From South Africa to Colorado: The Mining Code Books

By
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We live in an age of instant communications. Today, cell phones are extensions of our bodies. E-mails, fax machines, camera phones, voice mail, and teleconferencing are now part of our daily lives. Communication via satellites is an accepted way of life. As mining historians, it is interesting to contemplate the problems that a mining engineer or mining investor faced in the late 1800s and early 1900s while traveling or working in isolated parts of the world. It took weeks to send mail between continents and months to receive a response. Phone service did not exist in most mining camps.

With the invention of the telegraph by Samuel Morse and his partners, the world grew smaller for the mining engineer. At first, communications by telegraph were over short surface lines, mainly in metropolitan centers, but gradually service improved and rates fell as telegraph lines extended across continents and oceans.[1] In 1866, the first successful trans-Atlantic line was completed between Great Britain and a tiny fishing village in Newfoundland. By 1907 the first trans-Pacific cable was completed. Now a mining engineer or investor could communicate quickly with a company's home office.

The new invention did have a few inherent problems. The Morse code reduced each letter and number to specific short or long electric impulses, referred to as dots and dashes, separated by a definite time break (Figure 2). If the operator were careless and inconsistent in time breaks, a letter could be misinterpreted, thus changing the message. For example, the letter "A" in Morse code is represented by dot dash, the letter "E" by a dot, and the letter "T" by a dash. If an operator were careless with the interval between impulses, "A" could be received as "ET." Operator errors thus resulted in mutilated or undecipherable words being

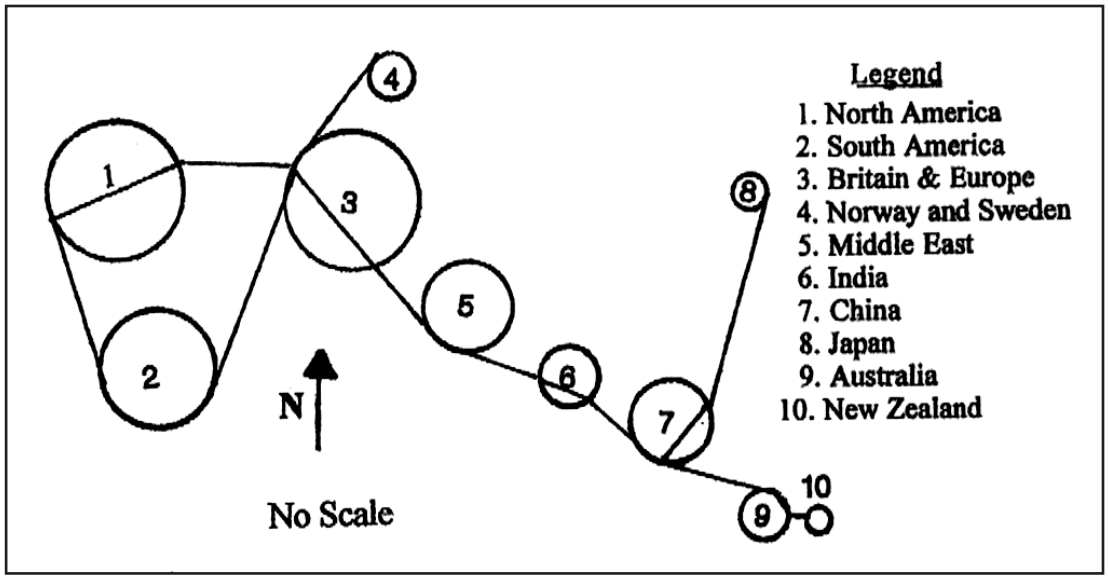


Figure 1: Schematic of the world's major land and marine cables from Bedford McNeill's, Mining and General Telegraphic Code*, 1905. (Authors' collections.)*

MORSE SIGNALS, ALPHABET, AND FIGURES,

Letter.	Morse Signal.	Letter.	Morse Signal.	Figures.	Morse Signal.
A	• —	N	— •	0	— — — — —
B	— • • •	O	— — —	1	• — — — —
C	— • — •	P	• — — •	2	• • — — —
D	— • •	Q	— — • —	3	• • • — —
E	•	R	• — •	4	• • • • —
F	• • — •	S	• • •	5	• • • • •
G	— — •	T	—	6	— • • • •
H	• • • •	U	• • —	7	— — • • •
I	• •	V	• • • —	8	— — — • •
J	• — — —	W	• — —	9	— — — — •
K	— • —	X	— • • —		
L	• — • •	Y	— • — —		
M	— —	Z	— — • •		
		CH	— — — —		

Figure 2: Morse code letters and numbers from McNeill's code, 1905. (Authors' collections.)

sent or received.

To overcome this problem, provide some security for confidential matters, and to express a phrase in a single word and thereby reduce its cost, telegraphic code books were introduced. These appeared not only for general use, but were also adapted to fit the needs of the mining world. Use of code books became common in the late 1890s and early 1900s, and all followed essentially the same format.

Many included a section on undecipherable words, and these words were common, as some of the coded messages we examined show. To help in deciphering errors, Bedford McNeill's code book, the *Mining and General Telegraphic Code*, listed the possible substitutions, as shown in Figure 3. For additional help, the publisher offered *McNeill's Terminal Index*, advertised as "invaluable for quickly deciphering mutilated code words."[2]

One of the earliest code books was the *Pacific Cryptograph*, published in San Francisco in 1874 and advertised for use by operators in mining stocks, mine superintendents, bankers, and brokers. In 1909, the J. George Leyner Engineering Works Company of Denver listed ten different books in its catalog. At least two—McNeil's *Mining and General Telegraphic Code*, and Moreing and Neal's *New General and Mining Telegraphic Code*—were specifically designed for mining, while others were designed for general trade.[3]

Those books designed for the mining industry were advertised as satisfying the needs of mining professionals. The title page of McNeill's code stated that it was "arranged to meet the requirements of mining, metallurgical and civil engineers; directors of mining, smelting and other companies; bankers; stock and share brokers; solicitors; accountants, financiers and general merchants." A similar statement on the cover page of Moreing and Neal's code stated that the book was designed for use by "mining companies, mining engineers, stockbrokers, financial agents and trust and finance companies."

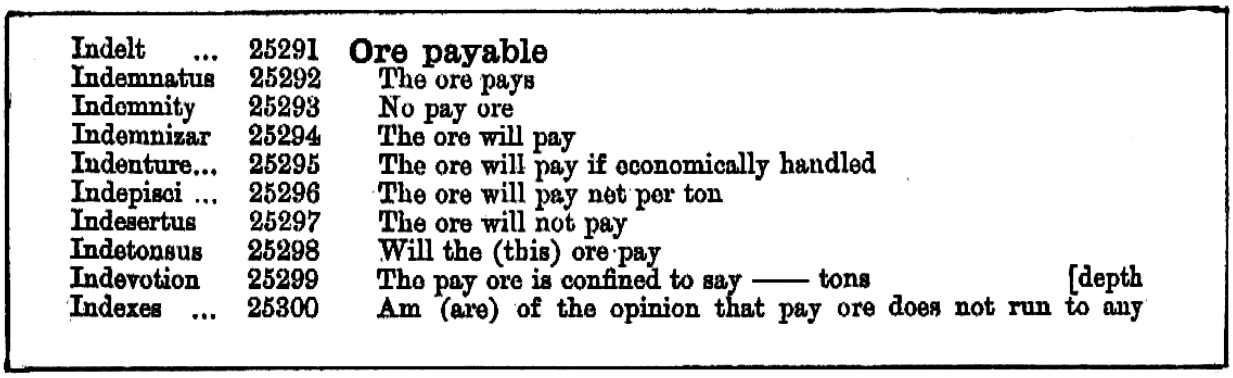
These books contained thousands of code words, consisting of a group of letters selected to represent a sentence, phrase, or question. Figure 4 shows a partial page from McNeil's code. The letters within the group were selected to reduce the possibility of misinterpretations due to their similarities in Morse code. In addition to the code word, each word or phrase was given a number. In McNeill's code, word number 13375 was DECOCTIONS, which stood for "explorations have been carried down to the water level."

The code word's number could be important for confidentiality. The sender and receiver of

MORSE SIGNALS, ALPHABET, AND FIGURES, with some possible Substitutions.

Letter.	Morse Signal.	Some possible Substitutions.
A	• —	ET
B	— • • •	DE NEE NI TEI TIE TS
C	— • — •	KE NN NTE TAE TEN
D	— • •	NE TEE TI
E	•	

Figure 3: A portion of the Morse code signals with substitutions, from McNeill's code, 1905. (Authors' Collections.)



Indelt ...	25291	**Ore payable**
Indemnatus	25292	The ore pays
Indemnity	25293	No pay ore
Indemnizar	25294	The ore will pay
Indenture...	25295	The ore will pay if economically handled
Indepisci ...	25296	The ore will pay net per ton
Indesertus	25297	The ore will not pay
Indetonsus	25298	Will the (this) ore pay
Indevotion	25299	The pay ore is confined to say —— tons [depth
Indexes ...	25300	Am (are) of the opinion that pay ore does not run to any

Figure 4: A portion of page 422 in McNeill's code showing typical code words. (Authors' collections.)

messages could agree that, for a certain time interval, the code sent would be counted a certain number before or after the actual code word. Thus, a sender wanting to send code word number 13375 could, if previously agreed, count one hundred words before and send 13275, DEBRIDER, which meant "expert should not see."

These codes covered their subjects comprehensively. McNeill's *Mining and General Telegraphic Code* contained over forty-five thousand code words on matters ranging from mining terms, minerals, and assaying to surveying statements, lists of banks and finance companies, money, and weights and measures. The compiler, Bedford McNeill, was an associate of the Royal School of Mines and other British mining societies. His code was published by Whitehead, Morris & Co., Ltd., London, and by the Scientific Publishing Co., New York. The copies in each of the authors' personal collections were printed in 1905, but references show an earlier edition in use prior to that date.

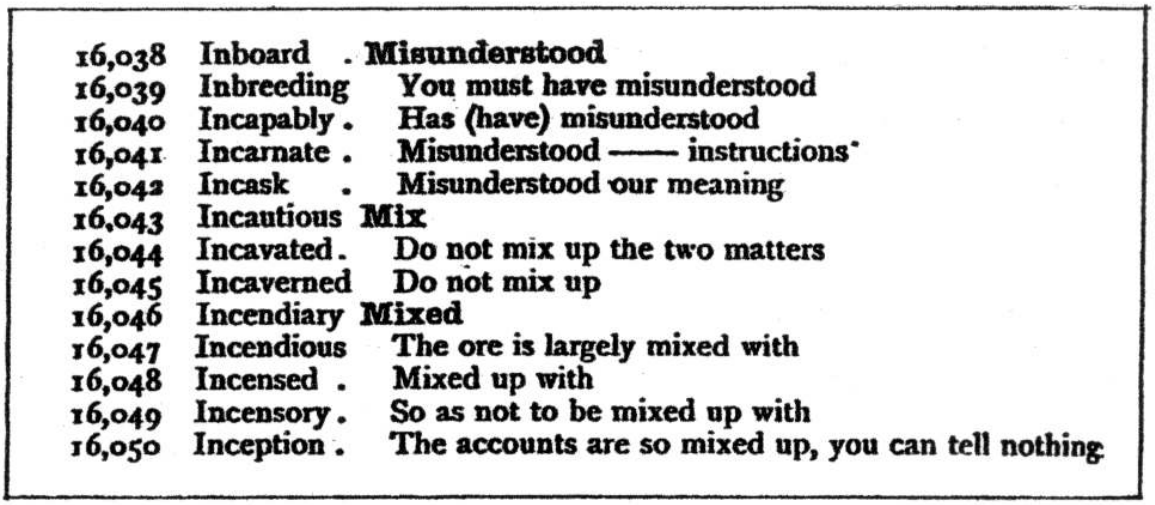
Part I of McNeill's code contains an alphabetical listing of code words for general sentences. Part II contains code words for numbers, money, weights, and banks. The first code word for the letter A is AALEN, number 00001, followed by AALFANG, number 00002, for the word "abandon." The next forty-eight code words represent different phrases and questions involving the word abandon. Number 00025 is the code ABARRADO for "abandon the mine." The last code in the main section is THREEPENNY, number 44572, for "within the mineral zone."

The last section of the book contains code words for each individual. The code word for mining engineer is GIGGLING, while that for a mine captain is BASTIMENTO. A long section contains codes for numbers, starting with the number one (TRAINBANDS), and continuing to millions (UNFOSTERED).

C. Algernon Moreing and Thomas Neal's *The New General and Mining Telegraphic Code*, originally printed in 1888, went through many editions. The ninth American edition, published in 1905, contains 36,898 words and 29,632 sentences. Figure 5 is a portion of a typical page from that book.

Moreing was the senior partner in the international mining consulting firm of Moreing and Berwick, with whom Herbert Hoover was associated early in his career. Neal was also involved in international mining operations. He was secretary and a board member—along with Thomas Burrell Berwick, Moreing's partner who reviewed and proofed the code book—of both the Montana Mining Co., Ltd., and the Mines Company, Ltd., formed by British investors after they purchased the Drum Lummon Mine in Montana. These were prominent mining men, cognizant of the need of field engineers and geologists for security and brevity in their telegraphic communications.[4]

The first part of Moreing and Neal's code



16,038	Inboard .	**Misunderstood**
16,039	Inbreeding	You must have misunderstood
16,040	Incapably .	Has (have) misunderstood
16,041	Incarnate .	Misunderstood —— instructions
16,042	Incask .	Misunderstood our meaning
16,043	Incautious	**Mix**
16,044	Incavated .	Do not mix up the two matters
16,045	Incaverned	Do not mix up
16,046	Incendiary	**Mixed**
16,047	Incendious	The ore is largely mixed with
16,048	Incensed .	Mixed up with
16,049	Incensory .	So as not to be mixed up with
16,050	Inception .	The accounts are so mixed up, you can tell nothing

Figure 5: A portion of page 324 in Moreing and Neal's New General and Mining Telegraphic Code*, 1905, showing typical code words. (Authors' collections.)*

book details subjects ranging from matters of development work, like the depth of an incline or the examination of a prospect, to a series of code words to use to describe the degree of honor of one's associates.

Like McNeill's code, Moreing and Neal's *New General and Mining Telegraphic Code* contains a long list of bankers and financial houses. Its choice of code words is interesting. The Union Bank of London, Ltd., is WORSHIPED, and the Union Bank of Scotland is WORST. The Bank of California is WOODCULVER, while J. P. Morgan & Co. is WORKTABLE, N. M. Rothschild is WORMSHAPED, and British South Africa Co. is WRAP. But WRONGDOER is the code for the South African Prospecting and Mortgage Corporation, Ltd., and Wells Fargo is WORTHLESS.

Other interesting code words applied to personnel. If a message used the word IMAGEMAN, the sender was describing a good mining captain, while IMAGERY refers to a mining engineer. The book is not as complimentary to geologists. The word for geologist is ENDWISE, and an experienced geologist is ENEMIES. The book also contains code words for both American and English money. American money is broken out in cents, dollars, hundreds, and thousand categories. The codes for English money include 1,650 words for various categories.

Another section concerns ordering supplies and equipment. Send a supplier the word ZOOPHAGA and you would receive a "Harling's 6[-inch] transit theodolite divided on silver to 20 seconds with tripod and case all for 26 pounds 10 shillings." If you were a promoter, the code ZINKENITE would direct the recipient to "send report &c. to the Financial Times." Sending ZOOLOGER to the American Code Company, 83 Nassau Street, New York, would request them to "send copy of Moreing and Neal's Mining Code, price one guinea." *Moreing and Neal's Mining Code* is probably an earlier edition of the *New General and Mining Telegraphic Code*.

McNeill's code was probably one of the most widely used, judging by the many references to it in the literature. An important use of the book occurred in southern Africa during a tense political moment that ultimately led to the Boer War. The discovery of diamonds in the Kimberly area and the later discovery, in 1886, of gold on the Witwatersrand, in today's South Africa, started major changes in the politics of southern Africa. The gold discovery was located in what, at the

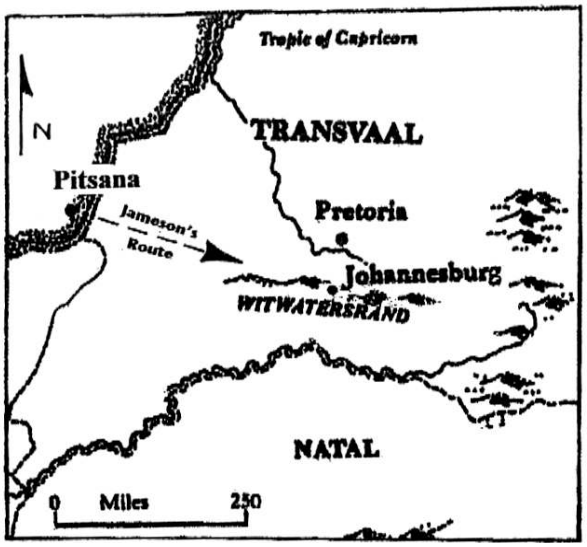


Figure 6: A detail from a map of South Africa indicating the route of Jamison's Raid. (Authors' collections.)

time, was the Transvaal, one of the poorer areas of the Boer States.

News of the discovery caused a rush similar to that to California and subsequent locations. Among the new arrivals were Cecil Rhodes and other diamond magnates from the Kimberly area. Within a short time the influx of miners, prospectors, and others changed the tranquil rural agricultural lifestyle of the Boers into the bustle of an industrial mining environment. The Transvaal became one of the wealthiest of the Boer states, but the Boers, under Paul Kruger, saw their way of life threatened and moved to restrict the newly arrived, mainly British, miners.

These restrictions ranged from denying the miners the right to vote to a tightly controlled dynamite concession held by the Boers. Prominent mining men and the companies they represented organized a "Reform Committee" to attempt to convince Kruger to cooperate in solving problems. Among those on the Reform Committee were the Rand Mines and its chairman, Lionell Phillips; John Hays Hammond; Frank Rhodes, the brother of Cecil Rhodes; and Hans Sauer, a medical doctor and mining investor. When no progress occurred, Rhodes and a select group met in the office of The Gold Fields of South Africa, Ltd., and organized what came to be called the Jameson Raid.[5]

The plan was for Dr. Star Jameson to organize and arm a force of men, through Rhodes' British South African Company, who would be trained in Rhodesia. A false rumor would then be spread that the Boers were attacking Johannesburg, giving Jameson cause to ride to the rescue.[6] During the entire planning process, including the final movement by Jameson, coded messages passed between the players. The Reform Committee used the code word FLOTATION to identify the proposed raid.

Unfortunately for the scheme, some of the critical messages were scrambled during transmission. A few days before the day set for the raid, the Reform Committee started to make some progress with Kruger. Then more delays occurred, which caused Jameson and his troops in Rhodesia to lose patience. Sam Jameson, Star's brother, sent him a coded message ordering him to postpone the raid. But Star Jameson decided to move on his own, and sent a coded message to Rhodes stating that he would move "tomorrow night" unless he heard from Rhodes.

Amidst much confusion, the telegraph wires were cut and a message telling Jameson to hold back failed to reach him. The Boers somehow found out about the raid and were waiting for Jameson and his men, who were quickly captured as they crossed the border. At first, rumors suggested that the Boers had obtained a copy of the code book. However, Hans Sauer had heard about planning for the raid from several people long before it took place and before he became a member of the Reform Committee. Newspaper reporter Flora Shaw also became aware of plans for the raid. She corresponded with Rhodes through many telegrams, questioning him about his intentions. Rhodes assumed the code name VELDSCHOEN and Shaw became TELEMONES.[7]

It is much more likely that instead of crack-

ing the code, the Boers became aware of the plan through other sources and started to monitor the large force of foreigners training in Rhodesia. Then, when searching the captured raiders, the Boers discovered numerous coded messages between the various players, along with the key: McNeill's code. Rhodes and his co-manager of Gold Fields, Charles Rudd, were disgraced and resigned their positions. John Hays Hammond, Frank Rhodes, and others were sentenced to be hanged, but, in a political move, Kruger accepted a fine of twenty-five thousand dollars for each and expulsion from the Rand. The Jameson Raid is regarded by many as the start of the Boer War.

The coded message Sam Jameson sent to Star Jameson reads:

Message:	Code words:
It is absolutely necessary	GUALDON (#23391)
to postpone	LATTAJUOL (#27201)
the raid.	FLOTATION.[8]

Star Jameson's final message ran:

Message:	Code words:
I will start tomorrow	PROHOMBRE (#35668)
night	HALLIER (#23730)
without fail.	DELIRANTE (#13626)

Mine officials usually put McNeill's code to more prosaic uses than international intrigue. Among the companies that relied on it was the Bunker Hill in Kellogg, Idaho, one of the Coeur d'Alene's larger mining companies. Fred Bradley assumed management of the Bunker Hill Company in 1893, and became president in 1897. Bradley resided in San Francisco, while Stanley A. Easton lived in Kellogg as the local manger. Their confidential correspondence occurred in code. A typical coded message, dated 30 April 1908 and quoted in Katherine Aiken's book on Bunker Hill, reads: "For the entire month of April expect the surplus will amount to about $70,000."[9]

Message:	Code words:
For the entire month of April	ANVALID (#02602)
expect the surplus will amount to about	REFINACION (#37388)
$70,000.	VERSUFT.

The archives of the Western Museum of Mining and Industry, in Colorado Springs, Colorado, retain a most interesting series of coded messages involving Winfield Scott Stratton. Stratton discovered the Independence Mine in the Cripple Creek District of Colorado on 4 July 1891, and the story of that discovery and of the wealth that the mine produced is well known.[10]

Eventually, Stratton decided to sell the mine, and, on 2 February 1899 in the presence of the well-known mining engineer T. A. Rickard, signed a contract with Verner Reed. Reed agreed to act as Stratton's agent in negotiations with a British company, the Venture Corporation, the sale process to start with Rickard's evaluation of the mine for Venture.

Stratton, Reed, Rickard, and various officials of the Venture Corporation communicated by both letter and telegram. They employed McNeill's code to keep matters secret from the investing public during the long period of negotiations between parties on two continents—an important consideration given the speculative nature of mining stocks. To disguise even the persons involved, a number of the parties used code names. Stratton became MORENO, Reed adopted VARINO, Rickard's moniker was BENDIGO, and George Butcher, an official at Venture's London

office, used CYGNUS.

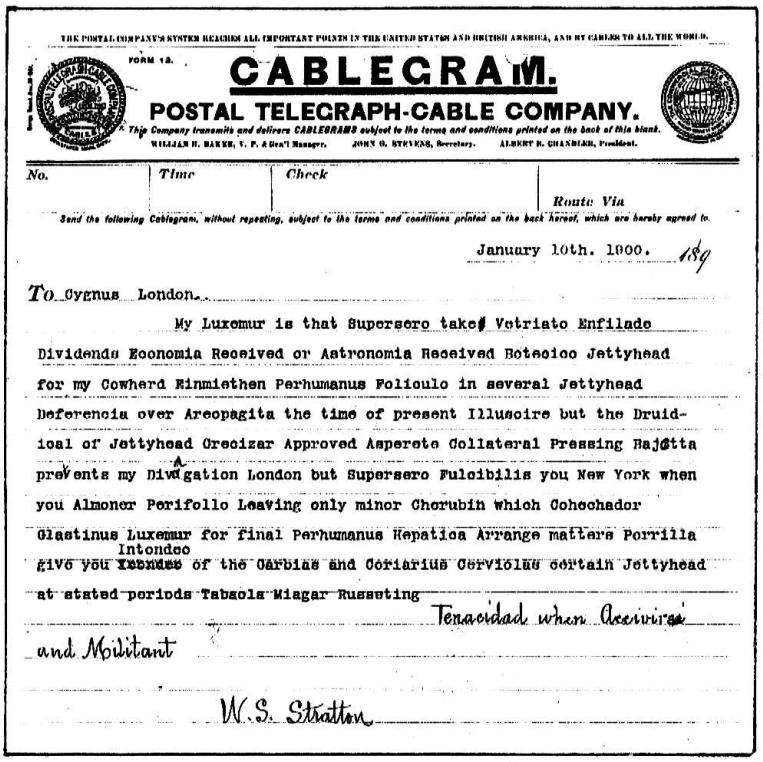
On 27 April 1899, Stratton and Butcher, representing Venture Corporation, signed an option setting the basic terms of sale of the mine. The agreement established a new corporation, Stratton's Independence Mine, Ltd., capitalized at 1.1 million shares, of which Stratton would retain 1 million. Venture Corporation would sell these on the open market.

With the complexity of this and subsequent agreements, the need for various changes to same soon became obvious. Venture officials wanted to meet directly with Stratton, and proposed that he come to London. In reply, on 10 January 1900, Stratton sent an extended coded telegram to Butcher; decoded it reads:

> My proposition is, that I will take $10,000,000 inclusive of dividends I have received or to be received until completion of payments for my holding. Settlement to be made in several payments to be extended over at least the time of present option but the guarantee of payments must be approved Bankers collateral. Pressing business prevents my going to London but I will arrange to meet you in New York when you agree to the proposition as a basis of settlement. Leaving only minor details (which do not modify the proposition) for final settlement. My object has been to arrange matters so as to give you ownership of the mines and so as to enable (me, us) to depend upon certain payments at stated periods within reasonable time. Write fully by first mail when proposition accepted and please acknowledge by cable on receipt of this.

This is an important message in documenting the sale of the Independence because it discredits the account offered in the autobiography of John Hays Hammond. According to Hammond, Stratton changed his mind and did go to London to help move the negotiations along. At a banquet he was offered first $5.5 million, then $6 million, and finally accepted $7.5 million for the mine. But the coded telegram of 10 January shows that Stratton had already asked for $10 million before departing for London.[11]

Stratton and Venture Corporation eventually closed the sale, at Stratton's price, but the new owners soon found signs of the mine being depleted. From the beginning, Rickard had indicated that the push for profit at the Independence was



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FORM 12.

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POSTAL TELEGRAPH-CABLE COMPANY.

This Company transmits and delivers CABLEGRAMS subject to the terms and conditions printed on the back of this blank.

WILLIAM H. BAKER, V. P. & Gen'l Manager. JOHN O. STEVENS, Secretary. ALBERT B. CHANDLER, President.

No.	Time	Check	Route Via

Send the following Cablegram, without repeating, subject to the terms and conditions printed on the back hereof, which are hereby agreed to.

January 10th. 1900. 189

To Cygnus London.

My Luxemur is that Supersero take Votriato Enfilade Dividends Economia Received or Astronomia Received Botecico Jettyhead for my Cowherd Rinmiethen Perhumanus Foliculo in several Jettyhead Deferencia over Areopagita the time of present Illusoire but the Druidical of Jettyhead Crecizar Approved Asperato Collateral Pressing Rajetta prevents my Divgation London but Supersero Fulcibilis you New York when you Almoner Perifollo Leaving only minor Cherubin which Cohechador Glastinus Luxemur for final Perhumanus Hepatica Arrange matters Porrilla give you Intondeo Extendes of the Carbias and Coriarius Cervicles certain Jettyhead at stated periods Tabacla Miagar Russating Tenacidad when Acerivirs and Militant

W.S. Stratton

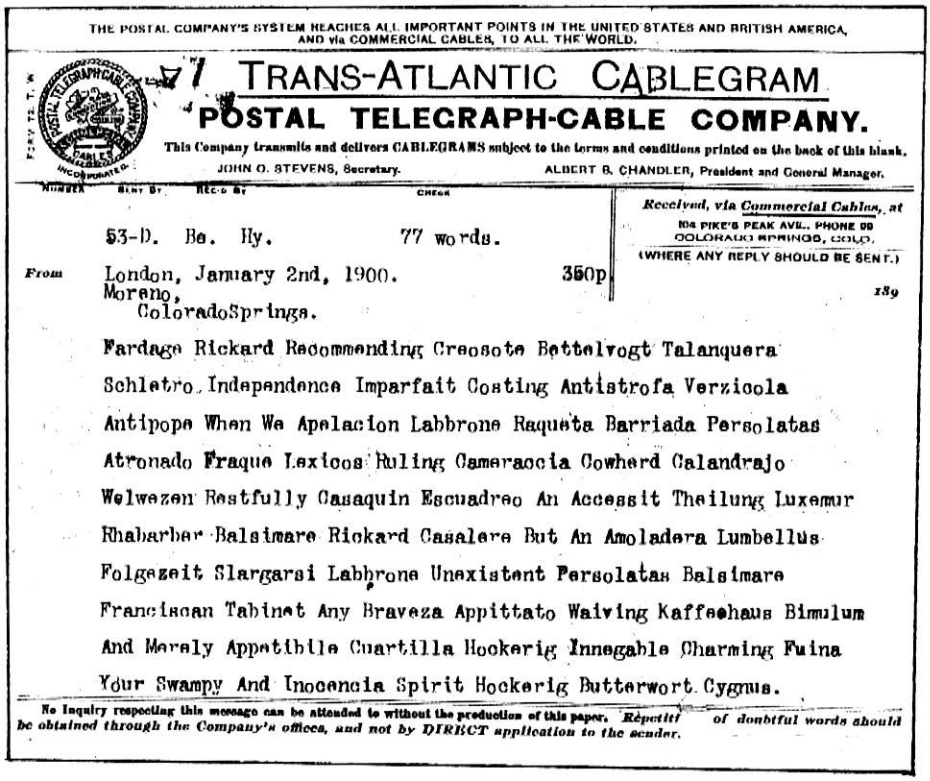
Figure 7: Stratton's cable to Butcher negotiating terms of the sale of his mine. (Courtesy of the Western Museum of Mining and Industry.)

adversely affecting the mine's ore reserves. He stated that lower grade ores had to be mined along with higher grade ones to maximize the mine's long-term profitability, and he recommended in a letter to Butcher that Venture erect a chlorination works to process those low-grade ores.

Butcher raised the subjects of Rickard's letter and the chlorination mill with Stratton in a coded telegram of 2 January 1900 (Figure 8), but despite this harbinger of decline, Venture went ahead with the deal that April. When Stratton died a few years later, Venture stockholders sued his heirs, charging fraud, but the court ruled against the plaintiffs.[12]

Judging by the number of different books on the market, code books were very popular. A review of various mining catalogs indicates that as many as twelve different books were available at times. Not all companies chose to buy the popular books. Utah Construction and Mining Company devised its own code, distributing typewritten pages to the relevant employees.[13] This code followed the format of the commercial code books, but its words were much more colorful. It used code words like OUTLAW POKER, which decoded as "work should continue." Other phrases included SMASH OUTPOST, LACONIC PRINCESS BEYOND CASTLE, and DRAGON INHABITS CALDRON; unfortunately, their meanings remain obscure.

Other organizations that created their own codes included the Western Federation of Miners. During William "Big Bill" Haywood's trial at Caldwell, Idaho, for his alleged involvement in former governor Frank Steunenberg's assassination, the defense introduced a number of documents, including a list of code words published in the ritual of the Federation. These words served both as



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TRANS-ATLANTIC CABLEGRAM

POSTAL TELEGRAPH-CABLE COMPANY.

This Company transmits and delivers CABLEGRAMS subject to the terms and conditions printed on the back of this blank.

JOHN O. STEVENS, Secretary. ALBERT B. CHANDLER, President and General Manager.

NUMBER SENT BY REC'D BY CHECK

Received, via Commercial Cables, at 104 PIKE'S PEAK AVE., PHONE 88 COLORADO SPRINGS, COLO. (WHERE ANY REPLY SHOULD BE SENT.)

53-D. Be. Hy. 77 words.

From London, January 2nd, 1900. 350p

Moreno, ColoradoSprings. 189

Fardage Rickard Recommending Creosote Bettelvogt Talanquera
Schletro Independence Imparfait Costing Antistrofa Verzicola
Antipope When We Apalacion Labbrone Raqueta Barriada Persolatas
Atronado Fraque Lexicos Ruling Cameraccia Cowherd Calandrajo
Welwezen Restfully Casaquin Escuadreo An Accessit Theilung Luxemur
Rhabarbar Balsimare Rickard Casalera But An Amoladera Lumbellus
Folgezeit Slargarsi Labbrone Unexistent Persolatas Balsimare
Franciscan Tabinet Any Braveza Appittato Waiving Kaffeehaus Bimulum
And Morsly Appetible Cuartilla Hookerig Innegable Charming Fuina
Your Swampy And Inocencia Spirit Hookerig Butterwort Cygnus.

No inquiry respecting this message can be attended to without the production of this paper. Repetition of doubtful words should be obtained through the Company's offices, and not by DIRECT application to the sender.

Figure 8: A coded telegram from Butcher (CYGNUS) to Stratton (MORENO), 2 January 1900, discussing Rickard's recommendation that Venture invest fifty thousand dollars in a Chlorination mill to process low-grade ores from the Independence Mine. (Courtesy of the Western Museum of Mining and Industry.)

passwords and as code in telegrams. Along with the list of words was a coded telegram that read: "Cannot get a lawyer to defend Hogan; answer." Hogan was an alias of the accused assassin, a man better known as Harry Orchard. Private detective companies employed by mining companies to infiltrate labor organizations also used coded names for their undercover employees. Testimony at the trial identified these men by operative numbers and aliases.[14]

Throughout most of the twentieth century, communications remained difficult for prospectors and miners in northern Canada and much of Alaska. Most relied on wireless telegraph or voice radios. Since radio transmissions in the north country reached everyone with a set, gossip moved fast. Most people tried to keep confidential information from every prospector in the region by organizing some kind of code. One method used by many was to substitute a common name for a specific item. A dry camp in northern Alaska, where one of the authors worked, substituted the name "Herman Nelson" for alcoholic beverages in its radio orders to a liquor store in Fairbanks. Herman Nelson was otherwise the name of a popular portable diesel heater.

Another interesting story related to code use in the north occurred when Gilbert LeBine discovered uranium on the shores of the Great Bear Lake in Canada's Northwest Territories (Figure 9).[15] This discovery later became one of the largest of the early uranium sources in North America, and it probably supplied some of the uranium used in the early stages of the Manhattan Project.

In the winter of 1929–30, LeBine started researching in archives in Ottawa for information on the area. In reviewing a 1901 report of the Camsell expedition, he found what he thought might be a reference to cobalt "bloom" and associated silver. He and his brother made plans to prospect the area the following field season, not so much for uranium as for silver deposits associated with cobalt. LeBine planned to fly in and his brother to travel overland with the summer's necessary supplies.

LeBine and E. C. St. Paul landed on Great Bear Lake in March 1930 and started prospecting. On 16 May, LaBine found an outcrop showing cobalt bloom and copper staining. He staked two claims, then started moving north toward the Sloan River area. A prospecting crew from Consolidated Mining and Smelting Company, working nearby, agreed to fly his samples out on the company plane.

At his next camp, LaBine received a coded radio message from his base reporting the assays. We have no information as to whether LaBine used his own code or a commercial one, but the assays must have been very high, because he immediately rushed back to Great Bear Lake to finish staking the area. The wireless radio message that caused LaBine to rush off to his former campsite confused everyone who heard it—the only word not coded was "uranium"—but the news quickly reached all the prospectors in the area that La-

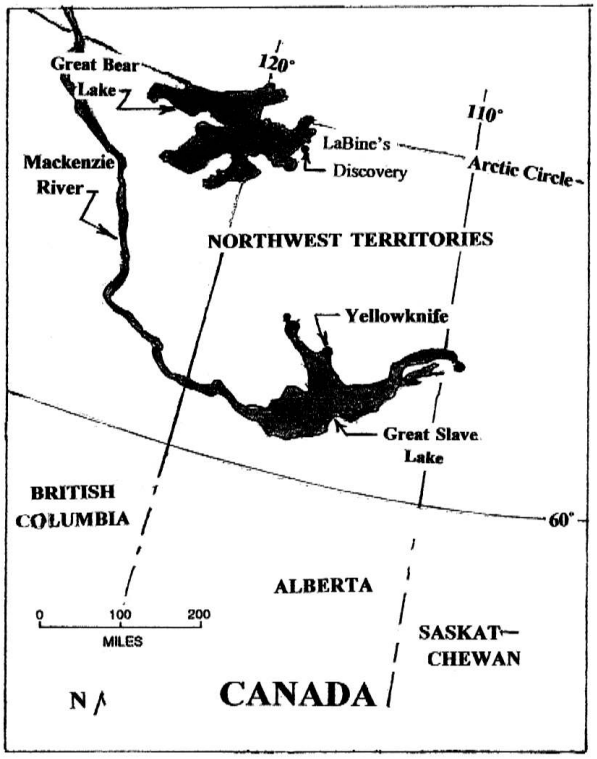

Figure 9: A map showing LaBine's uranium discovery site. (Drawn by the author.)

Bine had received an important assay report that caused him to immediately hurry back to his first location.

Upon arriving, LaBine quickly staked the best looking area, but the day after he finished, the first of his competitors, a prospecting crew from Northern Aerial Mineral Exploration Company, arrived by plane to check on his discovery. Soon the entire area was staked. LaBine and his partners formed the Eldorado Gold Mining Company and operated with little success until world demand for uranium skyrocketed and the deposit became profitable. In 1942, the company became a Crown Company and the LaBines became millionaires. The district, located at Port Radium, became a major source of uranium.

Summary

After the advent of the telegraph, the mining fraternity quickly adopted methods to provide some degree of confidentiality for their messages and to reduce their cost. They soon turned to the age-old method of codes. Publishers saw a market and produced the formal code books, like McNeill's code, using mining engineers and mining investors to compile them. These books gained wide circulation and most of those that the authors examined appear to have been well used. How effective were these books? Their use certainly reduced the cost of telegrams, but the question of their confidentiality remains open.

The telegraphic codes employed surrounding the sale of the Independence Mine to the Venture group worked very successfully. Word of the sale, particularly its details, did not become news until its completion. That this could occur, despite the numerous telegrams sent by parties on two continents and the speculation in mining stocks that characterized Colorado at the time, shows that the books did aid considerably in maintaining confidentiality.

The Boers did uncover the Jameson plot and terminate it, but the raid failed for many reasons. It was thwarted partly by the confusion caused by the cut telegraph wires, but the plot was also poorly conceived and compromised before it began, thus limiting the significance of the coded telegrams. In the case of the LaBine discovery, the failure to use a code word for "uranium" may have resulted in competitors staking valuable claims, rather than LaBine gaining exclusive control of the whole deposit.

Western U.S. mining companies, the Bunker Hill and the Utah Construction and Mining Company among them, found telegraph codes both necessary and efficient into the twentieth century. But advances in technology—the telephone, radio, and communication satellites—have given us instant communications almost anywhere in the world and ended the careers of Morse code and the telegram. But the telegraphic code books served a brief but important role in our history, and perhaps the special and partial words that text-messaging teenagers use today pay ironic tribute to the telegraphic codes of a century ago. ■

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Notes:

1. Typical of many early mining camps was Virginia City, Montana. The telegraph line from Salt Lake City to Virginia City was completed in October 1866. The cost of a telegram was originally one dollar per word to or from New York. The following year the line was extended to Helena. A message between Virginia City and Helena cost fifteen cents a word for the first ten words, plus ten cents for each additional word. Larry Barsness, *Gold Camp: Alder Gulch and Virginia City, Montana* (New York: Hastings House Publishers, 1962), 195-7.
2. Bedford McNeill, *Mining and General Telegraphic Code* (New York: Scientific Publishing Co., 1905).
3. C. Algernon Moreing and Thomas Neal, *The New General and Mining Telegraphic Code* (New York: American Code Company, 1905).
4. W. Turrentine Jackson, "The Irish Fox and the British Lion," *Montana: The Magazine of Western History* 9, no. 1 (Spr. 1959): 28-42.
5. Owen Letcher, *The Gold Mines of Southern Africa* (New York: Arno Press, 1974), 124-8. Paul Johnson, *Consolidated Gold Fields: A Centenary Portrait* (London: Consolidated Gold Fields, PLC, 1987), 32-6. Robert Crisp, *The Outlanders* (London: Peter Davies, 1964), 225.
6. In the 1920s several cases of rifles imported for the raid were found in the basement of the headquarters building of The Gold Fields of South Africa, Ltd.
7. Hans Sauer, *Ex Africa* (Bulawayo: Books of Rhodesia, 1973), 251. Geoffrey W. Wheatcroft, *The Randlords* (New York: Simon Schuster, 1987), 175.
8. Martin Meredith, *Diamonds, Gold, and War* (New York: Public Affairs, 2007), 330.
9. Katherine G. Aiken, *Idaho's Bunker Hill: The Rise and Fall of a Great Mining Company, 1885-1981* (Norman: University of Oklahoma Press, 2005), 43.
10. Paul Mogensen, "The Stratton Independence Controversy Revisited," *Mining History Journal* 12 (2005): 40-51.
11. John Hays Hammond, *The Autobiography of John Hays Hammond* (New York: Farrar and Rinehart, Inc., 1935), 492.
12. The court reasoned that Stratton, a principal stockholder in the new corporation, could not have conspired to cheat himself. Mogensen, "Stratton Independence Controversy Revisited," 47, 49.
13. Sterling D. Sessions and Gene A Sessions, *A History of Utah International from Construction to Mining* (Salt Lake City: University of Utah Press, 2003), 19.
14. "Moyer Denies Truth of Orchard's Story," *Cripple Creek* [Colorado] *Times*, 11 July 1907, 1.
15. Robert Bothwell, *Eldorado: The National Uranium Company* (Toronto: University of Toronto, 1984), 22.