

# UMBRELLAS, LOOPS, AND TRACTORS

## *Radio Intelligence Units, WW I*

In October 1976 in Brooklyn, New York, David Goodman and Earl Coates, fellows in the Agency's history program, interviewed Richard Eglof, who had served as a radio operator during World War I. Mr. Eglof's comments shed light on the beginnings of the military radio intelligence service sixty years ago and the Signal Corps' search for qualified radio operators to serve with the Radio Tractor Units (RTUs) along the U.S.-Mexican border and in Maine.

Mr. Eglof, assigned to RTU 33 along with nine other enlisted men, was stationed in McAllen, Texas from 1918-1919, after having served with the Pershing Expedition (headquartered in New Mexico) from 1916-1917. RTU 33, an intercept station, was co-located with RTU 34, a DF station. Second Lieutenant Alfred J. Main was the commanding officer of both units. The RTUs were under the operational control of the Military Intelligence Branch, USA; RTU 33 and 34 were under the administrative control of the 7th Service Company, Signal Corps, in Ft. Sam Houston, Texas.

Of the ten men in RTU 33, nine were still living in 1976. In addition to Eglof, Goodman and Coates interviewed three other men: Richey, Unger, and Werker. These names surfaced during the interview as Mr. Eglof recalled his experiences with RTU 33.

In this edited dialogue, the interviewers' questions and comments are in italics.

*How old were you when you got interested in radio?*

I had been interested in radio or wireless ever since I was a youngster. I was about fourteen years old, 1909, and I fooled around with slot coils and so forth and then finally decided I was interested in operating on ships. I took the examination down at the Brooklyn Navy Yard and got the "certificate of skill." It was a rather interesting set up down there: they had four or

five booths and had sets in three; to get the certificate they'd say this particular set isn't working. If you make it work and then take the code test, we'll give you a "certificate of skill."

*So it was not just code; it was how well you knew the theory and repair?*

How well you could maintain the equipment and everything else. In this particular case, I found an opening in the armature of a motor generator which I fixed and I threw the switches and the set worked. Then they gave me a code test with an omnigraph. I don't know whether you are familiar with those—that was a machine which had little metal aluminum discs on it. The code was cut on it, on the circumference of the disc. I took that test and passed. In 1912 they discontinued those "certificates of skill" and you had to take a complete examination—code and theory. I took that and passed it with flying colors. Believe it or not, I've had a commercial operator's license since 1912—just renewed it here about a year ago and it is good until 1980. But I don't ever expect to make use of it.

*You got your first certificate in 1911; did you go to work then?*

Yes. My first ship was the steamer "Hamilton" of the Old Dominion Line. It was a rather interesting set up—had a two-inch spark coil on it, one of the very few ships at that particular time that had spark coil equipment. I moved around from 1912 and worked on ships of the New England Steamship Company, Savannah Line, Clyde Line, Mallory Line, and the Southern Pacific. I also made one trip in 1913 or 1914 for the US Steel Products Company. They had a ship loaded with steel products which was suppose to go up to the port of Archangel on the White Sea in Russia.

I made that trip. We got into the White Sea okay, but after we got in there, the weather turned so bitterly cold that the ship was frozen in for two months. I enjoyed it. Of course we had lots of coal on board. The town's people would come out by horse-drawn sleigh over the ice and take us into town and back again. All in all, I had quite a career.

*In that first period, in 1911, as you were on the ships, did you have any additional training?*

No, it was all on my own. I kept up on everything that was going on. Of course along came the war and they sent several officers up here to get in touch with the old Marconi Company.

*Can we go back before that period? Can we go back and talk about the Pershing Expedition and how you got there?*

I was in the reserves. They called up signal corpsmen and we went down to New Mexico.

*What year was that?*

That was in 1916—and you went, too! That interrupted my marine operator career; then I got back here about the first part of 1917.

*Now, who were you with in New Mexico?*

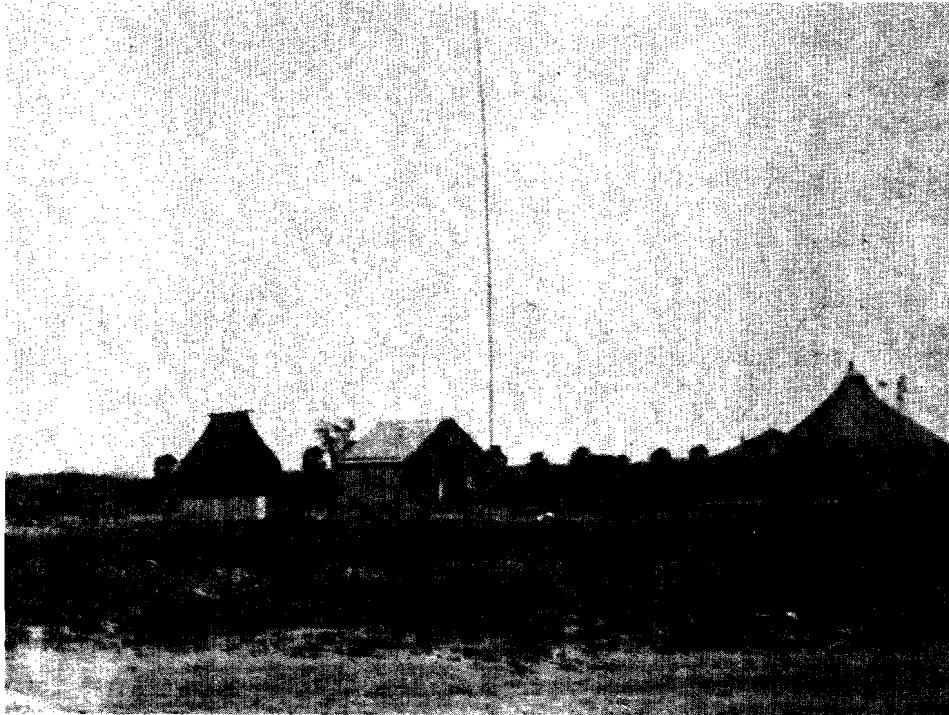
The Signal Corps Branch. I don't know what division they called it.

*Was the whole company called up at once?*

The whole company was called up.

*What kind of company was it? Was it a radiotelegraph company?*

It was radiotelegraph exclusively, that's all. Of course, it had the other group that could work sema-



**RTU 33, McAllen, Texas. Ford tender, supply tent, receiving station with umbrella antenna, and sleeping quarters.**

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phone and things like that, but I wasn't involved in that.

*What was your grade?*

I was just a private.

*Just a private? Were you an operator?*

I did operating.

*Did you operate in New Mexico?*

Yes.

*Where were you stationed in New Mexico?*

Las Cruces. There was nothing but sticks down there—all wide open country. We maintained contact while I was there with other field groups stationed along the border. As I said, when World War I came they got in touch with the Marconi Company to see if they could get some good operators.

*Were you still in the Signal Corps in World War I?*

No, I got out of that when I came back to New York early in 1917. Later I was interviewed by some officers that came up from Washington.

*Do you recall their names?*

No, I don't.

*Were they Signal Corps Officers?*

Yes. They came up here looking primarily for ship operators because the amateurs at that time apparently didn't have the experience. They wanted people who knew how to operate equipment, so the Marconi Company got in touch with people like myself and Joe Richey. I don't know just what Joe Richey was doing at that time; he wasn't a ship operator but I presume they got in touch with him at AT&T. Charles Werker was a ship operator; Ken Hance was also a ship operator here in New York, and they got some men from out west. They got a fellow named Rose, and Lieutenant Main, who was in charge of our unit in Texas, who had been a ship operator on the Great Lakes. They transferred him from the ships to a coast station in Detroit. Lieutenant Main had been in charge of a coast station, I presume. He was a little bit better off than some of the others so he was commissioned a lieutenant.

*In other words, he had no prior service?*

He had no prior service in the Army. There were several of them. The only other one that I met was a

Lieutenant Sutherlin; I think he was stationed either in Yuma, Arizona or Las Cruces.

*How did you meet him?*

Well, we had a meeting in Washington. You see, the set up in New York was that we went over to Bedloes Island which was called Fort Wood, but now is the Statue of Liberty. That's where we all enlisted. We were only there for a week or two. Then we all went down to Washington and then over to the National Bureau of Standards.

*So your whole group enlisted?*

The whole group.

*How many were there, do you recall?*

I don't recall, it may have been about twenty.

*Was it just enlisted personnel?*

Yes. The one officer that I recall was Sutherlin. The set up there was—I can tell you they made a lot of promises. They told us if we enlisted that we would get commissions, which I never saw!

*When you enlisted in Bedloes or Fort Wood, did they tell you anything? Did they brief you, or give you an idea of what you were going to do?*

No, they didn't brief us at all. They just said, "Stay here until we get orders to send you to Washington."

*Did they keep you away from the rest of the enlistees?*

More or less, yes. They had a radio station at Fort Wood at that time which we were permitted to go in and see—we went from there down to Washington. In Washington, we went over to the Bureau of Standards where we were briefed on new equipment which included loop antennas for direction finding. I had no experience with loop antennas until I got to Washington. We were pretty well briefed on how to operate them—I don't recall just how long a period it was, I think maybe several months. Then the group was assigned to different places. Richey, Werker, and I went to Radio Tractor Unit 33 in Texas. There were about ten enlisted men plus an officer who went to Unit 33. Likewise some went to other units; some of these I believe were recruited, but they didn't come to New York—they went from the West down there.

*Do you have any records of the other units or the people that went to them?*



**RTU 33 in the Ford tender. Left to right: Lt Main, Joe Turre, Ernest Rose, Richard Eglof, Paul Anway (standing left), Charles Unger, Ken Hance (driving), and Charles Werker.**

No, I don't. There was Unit 34 and I believe there was a Unit 35. Those are the only ones that I can recall. Have your records shown a number of units?

*Yes, that's right. There were quite a few units.*

*There were?*

*There were 14 units. They served from the area of Brownsville, Texas out to California.*

Well, you see, I didn't know anything about those other units other than when we monitored stations down there in McAllen, Texas and took bearings on them. Those bearings were transmitted to these other units so that they could take bearings where the lines intersected.

*Triangulation.*

Triangulation, if you want to call it that. We found out where the other stations were. Then I believe that

information was passed to the intelligence department which sent civilian personnel in to try to locate where these stations were operating. I think the main station, according to my recollection, was in a town called Chapultepec which I don't find on the map these days. I don't know whether that's now Mexico City or on the outskirts of Mexico City. Chapultepec was the name of one of the stations that we monitored—twenty-four hours a day because they were communicating with stations in Germany, and I presume, with German submarines in the Gulf of Mexico. I know we did copy when we could. I believe we got a lot of information that was very valuable.

*Going back, if you will, to the Bureau of Standards—what type of equipment besides the loop antenna did you get training on?*

Just the receivers and transmitters. The receivers were, I believe, mostly Marconi receivers and the

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transmitters were also built by the Marconi Company. That's all there was then—nothing in the line of short-wave equipment at that time.

*Was there any French or British equipment?*

Nothing like that. This was all American-made equipment, manufactured mostly by the Marconi Company in New Jersey.

*Was that equipment special?*

There was nothing special about it. It was made for the Signal Corps. In our group it was just standard equipment plus the transmitters for field work. On those frequencies they used an umbrella antenna—I presume you know about that? They used a big pole with drooping wires.

*Could you describe your training while you were in the Bureau of Standards?*

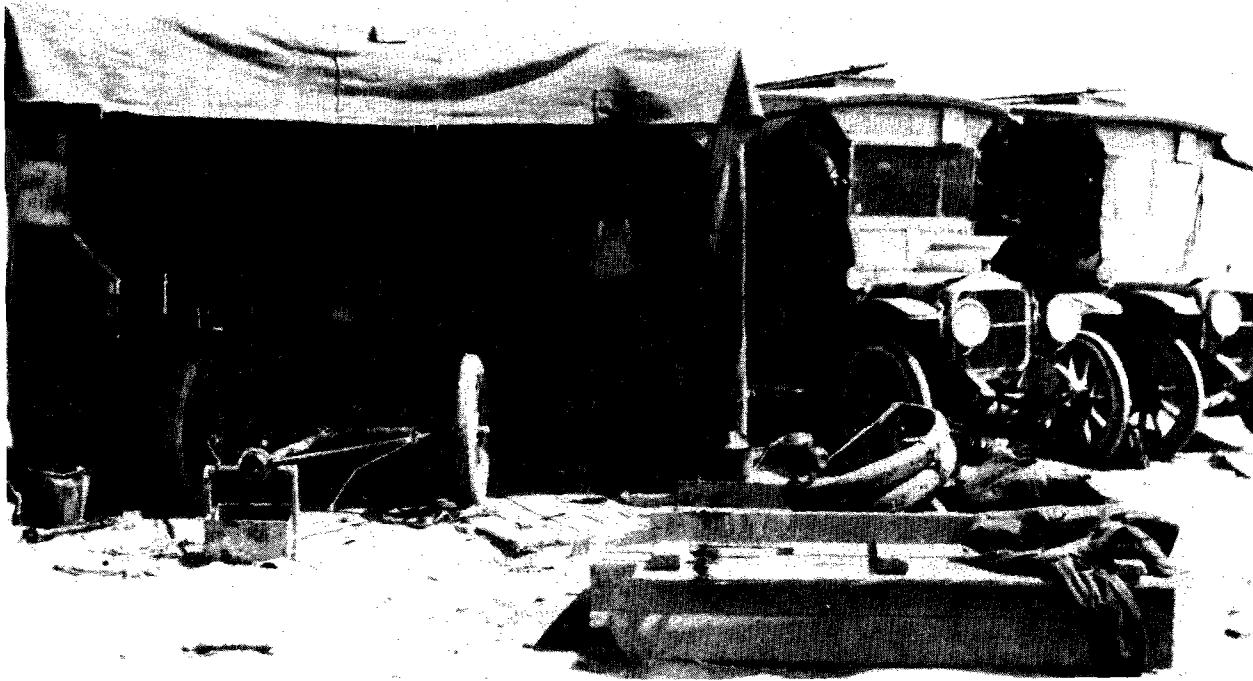
Well, nothing other than we attended lectures and operated the equipment to make sure that we knew how to work it and that it was working properly. That was it.

*What were the lectures on?*

The design of the equipment, how it was manufactured, and what it did. The transmitters were the same. The best thing was that this was all equipment which I had been familiar with before I went into the Army; used the same receivers on some of the ships. The IP 501 receiver and the transmitters later developed into some of the sparks. Of course, on the ships



**Richard Eglof at receiving position.**



**Garage and White trucks—RTU 33's intercept tractors.**

we had rotary sparks<sup>1</sup> and quench gaps on some of the Army equipment.

*When you operated the equipment, did you later find that the way they operated in the Bureau of Standards was similar to what you were doing in McAllen, in terms of copying?*

More or less, except that in McAllen the receiving equipment was in a tent which was out in the open and the transmitting equipment was in a White truck.

*Did they teach you any special formats?*

No, it was copied long hand, most of it.

*We understand that you were able to use a typewriter.*

Yes.

*Did you copy on the typewriter?*

Oh yes, I was exceptionally good on copying code.

*How fast?*

Oh, at that time, I could copy up to thirty-five or forty words per minute. I had a happy faculty of being able to "lay back" as they said and recall remembering

<sup>1</sup> Provided the pulses of energy to produce radio frequency waves.

what I had heard yet I hadn't typed it. I think as a result of this, I hadn't been in too long when they gave me an extra few bucks a month for being an expert military telegrapher.

*Did they give you a briefing at the Bureau of Standards on exactly what type of mission you would be performing?*

No, they didn't. That was more or less described after we got to Texas. We had a visit from several officers; I'm trying to recall their names. I presume you've heard of Brigadier General Churchill? He was the top man in Washington.

*Did you meet him?*

I met him once, in Washington. That's the only time I met him. He came over to the Bureau of Standards while we were in training.

*Did he have a Colonel Van Deman with him?*

No, not that I recall. I do recall Ives, Carl Kinsley, and Churchill. Those were the three top men as I can remember. My recollection is that some of the important information that we gathered down there was transmitted through, I presume, Fort Sam Houston.

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*Did Churchill have anything to say to you?*

No, he just said that he knew that it was an important mission and he hoped that he got the best out of us—which we all promised. Other than that, we never saw him again because I think he spent most of his time in Washington.

*Were there a lot of people training at the Bureau of Standards?*

Well, in different aspects of the military.

*Specialities?*

I don't know what they were being briefed on, but my recollection is that we were kept separated from everybody else.

*When you left the Bureau, how did you get to Texas?*

We went down by train, on the Southern Pacific. Originally, we went to Brownsville where we got our equipment and then we moved that equipment up from Brownsville to stations all along the border. It was a heavy White truck [intercept tractor] and we stopped at places like Mercedes and I forgot some of the other towns. Mercedes was a cavalry camp and the cavalry had this unit up in McAllen, Texas from which we were separated entirely.

*Now, this group from Unit 33, who was in the group that went with you from the Bureau of Standards?*

There was ten plus Lieutenant Main.

*So the whole group moved at the same time?*

A list of the names of those I can recall—we had Charles Werker, Joe Richey, Ken Hance, a fellow named Rose—anyway that was five. There was Lieutenant Main who was the commanding officer and then we had another group of five which included Joe Turre—he's now out in Colorado—and a chap named George Wilson and Ross Plaisted. I think we had ten men plus a commanding officer.

*That's right. You have the two—Unit 33 and Unit 34—down there and that would be about the right number of men.*

Now who was in charge of Unit 34?

*Well, I think Lieutenant Main was in charge of both of the units.*

To my recollection, he wasn't because he was in McAllen at the time. He never left to go to Unit 34. I know that Lieutenant Sutherlin had one and there was another lieutenant, but I can't think of his name.

*The reason we're interested in what you are saying about this part is that we did not understand from Werker and Richey that you went as a group to Brownsville, nor did we understand that you had picked up your equipment at Brownsville. We were told instead that several people traveled alone and that the equipment was shipped to McAllen and picked up from the train station there.*

Well, I don't recollect that at all. As I said when they came up from Brownsville, there was a man driving a truck and they may have come up in different groups—like four, but they all stopped in Brownsville.

*So when you say that you drew your equipment, you really mean that you drew all your trucks and radio equipment?*

It was picked up, to the best of my recollection, at Brownsville and brought up to McAllen.

*You said that you drove the White tractor from Brownsville up to McAllen, they actually drove it then and set up the station?*

To the best of my recollection. At that particular time, on the single [railroad] track between the Harlingen railroad terminal up to Mission, Texas the train had just one coach. I don't think they had a flatcar on which they could put a truck like that. I did see a coach that used to come up in the morning and go back in the afternoon to Harlingen which was a railroad terminal that went down to Brownsville and then up to Houston.

*Did you ever actually drive the White truck?*

Oh, yes, I drove the truck.

*Where had you received your driver's training?*

Picked it up, that's all. Then we had another truck [Ford tender] which was used for putting equipment in if you wanted to move around somewhere. Now I don't know whether any of these others have remembered but I believe a little snooping occurred at this time. Sometimes we got signals that were strong and we couldn't find out where they were coming from. My recollection is that we had the bright idea: let's go to the power company in McAllen and see who are the largest consumers of electricity. We did take, as the top consumer of electricity, the motion pictures that was in McAllen and based on the electricity they used, we checked all of the consumers of electricity that exceeded or were anywhere near that level. Now my recollection is that we did investigate a monastery in Hidalgo which was south of McAllen right on the river. We passed that information on to the Army and I

recall somebody telling me that they did investigate this place and picked up some Germans who were operating a station in that monastery. Now that's only hearsay.

*Was Hidalgo in Mexico?*

No, it was on the American side. This monastery was on the American side of the Rio Grande.

*When you set up your station at McAllen, did Lieutenant Main or anybody brief you at that time on what your mission would be? Did you have knowledge of the type of materials you would copy?*

Yes, we did. We were told, as I recall, that the main objective was to monitor signals as to what time of day they came on the air, who was being called, and what the code was. There was an awful lot of code that came out of Chapultepec and I'm sure a lot of it was copied and passed to Washington because I know some of the units doing it got citations for their excellent work. I don't know whether Unit 33 ever got a citation, but some of the units did; I understand that the material had been transmitted back to Washington and it was very valuable. One of the primary points was that we monitored these stations at the exact time they came on—like they would come on at maybe eleven o'clock at night and they transmitted for about an hour and then stopped. The next night they came on and did the same thing. Well, each night whoever was on watch at that particular time would copy as much as he could without interference from the static.

*So you had then specific stations that you copied and were listening for. Did you have any type of a search mission where you would just copy anything?*

Primarily we copied stations that we heard which we thought were transmitting code or possibly some information that was being used by the submarines in the Gulf or was going back to Germany. The Chapultepec station—at that time called XDA—was a very powerful station. I was told later that the intelligence department had sent investigators into Mexico and had been able to get information about this particular station.

*I'm very interested in your driving from Brownsville to McAllen and then setting up the station. Could you describe the trip and the setting up of your station at McAllen?*

Well, the transmitting equipment had already been installed in the truck so the only setting up that the personnel had to do there in McAllen was to take the

spikes out (which were the center of the umbrella antenna) and raise them and put the antenna up.

*When did you set up the tent that you used for receiving?*

The tent was set up right after the equipment came up there. We had a field meter which was hung on the



**Loop antenna, with 360° dial at base, and map of area on the floor.**

wall, as well as an audibility meter. When you heard a station, you took readings on its signal strength and you came up with a pattern. You would then have a big lobe which was your strongest signal and then you took a reading—that was where the station's signal

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was coming from. As you rotated the loop around in the opposite direction, the signal got weaker. You took this signal bearing and passed that information on to one of the other units.

*How was the antenna moved? I was wondering how you turned it so that you got the best lobe.*

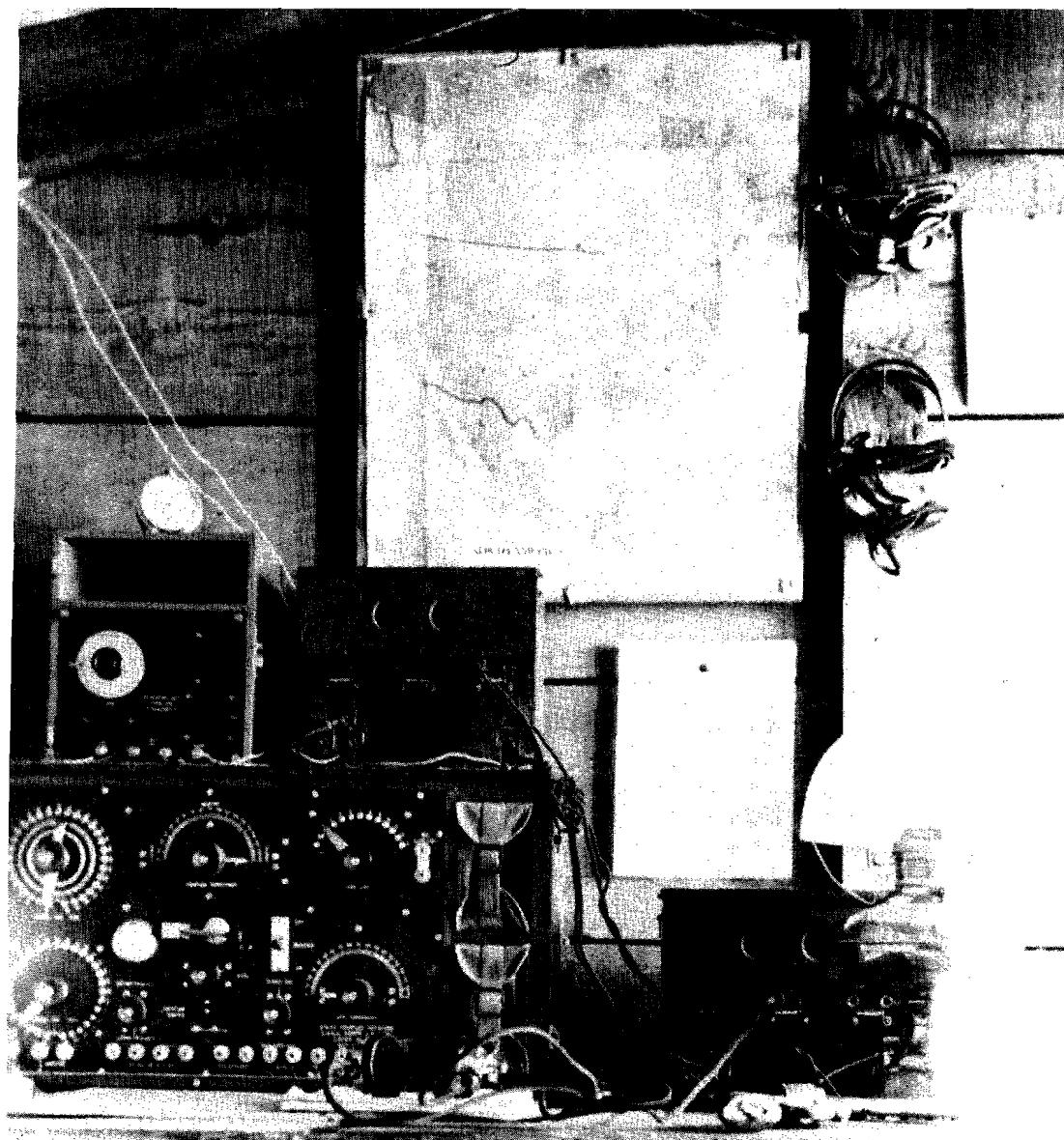
It was operated manually. You turned it by hand. You see, it had a disc with degrees marked on it and it had an arrow on it which pointed to the degrees, so that when you rotated it, you took the reading off this disc on the bottom. To improve reception there was what they called the Armstrong regenerator circuit,

which was one of the big things in reception. I constructed a similar one—built it and we used it. There were two coils: one was a fixed coil and the other one fastened onto a piece of wood which you pushed in and out.

*It was a regenerative repeater?*

That's right. I made it a regenerative repeater. It wasn't in its day a regenerative repeater, but as a result of adding this it became one.

*We have some pictures which we borrowed from Charlie Werker, which show the receiving equipment. This one*



Intercept position, RTU 33, with pistol at the ready.

*with the lamp in it and a map of North America—what position is that?*

It's one of the receiving positions. We used different set ups—I think this was originally the first one. This was the first set up and then we got more equipment.

*What is the make of the receivers—do you remember who made them?*

I'm sure they were made by the Marconi Company.

*Is that the garages?*

Yes, those are the two White trucks.

*Charlie Werker said that Turre worked on the trucks.*

He was the mechanic. Looking at the funny side of it, I'll never forget one day one of the gasoline tanks on the truck developed a leak and Turre said he'd fix it. He took the tank off the truck, drained the gasoline out, and put the soldering iron on the gas tank which he was straddling. He was lucky he wasn't cut in half when the damn tank blew up. Fortunately the ends were weak and the two ends went out. He sat there and he was knocked over. The minute he put the hot soldering iron on it, the tank went bang—the tank exploded!

*Was he also a radio operator?*

Yes, he was. He still has a ham station and I worked him a few times years ago, but not recently.

*Did you work the loop antenna at all?*

I worked the loop, sure, many a time. We had graph paper we used to make the tracings on. The loop antenna that they showed us in the Bureau of Standards was shipped down later.

*That was in a tent and building that was separate from the receivers?*

Yes, that's right.

*Did you get much interference from your own receiving station?*

No, because we never used that at the time we were taking loop readings.

*The transmitters were in the White radio tractor?*

Yes.

*Did you use those very often?*

Yes, we used those to communicate with the other units along the border. Sometimes that was the way

the readings that we got locally were passed to the other units so that they could quickly identify where the signal was coming from.

*What units did you transmit to, do you remember?*

Well, I can only recall Unit 34. I know there were some units beyond that, all the way out to the west coast. I don't know a thing about those other units.

*Did you have any sort of codes that you used with the other units?*

No, no codes.

*So you sent in the clear, so to speak?*

When you were transmitting to these different units, you used abbreviated information so that it couldn't be picked up even though the range of this transmitter wasn't very far.

*How did you receive information from them? Was somebody always on the set, was it always turned on?*

They had regular schedules of operation—you met some of these units at certain times. At night time, say after four o'clock in the afternoon, you might as well fold up because of the static. You could sit there and every afternoon, as regular as clock work, lightning songs would come up and they would last for maybe two or three hours. You couldn't hear a thing—just a mass of noise.

*Did Lieutenant Main ever go on circuit with you?*

I don't recall. He would come in once in a while and listen to what we had. We always had the means of putting dual headsets on our receiver. He would listen sometimes.

*Would it be possible for you to describe what it was like when you came on duty—what you did? Let's say you came on at one of the shifts, as an intercept operator—what did you do? How did you set up your equipment?*

Well, the equipment was running twenty-four hours a day. Of course we always had supplies of extra tubes and things like that. But the equipment was never shut off unless something went wrong with it and we had to fix it. In my recollection, we never had much difficulty with it at all. It always operated well and it was checked mostly every day.

*So when you came on shift, you literally took over a warm chair?*

We just took over from the other fellow, that's right. I remember one night I came on—one of the

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late tricks like 11 to 7, something like that—and sat down in a comfortable chair. I put my feet down and felt something. By the way, we always kept a revolver on the table and I put my feet down and felt this soft thing. I said to myself that feels like a snake, so I took the flashlight and pulled the gun off the table. Sure enough it was a great big rattlesnake. Well one of those smart alecks who had been on before me had cooked up the idea of giving Eglof a session for himself. So I blazed away at this snake with a 38; then they all came running after hearing the shots. They were having a whooping good time, you know, laughing.

*What can you tell us about Lieutenant Main? What type of guy was he?*

He was a nice guy, I'll say that. He was a regular fellow and he had been an old Marconi ship operator on the Great Lakes. He had been picked up in Cleveland to take charge of the...

*He was commissioned and brought in?*

Yes, he was commissioned when he got in. He was one of the smart guys, I guess, for he made sure he got his commission before he got in.

*Did you think of him as quite an expert?*

I wouldn't call him any more of an expert than the next fellow. I mean, he knew how to operate the equipment from his previous ship experience.

*Understand that Lieutenant Main sold you some stock.*

Oh, he was always up to things. Oil stock—that was one of the things. We were not very smart. Some guy came down from the Bert Bernard Oil Company around San Antonio somewhere and bought some property down in Texas and started to drill for oil, but it was not successful. It never produced any oil. Lieutenant Main got in with some of them and peddled off some stock to us.

*Tell me a little bit about what you did down there for recreation and how you lived.*

Well, we used to go out rabbit hunting and that was a lot of fun. We all had shotguns, besides revolvers, and we also had rifles.

*Did you ever use them?*

Yes, we used the rifles once in awhile to try and put the light out on top of the water tank in the town of

McAllen. We used to sit there at nightime and see who could pop out the light on top of the water tank. And then another time—you know they used to have raiders that came across the river down there. We were told to watch out for them. The cavalry unit pretty well covered that, but I recall one night we had this equipment in the tent and the flaps at the top were open. I forget who it was, one of the fellows was on duty and he happened to turn around and saw a pair of eyes up there in this flap. He knew that we had been told to shoot at anything that looked like one of those Mexicans. He started to blaze away and then he heard the greatest commotion: a donkey that had strayed in from somewhere had seen the light in the tent and he stuck his eyes in the tent. He was mortally wounded—shot in the head. We had to drag him off and bury him.

I presume that you know during this period there was a flu epidemic? During this epidemic, we had to go to a lot of the old Mexican homes where people had died like flies; took them out and helped bury them in the trenches or put them in the irrigation ditches. There were some very interesting things that happened down there.

*How long did you stay in McAllen?*

I stayed until 1919.

*What rank did you have?*

I was a sergeant. Some of the men were made Master Signal Electricians; a higher grade of non-commissioned officer next to a Second Lieutenant. Hance and Richey both were Master Signal Electricians.

*Did you stay on to train the new people?*

No, I didn't stay—I said I'm out and that's it!

*After you left, did you ever have anything else to do with radio intelligence?*

No, not a thing.

*We certainly thank you for talking to us and helping us.*

Very kind of you, I'm glad to help. Maybe some of my remarks don't agree with some of the others—when you try to recall sixty years back, why that's a long time.

*Thank you, you have done an excellent job of recalling, we want you to know that.*