

**Panzer IV communication system.****From US INTELLIGENCE BULLETIN December 1942**

A captured German training pamphlet contains the following information regarding the duties of the crew of a Mark IV tank, and the means of intercommunication

**RADIO COMMUNICATION**

Intercommunication between units ranging in size from the battalion to the regiment is on medium wave lengths. Intercommunication between units lower than the battalion is on short wave lengths. All wave lengths are allotted by the division, and are changed frequently.

**INTERCOMMUNICATION**

The following means of intercommunication are available:

External: Voice radio and key radio, flag signals, hand signals, signal pistol, and flashlight.

Internal: Intercommunication telephone, speaking tube, and touch signals.

The maximum distance for satisfactory voice radio communication between two moving vehicles is about 3.75 miles, and for satisfactory key radio communication about 6.25 miles.

Flag signals are used for short-distance communications only, and a flashlight is used at night. The signal pistol is used for prearranged signals—chiefly to other arms, such as the infantry.

The radio set, in conjunction with the intercommunication telephone, provides the tank commander, radio operator, and driver with a means for external and internal voice communication.

The same microphones and telephone receiver headsets are used in both cases.

When the control switch on the radio is set at Empfang (receive), and that on the junction box of the intercommunication telephone at Bord und Funk (internal and radio—that is, intercommunication telephone and external voice or key radio), the commander, radio operator, and driver hear all incoming voice radio signals. Any of these men can also speak to the other two after switching his microphone into the circuit by means of the switch on his chest.

For voice radio transmission, the switch on the radio set is adjusted to Telefonie (telephone). The telephone switch may be left at Bord und Funk. Either the tank commander or the radio operator can then transmit, and both they and the driver will hear the messages transmitted. Internal communication is also possible at the same time, but the conversation will be transmitted.

If the radio set is disconnected or out of order, the telephone switch may be adjusted to Bord (internal). The tank commander and driver can then speak to one another, and the radio operator can speak to them, but cannot hear what they say. This also applies when a radio receiver is available, but no transmitter, with the difference that incoming voice radio signals can then be heard by the radio operator.

The signal flags are normally carried in holders on the left of the driver's seat. When the cupola is open, flag signals are given by the tank commander; when it is closed, the loader raises the circular flap in the left of the turret roof and signals with the appropriate flag through the port thus opened. Flag signals are given in accordance with a definite code, the meaning of any signal depending on the color of the flag used and whether the flag is held still or moved in a particular way.

Pistol signals are given through the signal port in the turret roof, through the cupola, or through one of the vision openings in the turret wall. The signal pistol must not be cocked until the barrel is already projecting outside the tank. It is normally used only when the tank is at the halt. The main function of this means of communication is the giving of prearranged signals to the infantry or other troops. When the tank is traveling at night, with lights dimmed or switched off altogether, driving signals are given with the aid of a dimmed flashlight. The same method is also

employed when tanks are in a position of readiness and when leaguered (in bivouac). Orders are transmitted from the tank commander to the gunner by means of speaking-tube and touch signals. The latter are also used for messages from the commander to the loader, and between the gunner and loader.

#### **DUTIES OF THE CREW**

The crew consists of five men—a commander, a gunner, a loader, a driver, and a radio operator who is also the hull machine-gunner.

The tank commander, who is an officer or senior noncom, is responsible for the vehicle and the crew. He indicates targets to the gunner, gives fire orders, and observes the fall of shots.

He keeps a constant lookout for the enemy, observes the zone for which he is responsible, and watches for any orders from the commander's vehicle. In action, he gives his orders to the driver and radio operator by intercommunication telephone, and to the gunner and loader by touch signals or through a speaking tube.

He receives orders by radio or flag, and reports to his commander by radio, signal pistol, or flag.

The gunner is second in command. He fires the turret gun, the turret machine gun, or the machine carbine, as ordered by the tank commander. He assists the tank Commander in observations.

**GERMAN TANK PLATOON OPERATING****From US INTELLIGENCE BULLETIN June 1944****COMMUNICATION**

## a. Within the Point Platoon

In combat, communication within the German tank platoon operating as a point is done basically by radio. Up to that time, liaison is maintained by at least one or two motorcycle couriers attached to the platoon leader. As soon as contact with a hostile force is established, these couriers scatter to the sides and lie in ditches until the whole platoon has passed. They then go back to the company commander and report to him that contact has been made. After this, he carries on by radio.

## b. Within the Armored Regiment

As has been stated, there are five tanks in each platoon—two in each section and one for the platoon leader. The platoon leader and each section leader has a two-way radio; the two remaining tanks have receiving sets only. Regimental commanders and all three battalion commanders have special radio cars, each equipped with 100-watt sets. If the battalions (or companies) attack together, they have radio communication with the regiment. When they attack separately, each uses, in addition to his two-way radio (Funk Gerat 5), four sets capable only of receiving (Funk Gerdt 2's). Each of these receiving sets is used for communication with one of the four companies. Moreover, each company is on a different frequency. In turn, each company commander has a two-way set and two receiving sets, and can speak with the battalion commander. Each battalion, too, is normally on a different frequency. The platoon is on the same frequency as its company commander. Each platoon leader has his second receiving set tuned to the frequency of his battalion commander, in case his company commander should become a casualty. If the regiment attacks as a unit, the network remains unchanged. However, if the battalions act independently, the regimental commander has no communication with them except by messengers, usually motorcyclists. Code is used only with the 100-watt sets, from battalion up to division. During the attack, communication is in the clear, even up to the regimental commander. When battalions attack separately, however, they use code in communicating with the regimental commander. The division commander alone authorizes messages in the clear. If the battalion commander cannot reach his regimental commander by using the two-way Funk Gerdt 5 (which has a range of 6 kilometers), he encodes his message and uses the 100-watt set.

**SOME NOTES ON GERMAN INTELLIGENCE METHODS****From US INTELLIGENCE BULLETIN June 1944****SIGNAL SECURITY AND INTERCEPTION**

A German prisoner, who served in the signal section of an armored division recently encountered in Italy, has described an intercept unit of from 10 to 15 sets which served with his division. Part of the unit was said to concentrate on locating and identifying all possible stations, down to company (and British squadron) level, while the other part listened to the nets thus identified and selected those which afforded the best information. Identification was made by a careful analysis of the characteristics of each set and each operator. The division's artillery regiment was said to have a special direction-finding component which apparently attempted to discover the area from which each projectile came. To do this, the Germans tried to intercept fire orders, locate the stations on the net concerned, and coordinate the results with reports of hostile shelling. This procedure was not especially successful. The foregoing points very clearly to the fact that any carelessness with respect to communication security is extremely dangerous. The Germans are continuously hunting for random bits of free information.

A German artillery signalman captured in Italy made the following comment about signal procedures in his unit. The rule was that no use be made of uncoded references, even over the telephone. Battalions and batteries had code names, and the numerals 1, 2, or 3 following a code name related to the observation post, radio truck, or gun position, respectively. All radio messages were doubly coded, the key being changed every two hours. In actual combat the use of radio was reduced to a minimum because of unhappy experiences with hostile direction finding. As a further precaution, the radio truck was situated half a mile from the gun position.

**GERMAN PRISONERS DISCUSS THE Pz.Kw.6 "Tiger"****From US INTELLIGENCE BULLETIN April 1944**

According to a prisoner, the chain of wireless communication is from battalion to company to platoon. The latter link is a frequency on which all the tanks in the company are tuned, but each platoon and headquarters has a code name by which it is called up. For special operations—for example, long-range reconnaissance patrols—tanks can be netted by a frequency other than the company frequency. However, this entails altering the sets. Alternatively, tanks can be given two sets tuned to two frequencies, but this is seldom done except in the case of the company headquarters tank, where it is the normal procedure. All priority and battle messages are passed in the clear, but important tactical terms (such as "attack," "outflank," "assemble") have code names (such as "dance," "sing," and so on). Each tank carries a list of these code names.

In Russia, where German troops often were 4 miles or so from headquarters, Soviet troops made a practice of intercepting traffic between battalion and company, so that they would have enough time to take preparatory measures before company orders came through.