 1978.
[105] Vern McConnell, interviewed by Kristy Hollinger. 12 July 2002. p. 2,3.
[106] Manders, P. *An Evaluation of the Economics of Utilizing the Haines-Fairbanks Pipeline for Civilian Purposes*. Economic Staff Group, Norther Development Branch, D.I.A.N.D. 29 April 1970.

of using the Haines Terminal for an Alaska Marine Highway base.[107] None of the projects were carried out. As early as 1970, U.S. Army Alaska considered and rejected commercial use of the pipeline "due to the lack of funds for rehabilitation and the possible magnitude of pollution that could occur."[108]

8.1 Impact on the Communities: Haines and Tok

The pipeline was shut down gradually over the years, cushioning the economic impact of the closure on nearby communities. The booster stations in particular only had a couple employees each by 1970. Haines and Tok, the major towns on the pipeline corridor, had the largest staff and therefore would have felt the greatest effects from the shutdown. Operating personnel were slowly cut back in the late 1960s and early 1970s. The tank farms continued to be used until 1979, so some employees were kept on hand for tank maintenance. Tok still had seven employees that final year.

As pipeline operations were winding down in the late 1960s and early 1970s, new industries were emerging in Haines and Tok, moderating the impact of the pipeline shutdown. Tourism was expanding in Tok and helped stabilize the town's economy. The town population increased from 577 people in 1970 to 696 people in 1980.[109] The Bureau of Land Management used the pump station for several years for its Fortymile Resource Area headquarters. The Haines population also remained stable. Tourism and logging expanded, bringing more money and people to the community.

[107] Human-McDowell Associates. "A Study of the Feasibility of Converting the Haines Tank Farm to a Maintenance, Refueling and Watering Facility for the Alaska Marine Highway System." For Legislative Affairs Agency, Research Division. Gregg K. Erickson, Director. Juneau, AK. 30 April 1979.

[108] "Alaskan Command Annual History 1970." Prepared by the Historian, Office of the Secretary, Joint Staff Headquarters ALCOM.

[109] *Socioeconomic Community Profiles, A Background for Planning. Delta Junction, Dot Lake, Norhtway, Tanacross, Tetlin, Tok.* Northwest Alaskan

CHAPTER 9.0 Environmental Impacts

The Haines-Fairbanks Pipeline operated for a number of years without significant problems. Acidic soil conditions contributed to pipe corrosion, and leaks occasionally developed as the system aged.

From 1955 to 1972 there were 40 recorded spills on the Haines-Fairbanks Pipeline. Twenty-eight of these occurred in 1956 during the line freeze-up when the line was deliberately cut to purge ice from the system. Of the other 12 recorded spills, four were caused by bullet holes, six were from corrosion, one from a vehicle hitting a valve, and one from a power pole auger accidentally punching through the pipeline.

Some of the bullet hole leaks were deliberate attempts to tap the line for fuel. Others may have been unintentional but were the result of a blatant disregard for safety. One incident occurred when someone used the pipeline for a backstop while shooting cans for target practice. John Koehler recalls the power pole accident:

> I remember up around Delta Junction, Harding Lake, where the line was buried. Golden Valley Electric were down there in the winter punching holes to set poles, and in one place they got right on top of the pipe, and they thought they were on a rock. They moved and punched through the pipe! I imagine they got a bath. We repaired where they chewed the pipe up.[110]

The Haines-Fairbanks Pipeline was buried or laid directly on the ground, without any protection from the elements. Lengths of pipe were exposed to different soil and surface conditions that changed seasonally and created the electrical conditions conducive to corrosion. The corrosion problems mostly occurred in the later years of operations as the pipeline metal aged.

The largest pipeline leak prior to 1972 occurred in the Yukon Territory in May of 1968. Acidic soil caused pipe corrosion and 4,000 barrels of diesel fuel leaked from the line. The fuel permeated down a slope into Dezadeash Lake. Cleanup crews set up catch basins to collect fuel flowing down the slope and used straw to soak up the fuel in the lake. The straw was collected and burned. The effects of the spills were studied in 1972. The study concluded that many areas where fuel was spilled were still devoid of vegetation.[111]

Pipeline corrosion control technology was limited when the Haines-Fairbanks Pipeline was designed. Before the invention of linalog technology in the late 1960s, there was no way to inspect for corrosion except by visual survey. Visual inspection of buried pipe was difficult and time-consuming. It required digging a sample of holes to get an idea of the pipe condition. The 1970s' investigations revealed that

[110] John Koehler, interviewed by Kristy Hollinger 10 April 2002. p. 5.

[111] Rickard, W.E. & Deneke, F. (April 1972) *Preliminary Investigations of Petroleum Spillage, Haines-Fairbanks Military Pipeline*, Alaska. Corps of Engineers, U.S. Army: Cold Regions Research and Engineering Laboratory. Hanover, New Hampshire.

much of the pipeline would be subject to corrosion unless protective methods were taken. Wrapping the entire pipeline to insulate it from contact with the ground was too costly. Annual maintenance programs were implemented to identify and repair the highest risk areas.[112]

Besides fuel spills along the pipeline corridor, the pump stations also had an impact on the environment. Fuel and hazardous waste was burned, spilled and buried at these stations. Diesel fuel mixed with chemical defoliants was sprayed on the Tok and Haines tank farms to inhibit vegetation growth. Documentation of the contamination and subsequent restoration work is available at the Department of Public Works, Environmental, U.S. Army Alaska. A full discussion of environmental investigations and cleanup efforts is beyond the scope of this report.

There also was contamination through the aerial spraying of chemical defoliants along the corridor. There is concern that the defoliants polluted vegetation, which was in turn consumed by people or wildlife. There are also two accounts of Klukshu Indian Village residents in Canada being directly hit by the herbicide during the spraying. The village was adjacent to the pipeline right-of-way. A 1994 study by Stan Gray investigated the Klukshu Indian Village's exposure to the defoliants. The author concluded that there were hazardous levels of dioxin contamination in the soil. The long-term, overall effects of the chemical defoliants along the entire corridor are not fully known.[113]

The Haines-Fairbanks Pipeline was built and operated according to the standards of the day. As stated in an investigative report, "Environmental contamination at the site is the result of routine past operations. Waste management practices at that time were typical of those practiced at other military POL facilities."[114]

9.1 Haines-Fairbanks Pipeline and the Trans-Alaska Pipeline

The 1968 discovery of oil in northern Alaska set the stage for the Trans-Alaska Pipeline System (TAPS) that would run 800 miles from Prudhoe Bay to Valdez. Pipeline technology had advanced significantly in the years since the Haines-Fairbanks Pipeline was designed and built. Corrosion control methods in particular had come a long way. The Trans-Alaska Pipeline designers had the opportunity to study 30 years of Alaskan pipeline operations and learn from past mistakes. Vern McConnel recalled, "When they were in the design stage on the Alyeska line they'd talk to us a lot…Yes they were very interested in our operation."[115] Tom Webster remembers that some Haines-Fairbanks Pipeline employees transferred to work for the TAPS operation. No doubt their experience and knowledge contributed to the project. In this way the Haines-Fairbanks Pipeline played some small role in facilitating better managed and designed Alaskan pipelines.

[112] Thomas Webster interviewed by Kristy Hollinger 29 October 2002.

[113] Gray, Stan. "The Spraying of Herbicides and the Testing for Contaminants at the Klukshu Indian Village". Report to Lawrence Joe, Champagne and Aishihik First Nations. March 1994.

[114] Harding Lawson Associates 'Work Plan Fuel Terminal Site Investigation, Haines, Alaska' 10 Nov. 1992. p. 2-9.

[115] Vern McConnell interviewed by Kristy Hollinger. 12 July 2002. p. 7.

CHAPTER 10.0 Conclusions

The Haines-Fairbanks Pipeline was an important logistical asset during the Cold War. The entire pipeline system operated for 16 years while smaller segments of the line continued working for another eight years. Even after major sections of the pipeline were deactivated, the tank farms at Haines and Tok continued to be used for fuel storage. The 27-mile section of pipeline between Eielson Air Force Base and Fort Wainwright, known as the Fairbanks-Eielson Pipeline, operated until 1992.[116]

In 1961 it was estimated that the Haines-Fairbanks Pipeline saved $5 million in annual shipping costs. Unlike the incredibly expensive CANOL Pipeline, the project paid for construction costs within the first six years of operation.[117] The 1961 construction of six additional pump stations added $6 million to the project's cost. Again, the savings in expedient fuel deliveries balanced the cost.

Pipeline employees had an important job and they made a significant contribution to supporting Alaska's Cold War missions. As Frank Haas said, "They (Fairbanks) always got the fuel when they needed it. So we felt real good about that."[118] Chief of Petroleum, Thomas Webster said of the employees, "There's not a man that I can think of in that group that I wouldn't take my hat off to any time. They were good men."[119] Pipeline employees were paid well, and most said they enjoyed the work. As Johnny Burnham said, "Overall it was a heck of a good job."[120] Conditions could be difficult living in remote, isolated areas and working in extreme weather conditions. The occupational hazards associated with handling volatile petroleum products required that every employee operate to the highest professional standards.

Figure 41. Timber Pump Station, May 2002. From collection of USARAK.

Today the physical remains of the Haines-Fairbanks Pipeline are rapidly disappearing. Though the right-of-way corridor can still be seen in places, most pipe has been removed and salvaged. The pipe in Canada was removed from 1989 to 1991. Part of Tok Terminal was demolished in the summer of 2002 and the demolition should be completed in the summer of 2003. Haines Terminal is also scheduled for demolition in 2003. Environmental restoration work has been occurring at Haines, Tok and Fairbanks since the early 1990s. Some of the other U.S. pump stations are still standing,

[116] This section of the pipeline was subject to major rehabilitation in the 1980s when the pipe was coated to protect against corrosion.

[117] Ross, F.K. "Alaska Pipeline Facelifting" *Pacific Builder and Engineer.* Vol 68 No. 9. 1962.

[118] Frank Haas, interviewed by Pam Moore 29 April 1992. On file at the Sheldon Museum & Cultural Center, Haines. Tape # 92.210.01.

[119] Thomas Webster, interviewed by Kristy Hollinger. 29 October 2002. p. 12.

[120] Johnny Burnham, interviewed by Kristy Hollinger. 7 May 2002. p. 15.

though their condition is deteriorating. These stations are no longer under U.S. Army Alaska control.

The Canadian pump stations were mothballed when the Haines to Tok section of the line was deactivated. When the Tok to Eielson section of the line was closed, the U.S. Army started clean up of the Canadian pump stations. This involved digging up garbage pits and transporting waste back to the United States. Tom Webster said, "We backhauled just about everything out of Canada that they wouldn't allow us to dispose of there. And we worked closely with them (Canadian government) on that."[121] The stations reverted to Canadian control when the pipeline was closed.

The Haines-Fairbanks Pipeline impacted the environment in Canada and Alaska. The pipeline right-of-way and pump stations altered the natural landscape and fuel spills contaminated the environment. The long-term effects of these impacts on subsistence resources, native Alaskan and Canadian traditional life-styles and health, and the health of pipeline employees are important subjects that are beyond the scope of this report. It is recommended that these topics be explored in future studies.

Today we look at the Haines-Fairbanks Pipeline with the advantage of hindsight. The lack of consultation with native groups for use of the land and the environmental damage resulting from the operations must be acknowledged – but it must also be understood in the context which the system operated. Pollution control, cultural resources management, and consideration for tribal sovereignty were not issues addressed the way they are today. At the time of its operation, the Haines-Fairbanks Pipeline was considered the best means of conveying the vast quantities of fuel needed in interior Alaska.[122]

Table 4. Current Status of Haines-Fairbanks Pipeline pump stations (2003).[123]

Haines, Alaska	Demolition scheduled for 2003
Border, Canada	Demolished
Haines-Junction, Canada	Standing
Blanchard River, Canada	Converted to highway maintenance facility
Destruction Bay, Canada	Standing
Donjek, Canada	Standing
Beaver Creek, Canada	Standing
Lakeview, Alaska	Converted to highway maintenance facility
Tok, Alaska	Demolition commenced 2002, scheduled for completion 2003
Sears Creek, Alaska	Standing
Timber, Alaska	Standing
Fort Greely tank farm, Alaska	Demolished
Birch Lake tank farm, Alaska	Demolished
Fairbanks, Alaska	Standing

[121] Ibid. p. 3.

[122] For more information on pipeline impacts to cultural resources at Tok see Jim Simon's (2002) *ALCANGO (Haines-Fairbanks Pipeline) Tok Terminal Traditional Cultural Property Evaluation Report.* For information on pipeline impacts at Haines see Northern Land Use Research Inc. (1998) *Cultural Resource Survey of the Haines Fuel Terminal, Haines, Alaksa: Final Report on the Archaeology of Tanani Point.*

[123] Douglas Johnson, Chief Environmental, Department of Public Works. 2003. Personal Communication with author.

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