RADIO DEPARTMENT

United States Signal Corps Use Radio In Mexico

THE accompanying illustrations depict the excellent portable Radio sets in use by the United States Army Signal Corps during the expeditionary campaign n Mexico. The particular apparatus is that in use at Casas Grandes, Mexico (right hand photo). The Radio operator is receiving Radio messages from the Mexican border line. Many important military despatches are sent back and forth from the expeditionary forces and the army headquarters located on the border.

Owing to the unreliability of the courier and telegraph service, the Radio has proven of wonderful help in maneuvering the various bodies of troops quickly and accurately. Wireless telegraphy has changed to a very large extent the strategy used in the conduct of warfare, both on land and on sea. It is now possible to send a radio call for reinforcements, and to have them on the spot within a few hours in a great many instances, whereas in previous wars it very often required one-half a day or a whole day, and even more, to get a message through.

The illustration at the left portrays the powerful Radio station in use by the United States troops at Columbus, N.M. This outfit is mounted on a large automobile truck and is of sufficient power to serve the army headquarters' staff, even though messages are to be transmitted several hundred miles. The demountable aerial mast rises above the arid, desert-like country to a height of 85 feet. So expert are the signal corps members in unpacking and setting up this apparatus that the whole operation requires but a few minutes.

Most of these radio sets for portable work utilize a gasoline or kerosene oil engine which drives a 500 cycle A. C. Generator. This gives a high pitched spark note which is heard the best in the receivers, especially under tropical and heavy static conditions.

Above: U. S. Radio Operator on Duty at Casas Grandes, Mexico.

Left: Radio Truck and 85 ft. Mast at Columbus, N. M. Note the Sandy Nature of the Country.

PHONOGRAPH CODE-PRACTICE RECORDS THE LATEST.

Wireless telegraphy, especially in England, has become such an important consideration that the British Marconi Company has developed a complete set of records, corresponding to those used on the regular disc type talking machines, each record containing an excellent assortment of code practice in dots and dashes. They were recorded by having an expert operator transmit signals on the specially devised apparatus, while the talking machine was in operation. The present set of records comprise six double-sided disc records, containing instructions for both the beginner and the advanced student. Each side gives from 3 to 4 minutes' instruction at the usual speed at which the record is run; the complete set thus giving up to three-quarters of an hour of first-class receiving practice. This scheme possesses many important advantages over others now in use, and any part of the record is available for instant reproduction, whenever the operator or student may so desire. Moreover, the speed at which the record is run can be controlled to suit any student.

The first record, intended especially for beginners in the art, contains on one side the complete Morse code with all standard abbreviations and punctuation signs. On the reverse side of this record difficult letters such as C, Q, Y, etc., are picked out, and they occur several times in succession; then there follows a sentence very slowly and deliberately, containing several letters of the alphabet. The second disc contains on one side numbers, at a speed in the neighborhood of about ten words per minute, and on the other side, similar matter which has been transmitted at a speed approximately fifty per cent. faster. Owing to the possible regulation of the speed in any standard talking machine, a record whose normal velocity yields 10 words per minute, may be adjusted as to speed so as to give any reproduction at a speed of from 8 to 12 or 13 words per minute.

Both sides of the third record contain dummy messages properly numbered, timed and counted exactly similar to those sent between government or commercial stations and to ships at sea.

Record No. 4 contains stock exchange terms, fractions, etc. On the reverse side of this record is found code words, ciphers, etc., normal transmission being at the rate of 20 words per minute.

The fifth record contains a collection of messages of varied degrees of difficulty, such as are encountered in the course of an ordinary day's work, and, correspondingly, the speed at which these are transmitted is 25 words per minute. The reverse side of this record contains a miscellaneous assortment of French, Spanish and Italian messages in code, at a rate of 25 words per minute.

The sixth record is perhaps the most interesting of the whole series and without doubt the most valuable. This remarkable record contains signals sent out by two distinctly different transmitters on slightly different notes. The home student who has not had access to a wireless installation will now be in a position to hear just what signals sound like when "jammed" and will at the same time be given exceedingly favorable preparatory instructions for the time when he takes up his duties on board ship. This "jamming" record contains on one side "press," transmitted at a normal speed of 25 words per minute, and "jammed" or interfered with by similar matter transmitted at a slightly lower speed. On the reverse side there is given mixed messages at the rate of 25 words per minute, also "jammed." A student can gain a large amount of practice with this one record, as it often becomes necessary for an operator to read a note through considerable interference of static and one or more neighboring stations which endeavor to deluge him with a multifarious accumulation of dots and dashes, with a few splashes of static thrown in for good measure.