RADIO IN THE AFRICAN JUNGLE

Radio has penetrated yet another unknown sphere, and from the jungles of Africa have come the calls of the amateur operator. In this story is told how radio was employed by an expedition moving in the African interior to maintain communication with civilisation.

WHEN our company was sent to film a picture in the heart of Africa, some means of communication between headquarters and the various field units had to be maintained. Short-wave radio was selected as the means of communication, and as the expedition was necessarily limited to a small number of persons, we could not afford to take along a radio operator. I was selected, because of my interest in the amateur short-wave branch of modern science, to be the radio operator of our safari.

From the remote places visited it was one of my duties to keep in daily touch with the expedition's temporary headquarters in Nairobi, British East Africa, and in some cases with the studios at Culver City, 12,000 miles away, as well as the New York office.

When we left America our party included 20 people, and this number was augmented to 40 whites at certain stages of the safari, what with the addition of professional British hunters and guides, and additional white men, who acted as technicians in handling the necessarily elaborate motion-picture equipment, camp managers, and so on. In addition we enrolled an army of native porters for carrying goods, cooking, personal service, etc. I mention these particulars to give some idea of the elaborate formation of the safari, which was said to be the longest and largest ever organised in Africa. We carried a quarter of a million dollars in equipment to these remote places, and altogether lived a rather complicated and varied life, if primitive in some of its essentials.

In addition to my regular work, the radio required considerable time, but was nevertheless a source of much interest, as radio enthusiasts will understand.

The first consideration in selecting a radio outfit was performance, and this had to be sharply related to portability and endurance. Operating, as we were, far from a place where parts may be replaced, I had to rely on the ruggedness of the original equipment to an unusual degree.

I chose an M-1 type transmitter and receiver, which is a portable set standard with the United States Navy. It works on a frequency of 4000 to 30,000 kilocycles both for sending and receiving. The power was derived from a gas-electric generator. The entire outfit weighed 300 pounds and could be broken into packages weighing from 40 to 60 pounds for convenience in carrying.

The main object of our installation was to maintain regular schedules with Nairobi, regardless of our location. This was quite a problem, inasmuch as nearly as great difficulty is encountered in working short distances with short-wave apparatus as in trying for extreme distance. Fading, swing, and other disturbing phenomena are more prevalent at short distances than at longer ones; and during our work recourse was had to three of the bands—14,000, 7000 and 3500 kilocycles—according to what best suited prevailing conditions. The distance from Nairobi varied from forty to approximately one thousand miles, and communication was maintained throughout the trip, regardless of weather and other adverse conditions.

The Tom-Tom: Radio's rival in the jungle. By means of a system of signals beaten out on these drums, natives can relay signals over hundreds of miles in an amazingly short time.

The man handling the Nairobi end was Mr. Sydney Pegrume, an amateur there, VQ4CRE, who did remarkably good work on his low-powered set. Our regular schedule was kept at 16.00 *GMT*, with extra sessions fitted in, according to demand.

DURING the period of our safari we handled approximately 600 messages, totalling perhaps 18,000 or 20,000 words. The Nairobi connection was the first consideration throughout the trip, taking precedence over any efforts at distance or other experimental work.

However, we also made connection with amateurs in practically all parts of the world during our spare time—this being carried on, of course, along recognised amateur lines. Many interesting contacts were made with amateurs in different nations: South Africa, France, Spain, Germany, England, Belgium, Denmark, Czecho-Slovakia, China, Malay States, Borneo, Philippines, Russia, Mexico and the United States.

Radio is now fostered under an enlightened policy in most of the African Governments, and we were specially licensed by the Kenya, Uganda, Belgian Congo, and Tanganyika Governments to handle traffic to and from Nairobi. These Governments showed us great courtesy and co-operation. As to operation: All work was done in the wavelength bands set aside for use by amateurs. The bands used most were the 7000 kilocycle and the 14,000 kilocycle bands—or 40 and 20-metre bands respectively. The 7000 k.c. band works best for moderate distances, and during the early morning, while the 14,000 is best for extreme distance and in the evening.

The early evening and early morning proved the best hours for receiving. From about 5 p.m. to about 7 p.m. the 40-metre signals come in well from the east. From about 8 p.m. to 10 p.m. the "European gang" on 20 metres (14,000 kilocycles) came along; and from 10 at night until around 2 a.m. the United States "bunch" on 14,000 k.c. came in excellent. Then there began a fade-out until daylight, and from then until noon or so the U.S. bunch on 40 metres came in very well again. This represents about the average condition, the time given being that for the parts of Africa in which we happened to be working.

Stations on the east coast of the U.S. and those in the Philippines (*Continued on page 13.*)