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Wireless for Wehrmacht in detail®

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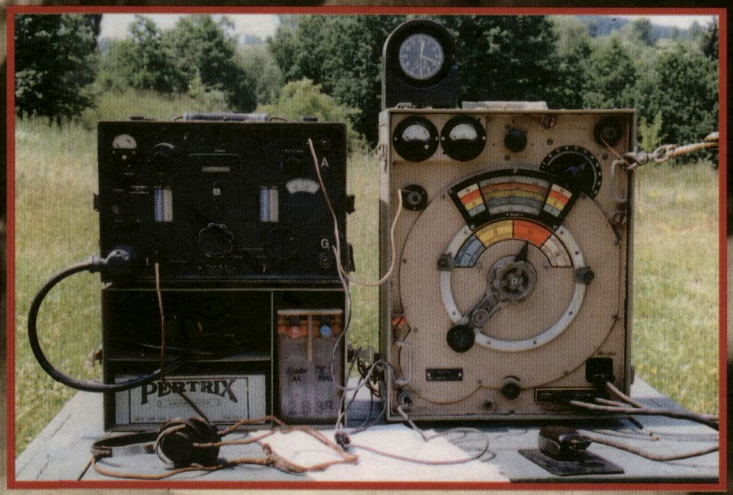

Alois Veselý
František Kořán

PHOTO MANUAL FOR MODELERS®

WWP®

WINGS & WHEELS PUBLICATIONS

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NEXT ISSUE IN RED LINE JANUARY 2002

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This publication would never have been completed without the help of Mr Alois Veselý from Prague, Czech Republic and Mr Michal Burian of Army Technical Museum at Lešany.
RAK

Rear cover :
Wireless accessories in the collections of the Army Technical Museum at Lešany and Mr Alois Veselý.
Photo © František Kořán 1999.

This publication would like to acquaint the modelling public with communication means of the German armed forces during the WWII. We do not intend to burden the modellers with technical and tactical specifications, our aim is to show how vast is this theme and to provoke interest in this equipment. The attention is devoted to the basic and most widespread WW II types of telecommunications technology. Many lay readers may feel this publication a bit confusing, yet it was our aim to present the large number of types and their possible combinations in a list o catalogue fashion that is apparently the most lucid. We would like to ask historians, collectors, radio enthusiasts and others who are knowledgeable in this realm of activities for patience when judging this volume. It is aimed mainly a modellers and a wide lay public with no previous knowledge of the theme. Thank you for understanding. Authors.

Reference and source material:
Alois Veselý's archive

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Wireless for Wehrmacht

German Radio Equipment in World War II

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PHOTO MANUAL FOR MODELERS

Left reconstruction of interior equipment of Kfz. 61 and Kfz. 305 radio vans, Lw.E.a long-wave receiver and 100 W.S. LW transmitter

Nachrichtentruppe

Stäbe

Stab einer Armeenachrichtenabteilung (mot)

Stab einer Korpsnachrichtenabteilung (mot)

Stab einer Infanteriedivisions-nachrichtenabteilung

Previous page interior of the Kfz. 61 radio van, fitted with the Fu 11 set according to the 1936 standard.

Bottom fender markings of the communications troops vehicles

Einheiten:

Kompanieführer der Nachrichtentruppe

Nachrichtenkompanie

Fernsprechkompanie (tmot)

Fernsprechkompanie (mot)

Fernsprechbaukompanie (mot)

Fernsprechbetriebskompanie (mot)

Funkkompanie (mot)

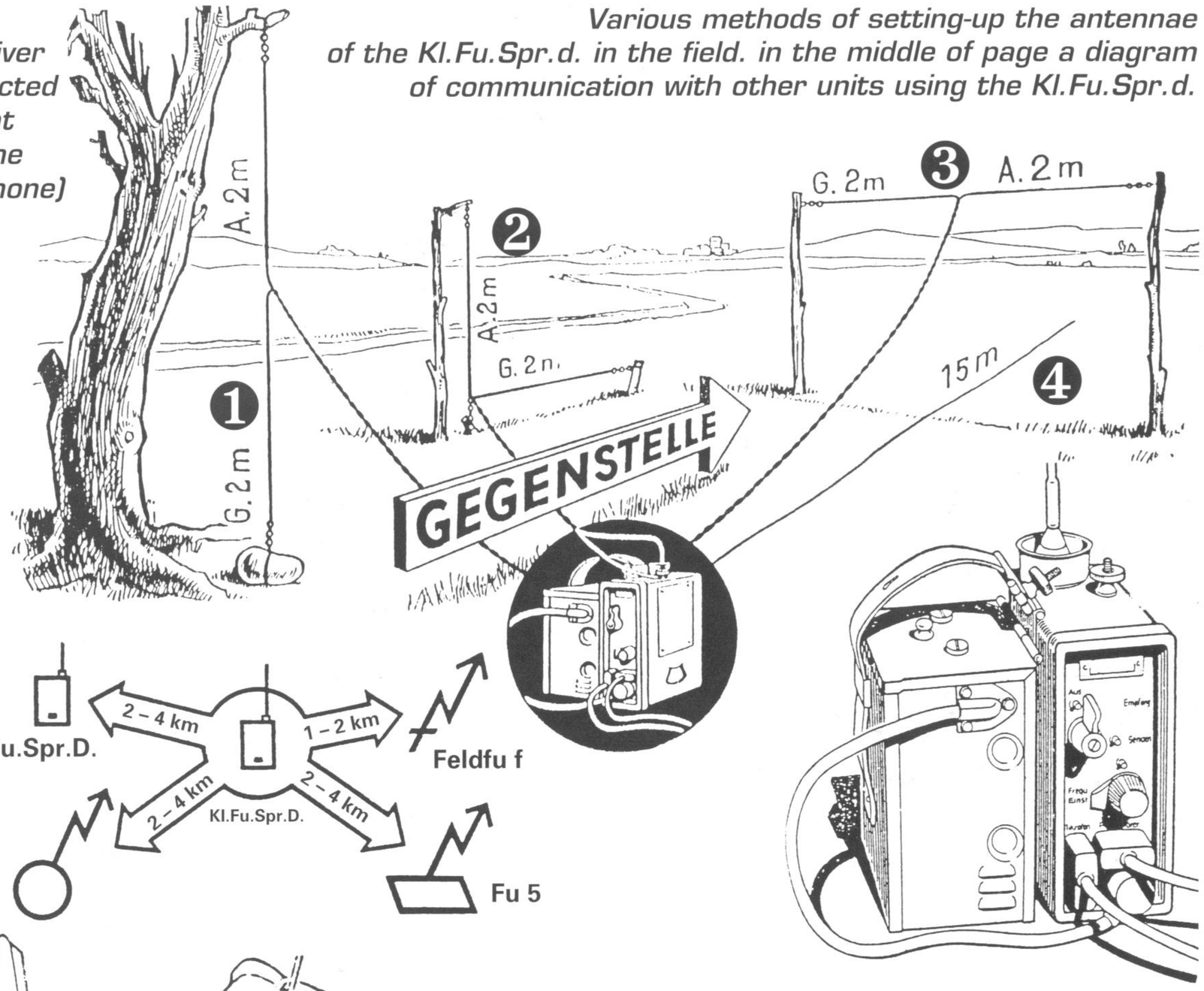
Gebirgsnachrichtenkompanie (tmot)

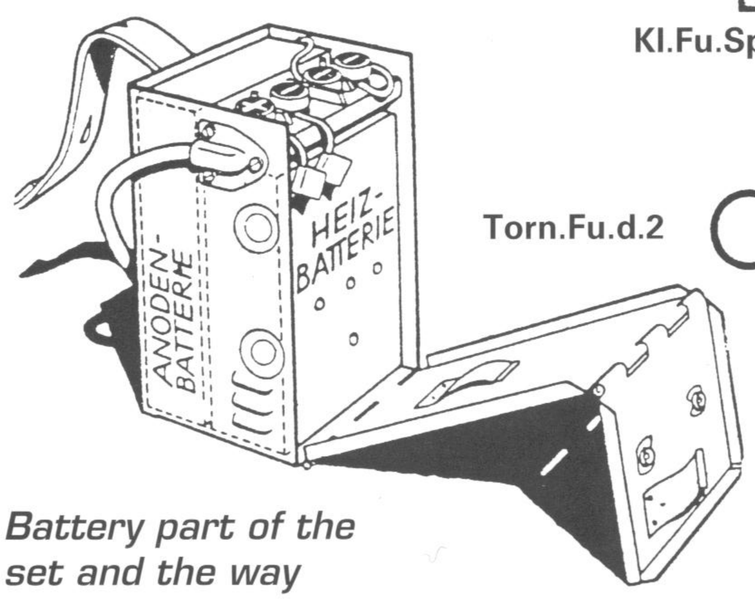
leichte Nachrichtenkolonne (mot)

Right a reconstruction of interior of the Kfz. 17 radio van with the newer version of the Fu 11.

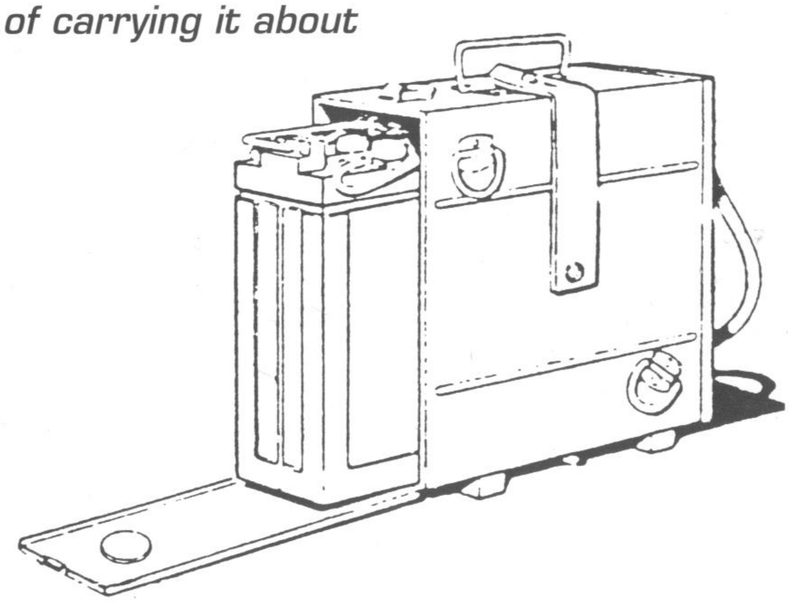
Left a transceiver set connected to a throat microphone (laryngophone)

Various methods of setting-up the antennae of the Kl.Fu.Spr.d. in the field. in the middle of page a diagram of communication with other units using the Kl.Fu.Spr.d.

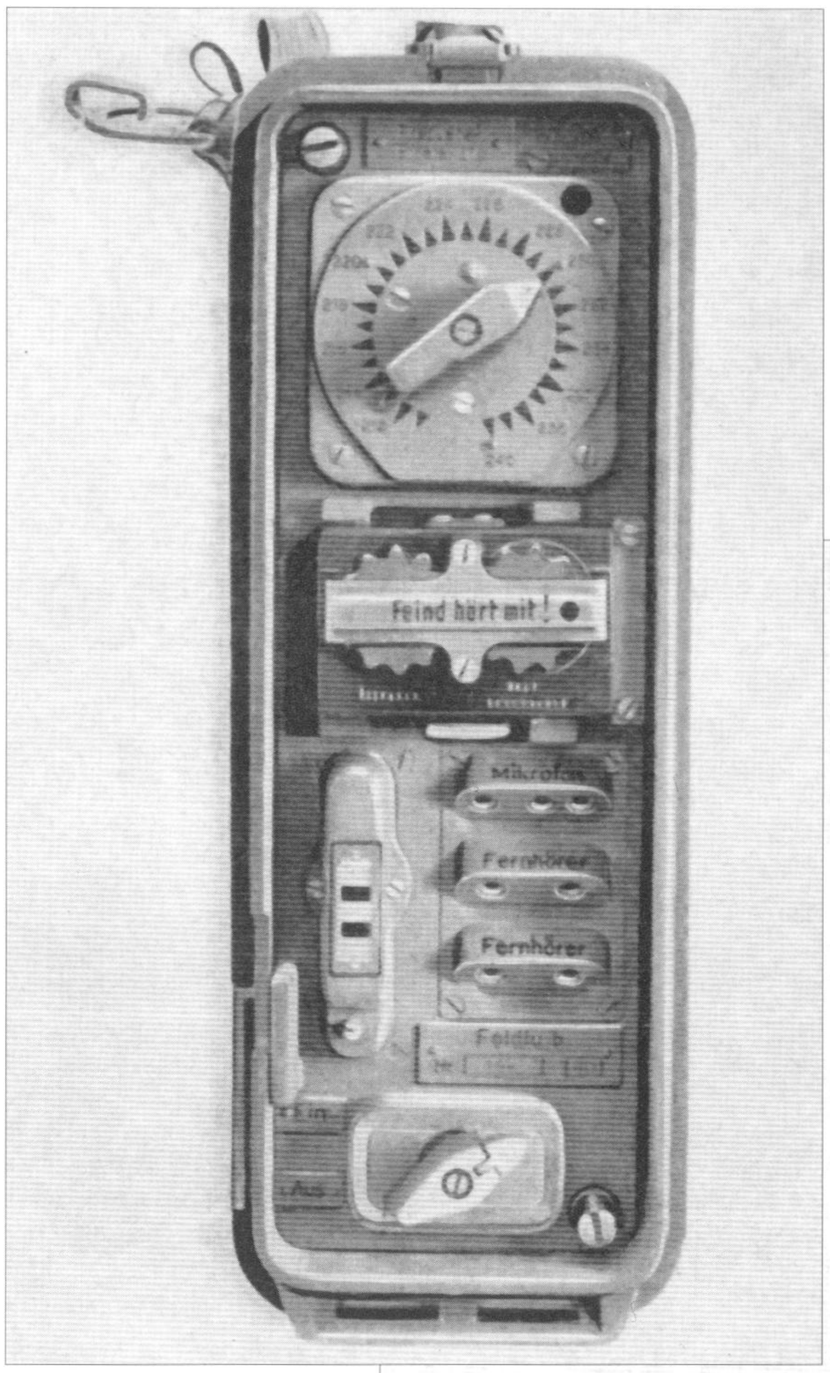




Battery part of the set and the way of carrying it about

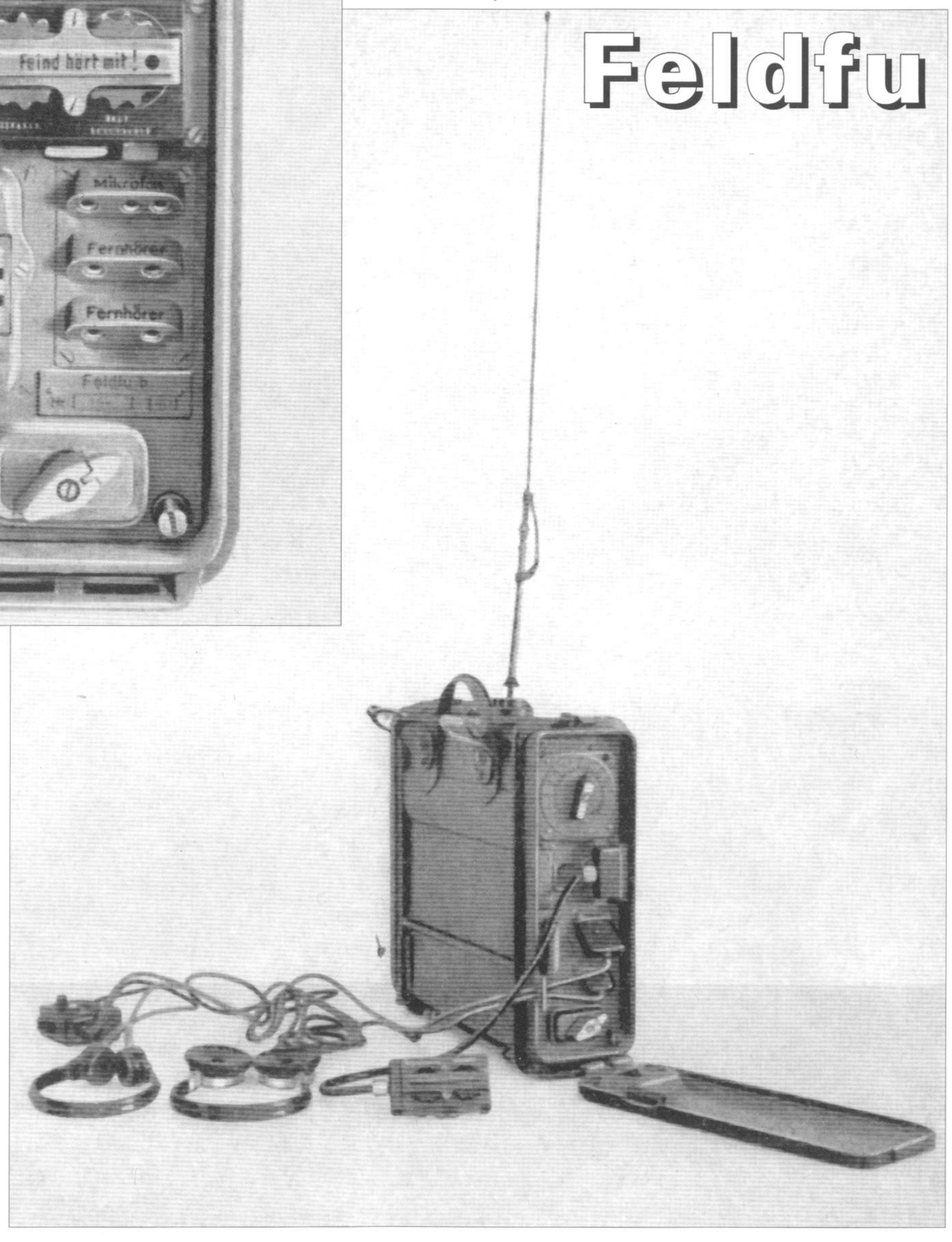


Kl.Fu.Spr.d. – the smallest German transceiver set.

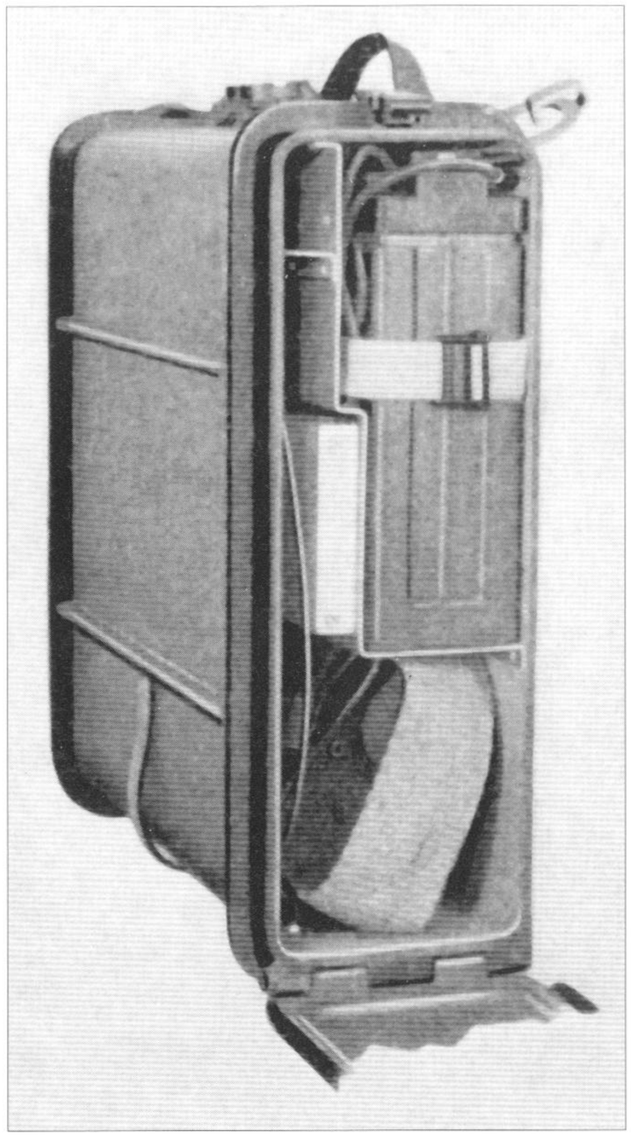


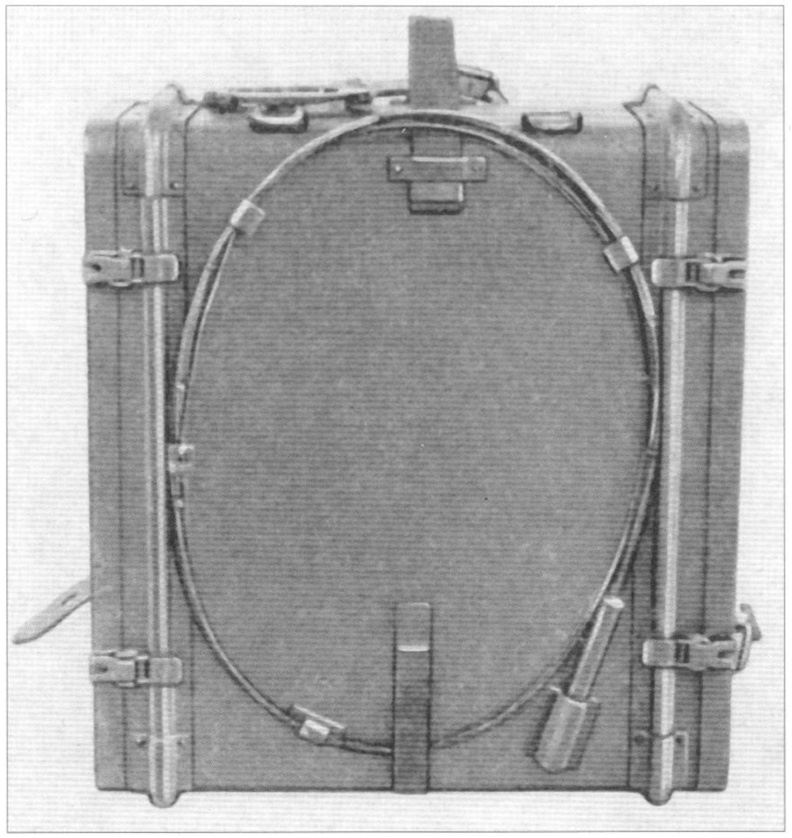
Communication device for the lowest levels of command. It was produced in seven frequency versions. Feldfu. a1, b, b1, b2 and c in a frequency band of 90 to 160 MHz. Feldfu. f and h. variants in a ten-meter band. The scales were graded in sectors. Individual frequencies were used by infantry, engineers and Panzergrenadiers. The range was 0,8 to 1,5 km.

Feldfu

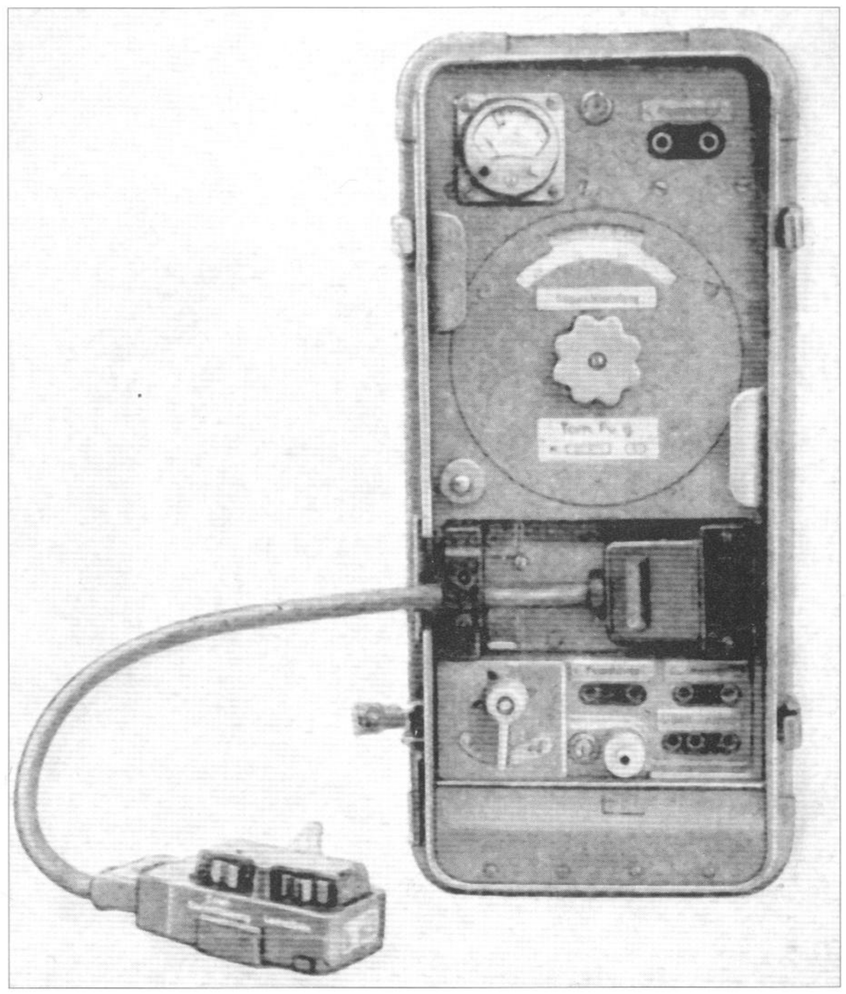


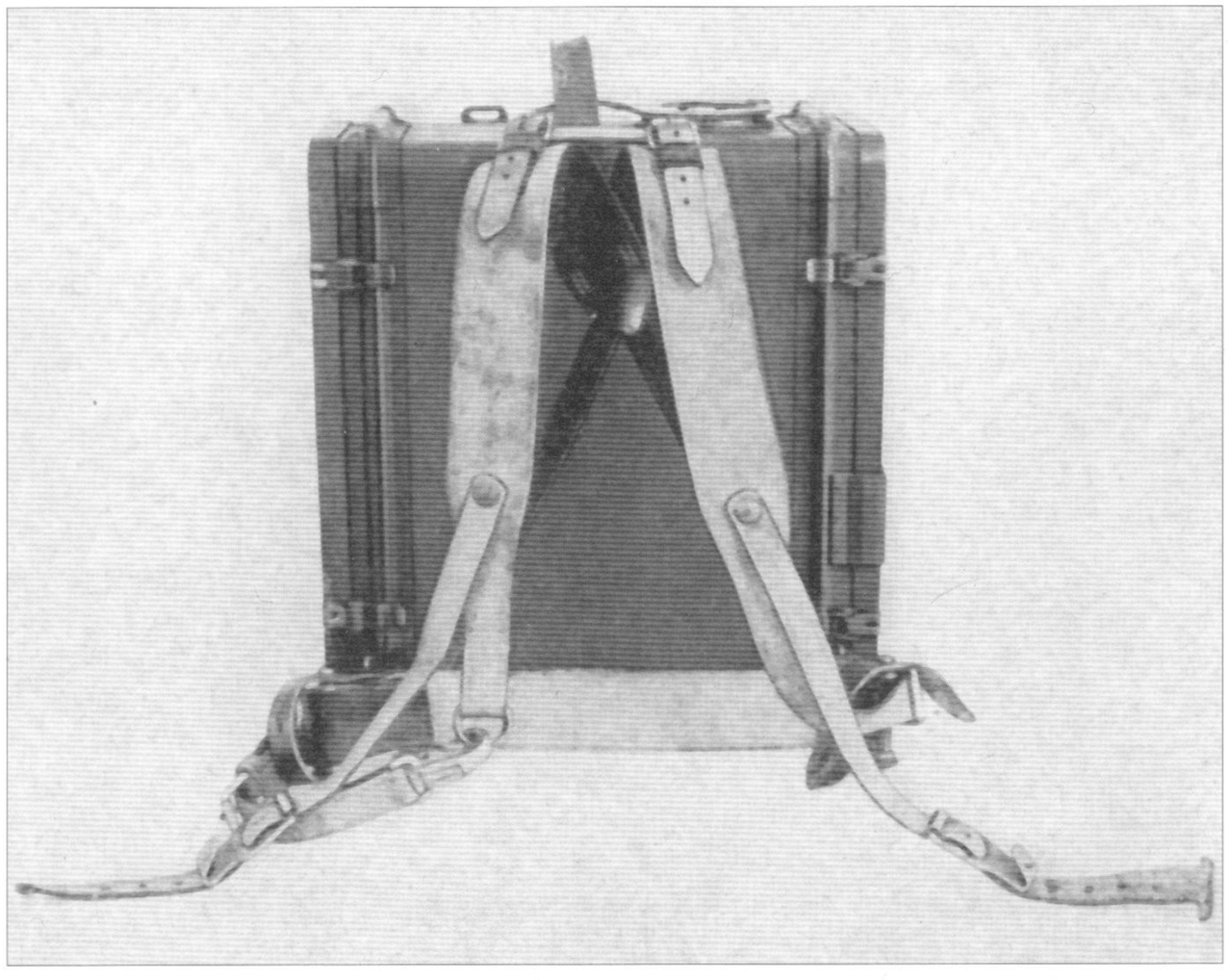
Torn. Fu g.



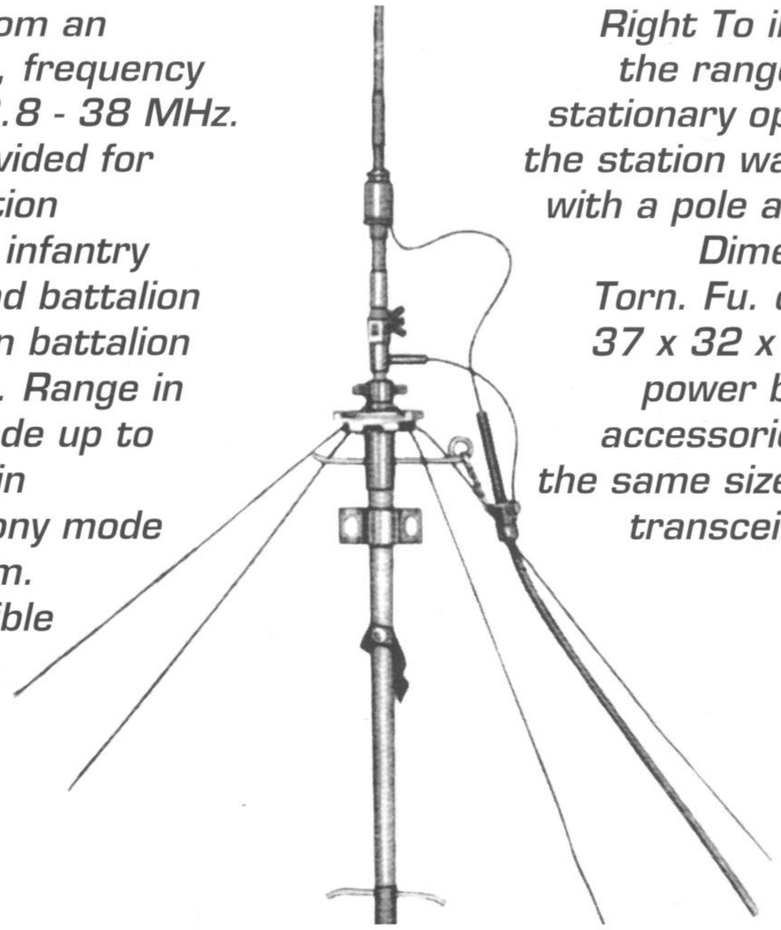


A compact SW transceiver set, frequency band of 2.5 to 3.5 MHz; it was intended for the middle levels of command. Range in the wireless mode up to 20 km, radiotelephony to max. 12 km. Size: 38 x 18 x 33 cm.

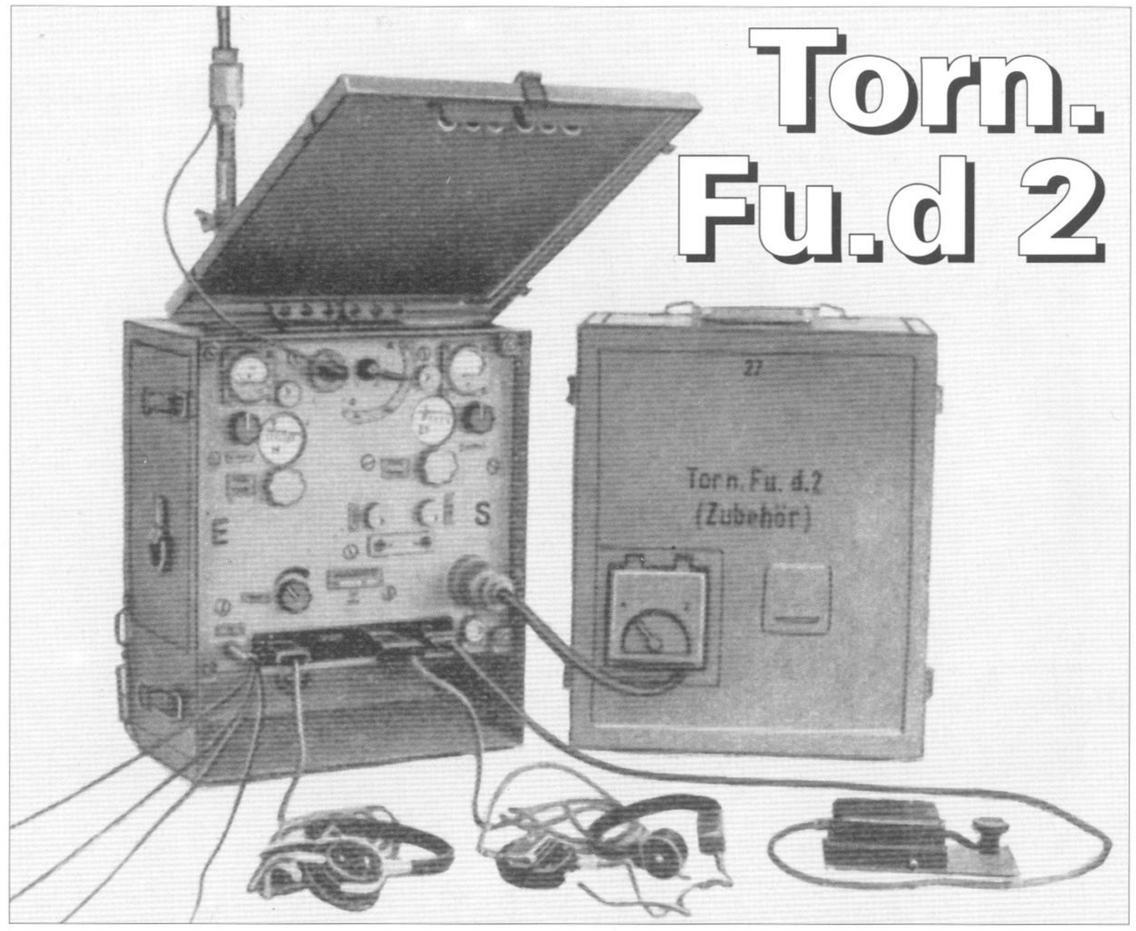


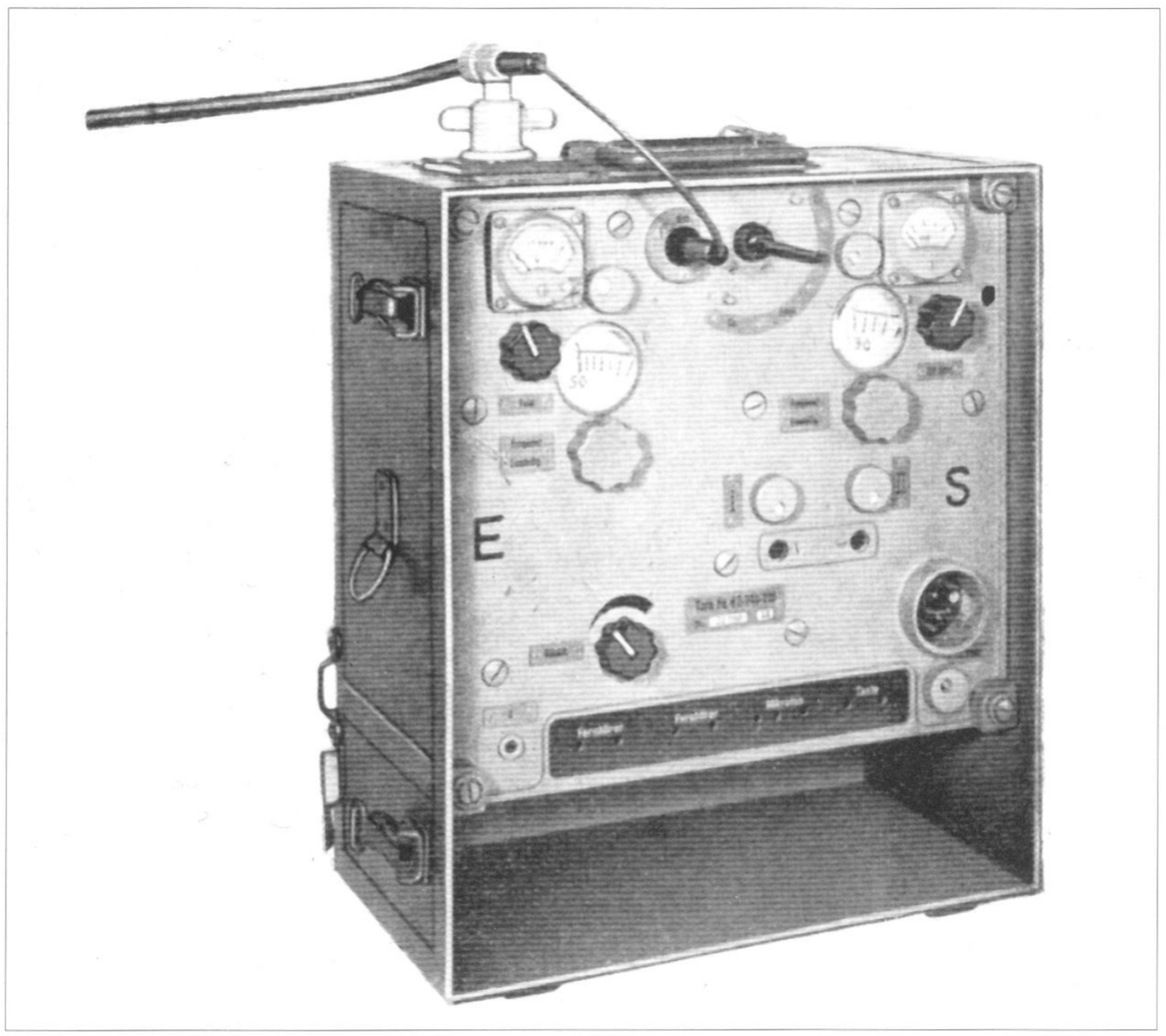


Below/bottom an all-army set, frequency range of 33.8 - 38 MHz. The set provided for communication between an infantry regiment and battalion and between battalion and platoon. Range in wireless mode up to 14 km and in radiotelephony mode up to 6.5 km. It was possible to use it underway.

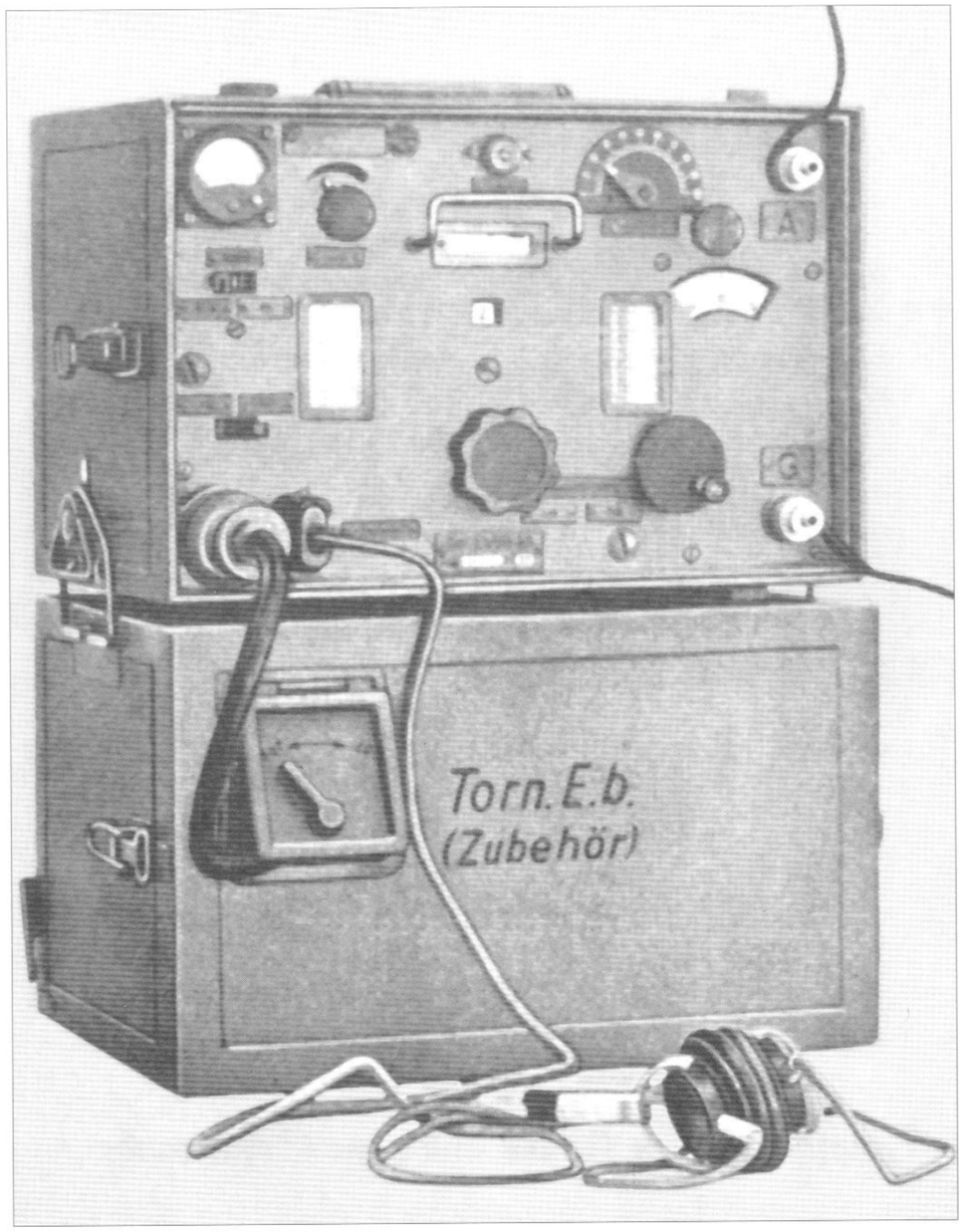


Right To increase the range and in stationary operation the station was fitted with a pole antenna. Dimensions: Torn. Fu. d 2 was 37 x 32 x 20 cm, power box with accessories were the same size as the transceiver set.

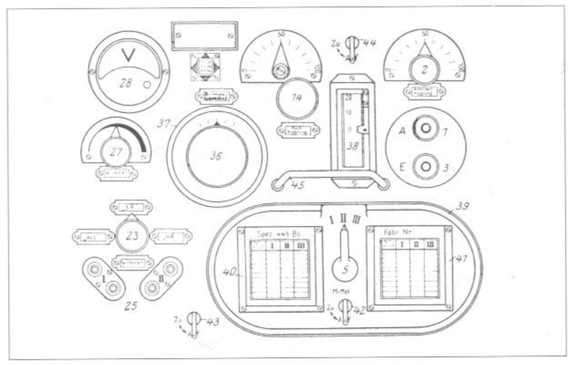


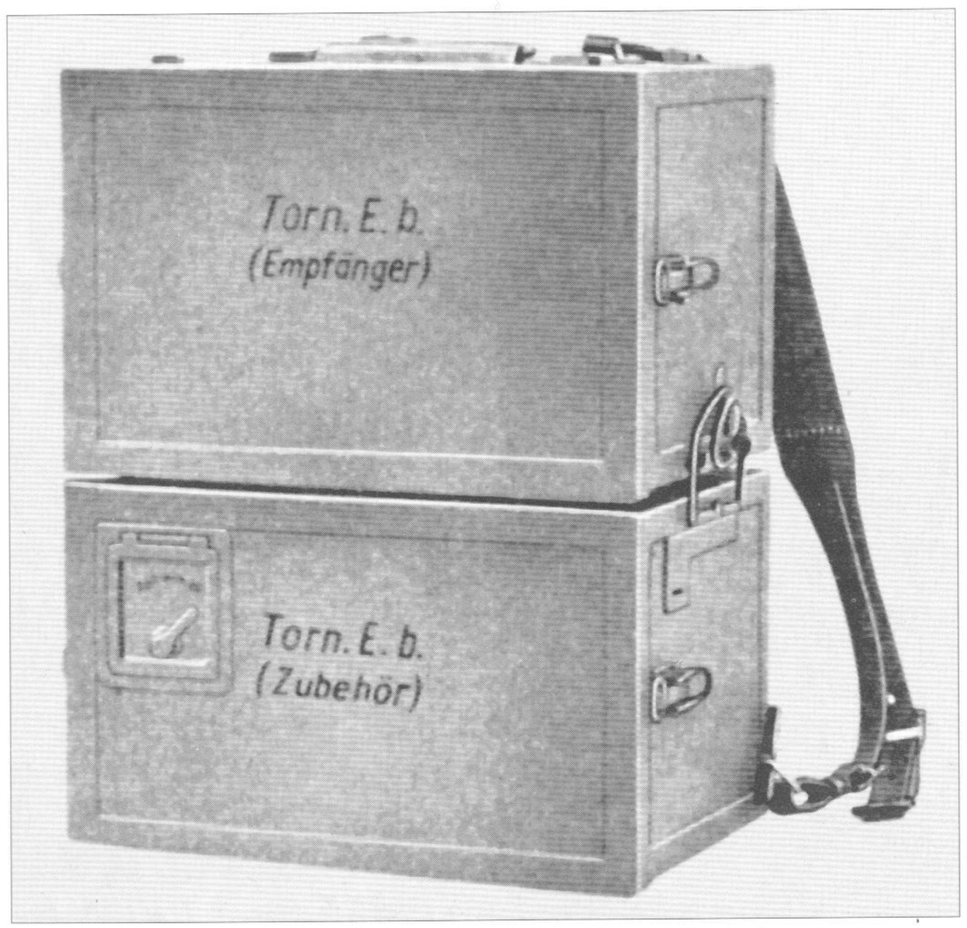


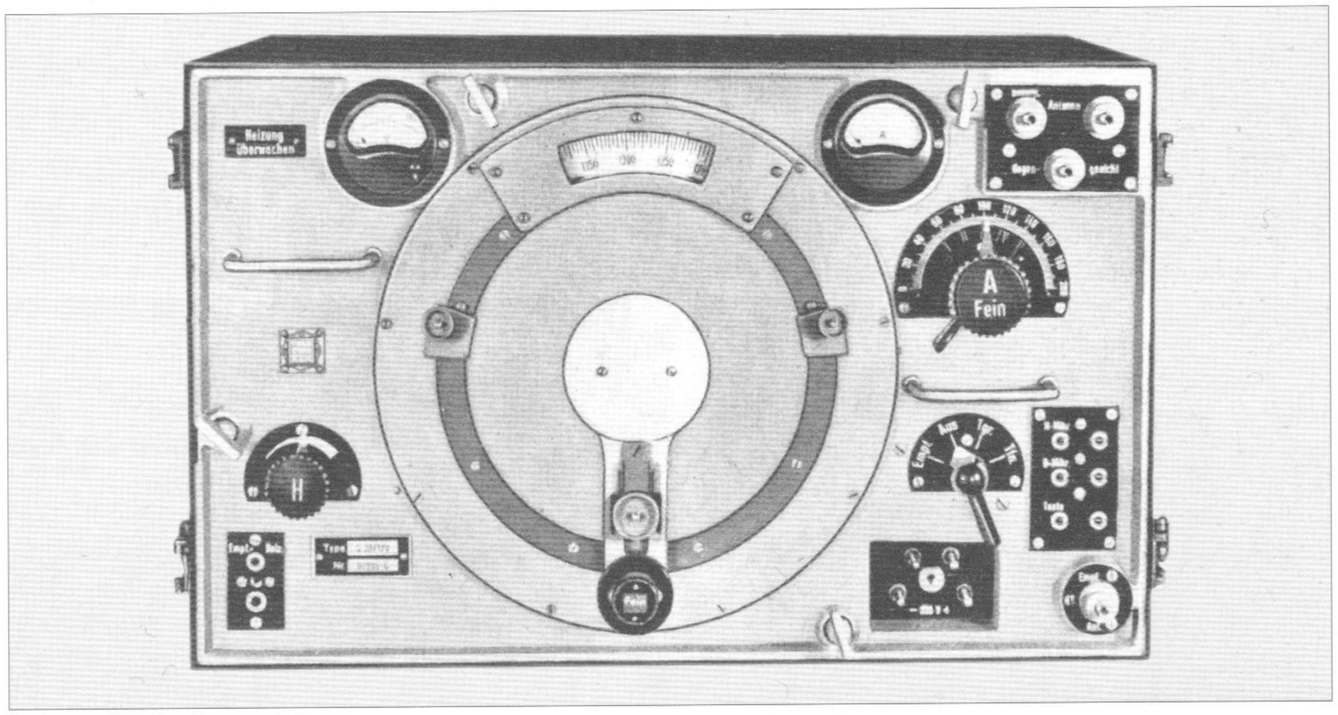
Right radio operators providing communications during the French campaign, 1940.



Left Fu 1 short-wave receiver of Torn.E.445 Bs type according to Wehrmacht standard of 1936. It was a 1st generation equipment with pin-socket electron tubes. In 1943 a new Fu 1 - Fu 25 standard was put to effect, which concerns common radio equipment of ground forces. Size: 46 x 36 x 22 cm.

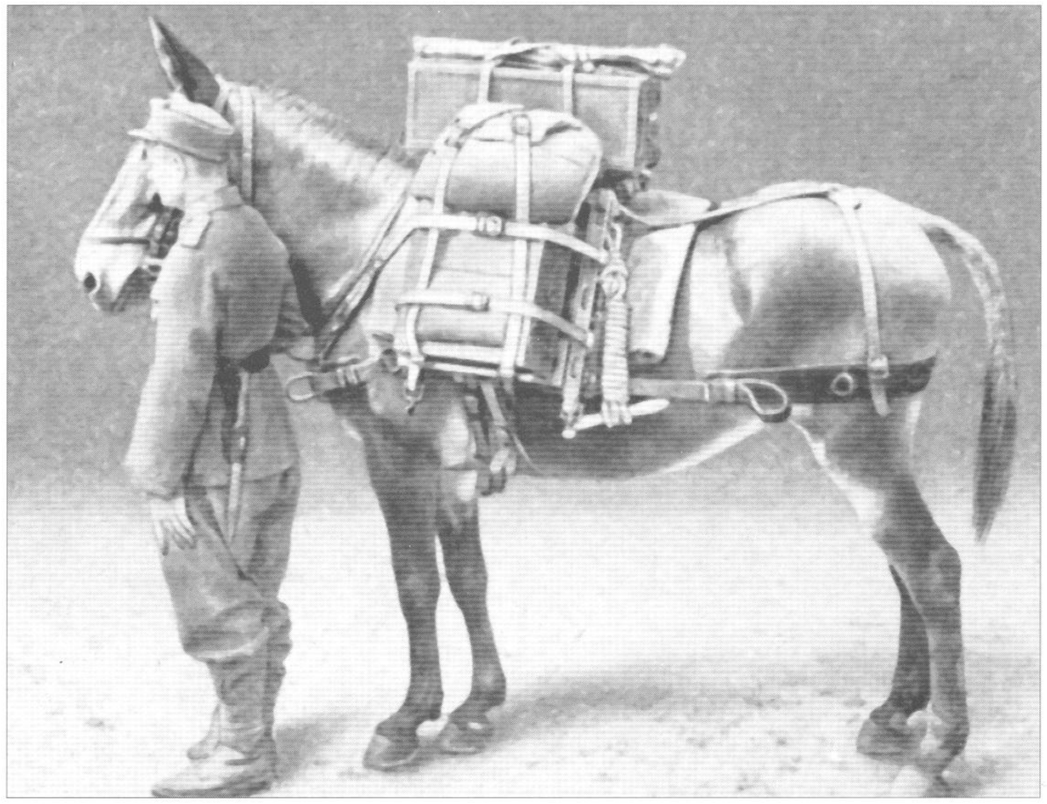


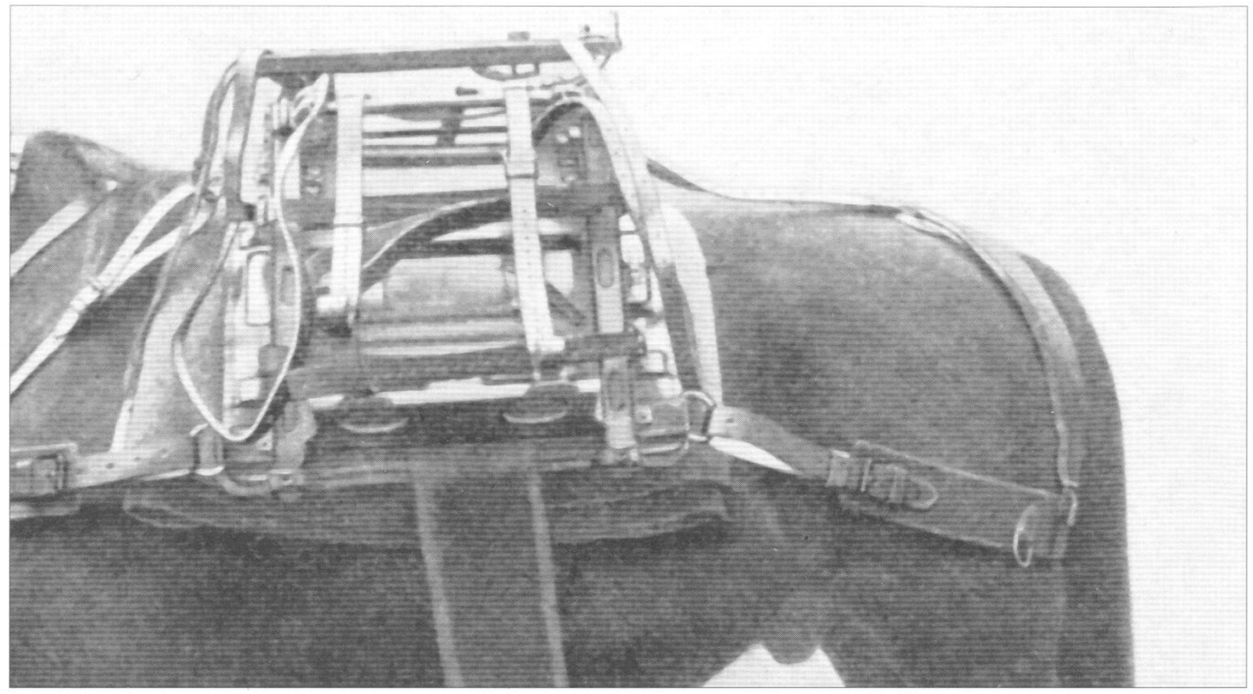


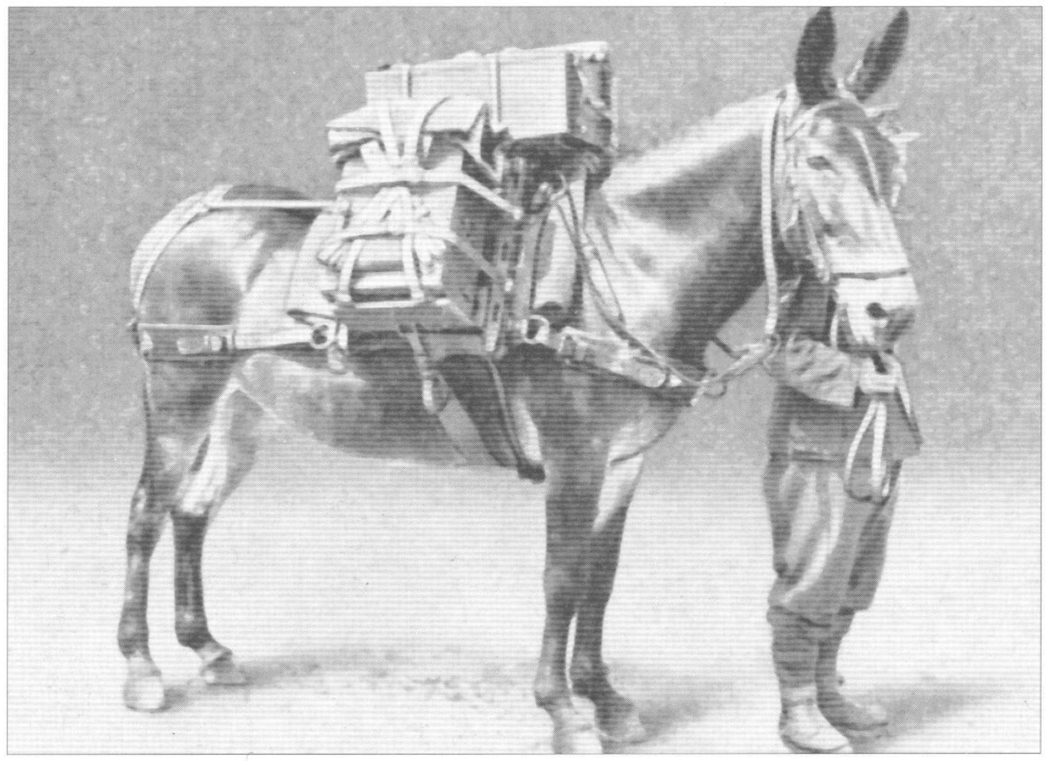


Left unified Fu 1 receiver of Torn.E.b type, frequency range of 0.1 - 7.1 MHz according to the new 1943 standard. This receiver introduced the new generation of military telecommunication equipment of unique design school represented by Telefunken and Lorenz concerns. Size: 24 x 36 x 22 cm, Power source box 22 x 36 x 22 cm

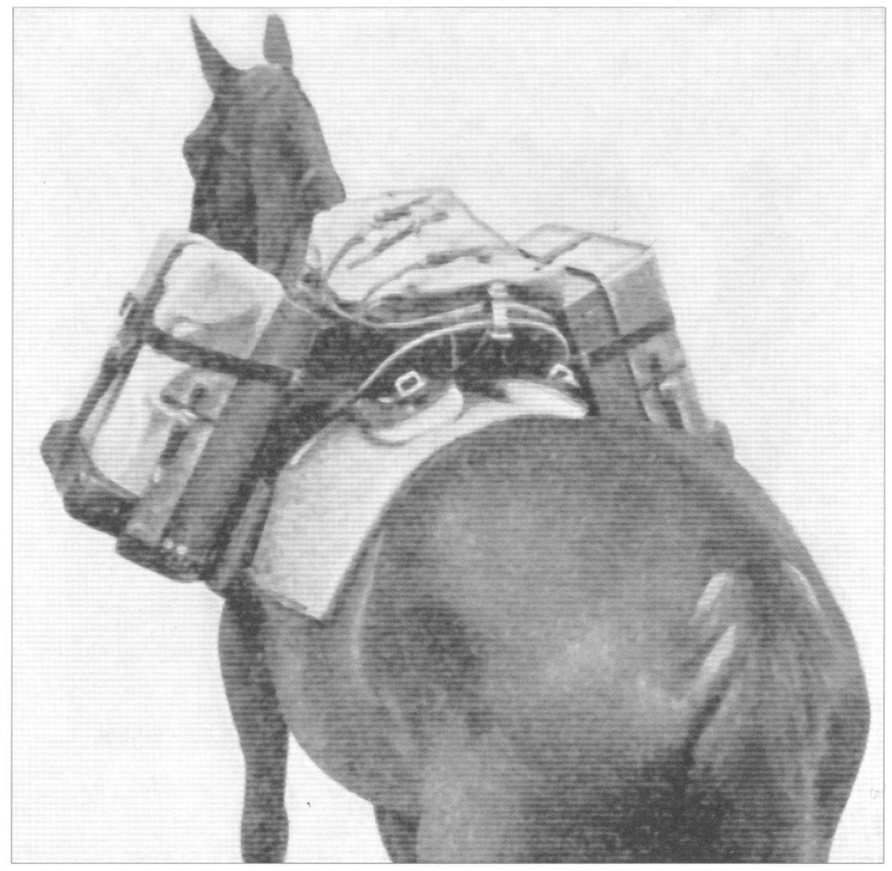
Above 30 W.S. Transmitter. Short-wave 30 W.S. transmitter with a Torn.E.445 Bs receiver made up the Fu 10 radio set, fitted to the reconnaissance AF-V's.

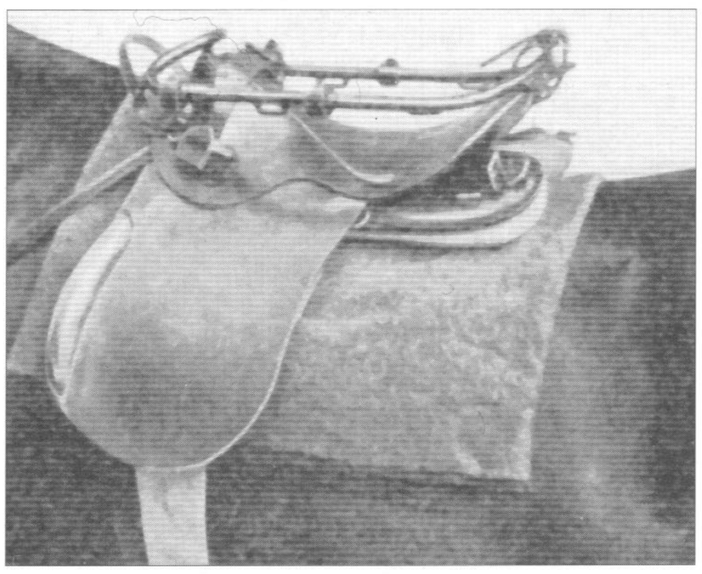


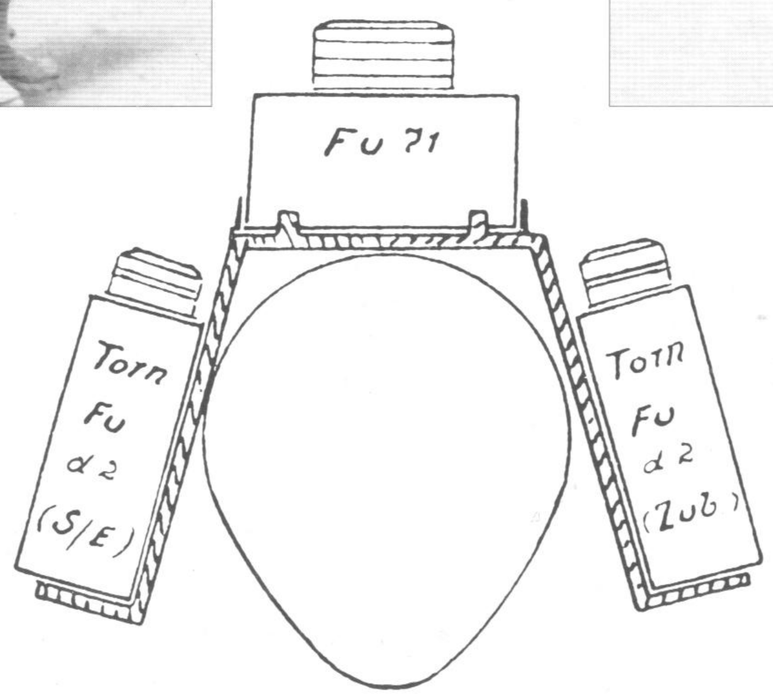




Horse transport of portable radio sets.
Bottom left a detail of the saddle itself.
Line drawing below shows the placement of individual parts of the set. The transceiver set to the left and the power source to the right.







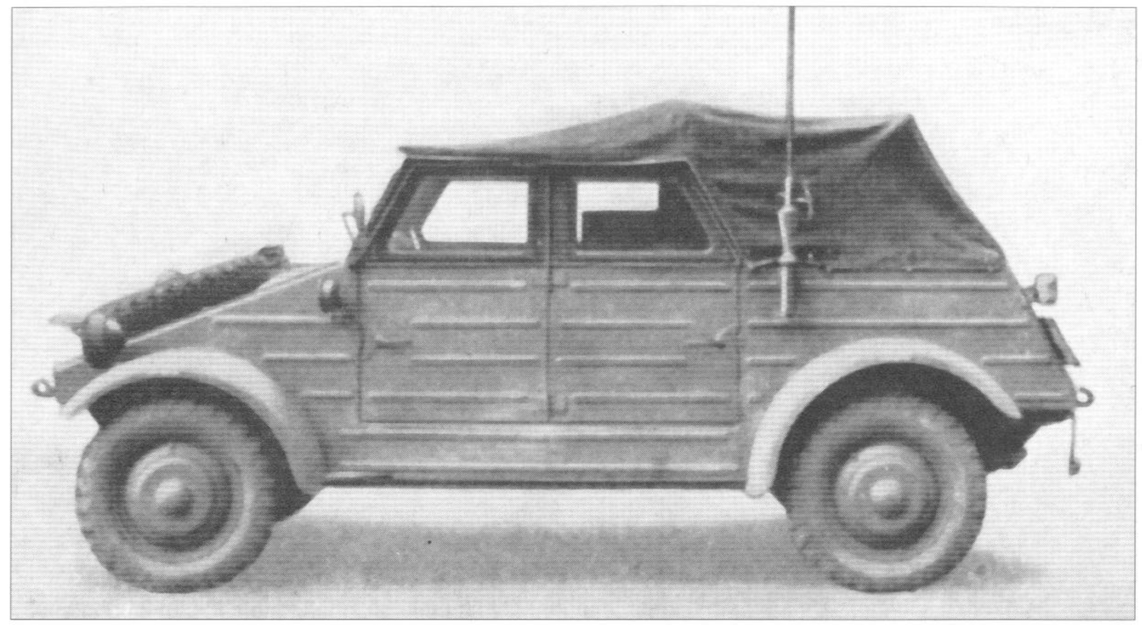
Standard 1936

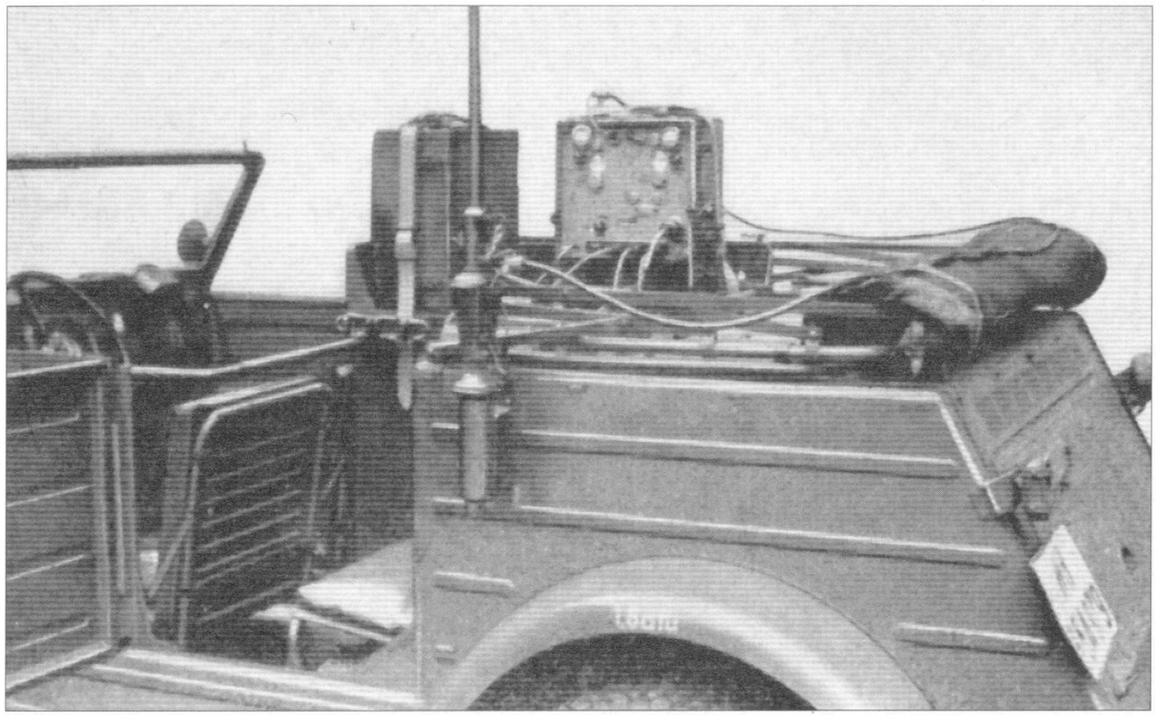
Receiver/Transmitter Set:

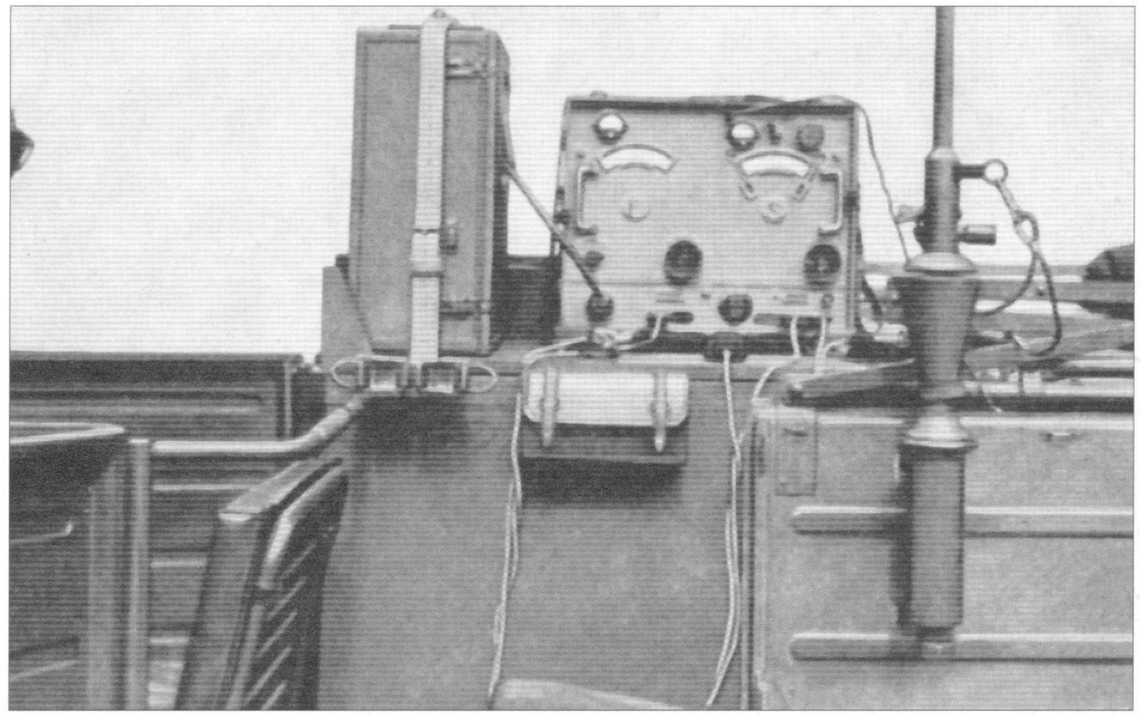
Fu 1	Torn.E.445 Bs
Fu 2	Ukw.E.c1
Fu 3	Ukw.E.d1
Fu 4	Mw.E.a, a1
Fu 5	Ukw.E.c1 + 10 W.S.a/b
Fu 6	Ukw.E.c1 + 20 W.S.c
Fu 8	Mw.E.a + 30 W.S.
Fu 9	Torn.E.445 Bs + 5 W.S.
Fu 10	Torn.E.445 Bs + 30 W.S.
Fu 11	Torn.E.445 Bs + 100 W.S.

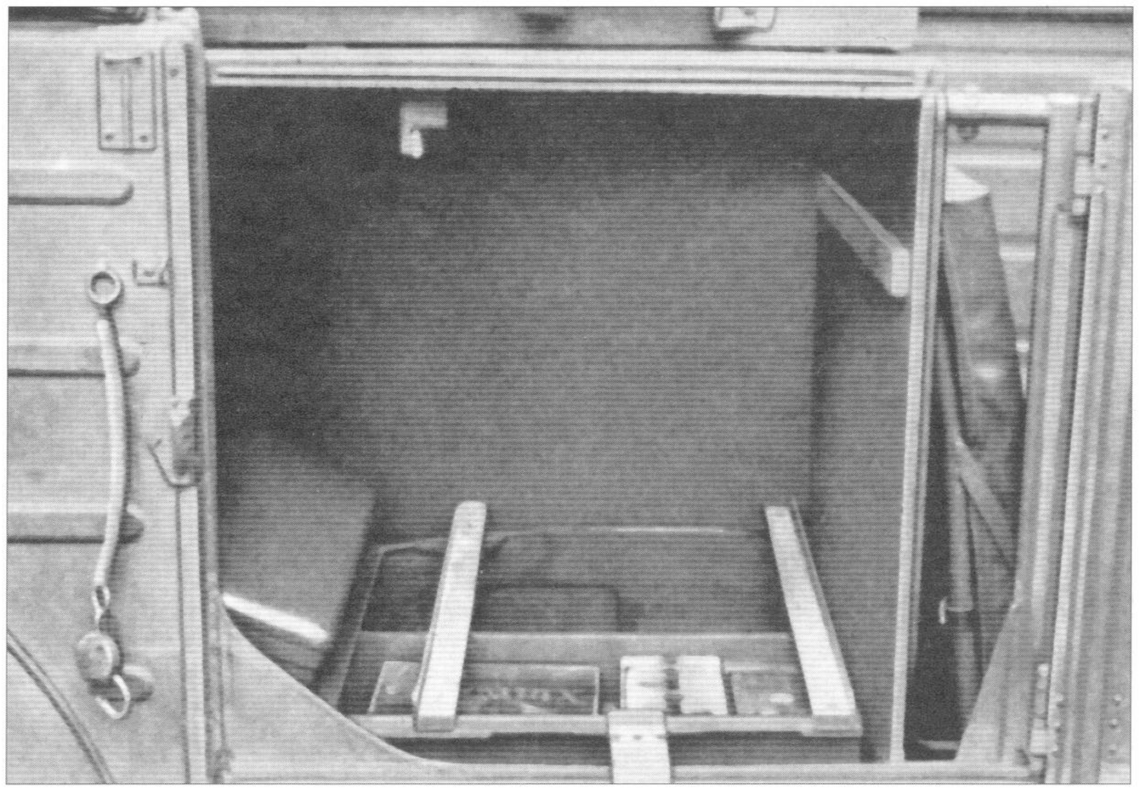
VW Kübelwagen type 82 as Kfz. 2

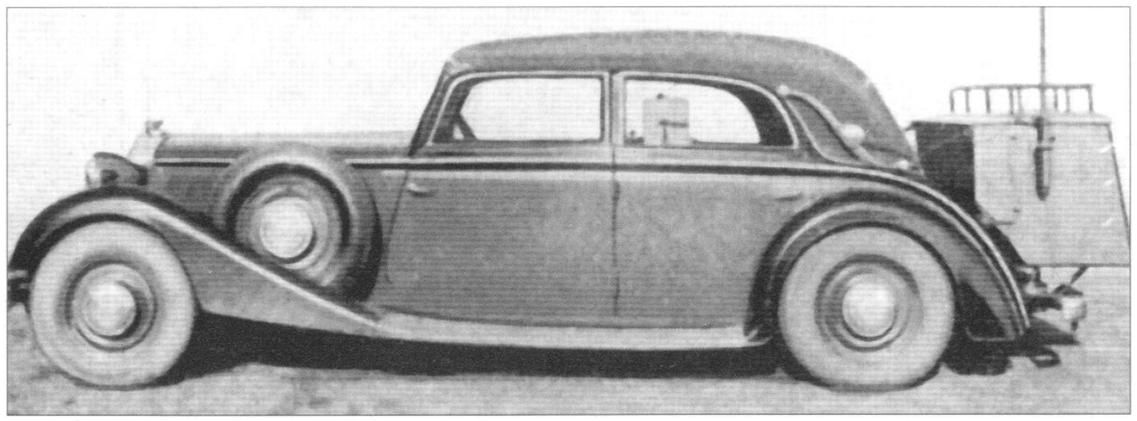
The most versatile German light cross-country vehicle, the VW Kübelwagen type 82 in the radio vehicle version, here the Model 39. The portable Torn.Fu. f. radio station was utilised for all services; it was a short-wave station of 35 km range in the cw/phone regime and 15 km range in the R/T. It was also fitted to motor cars (PKW - Personenkraftwagen in German parlance). Size: 40 x 46 x 21 cm, power source box of the same size as the radio.

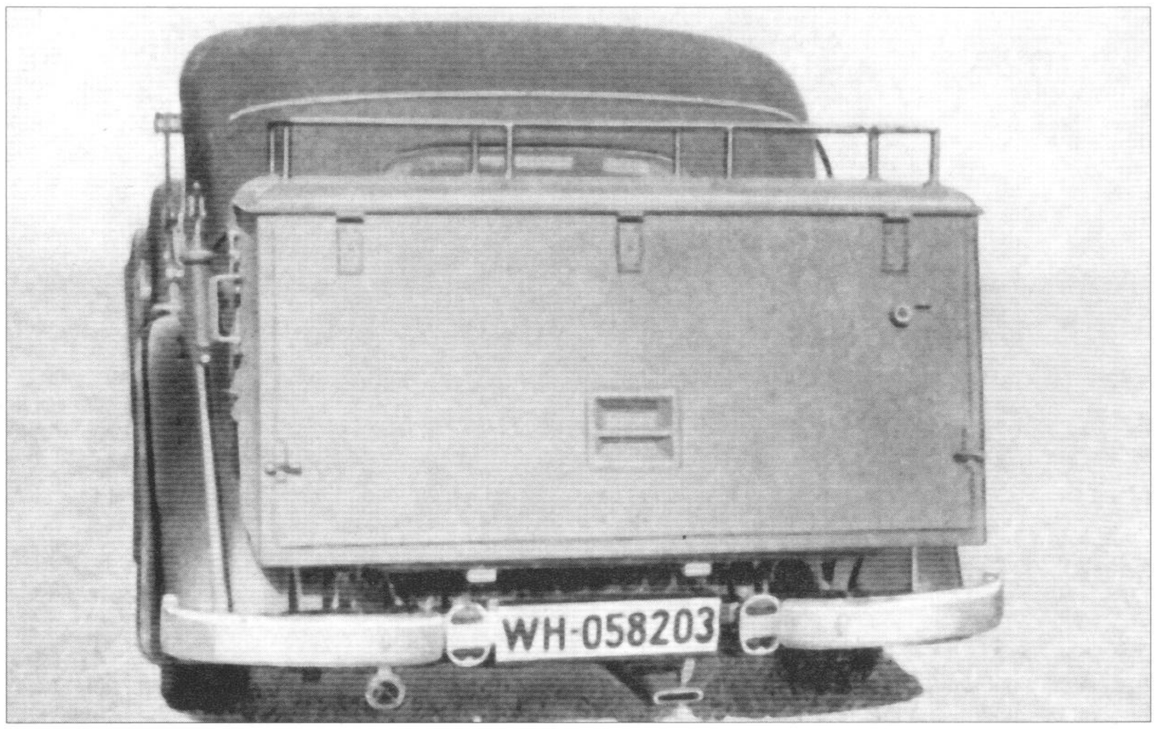








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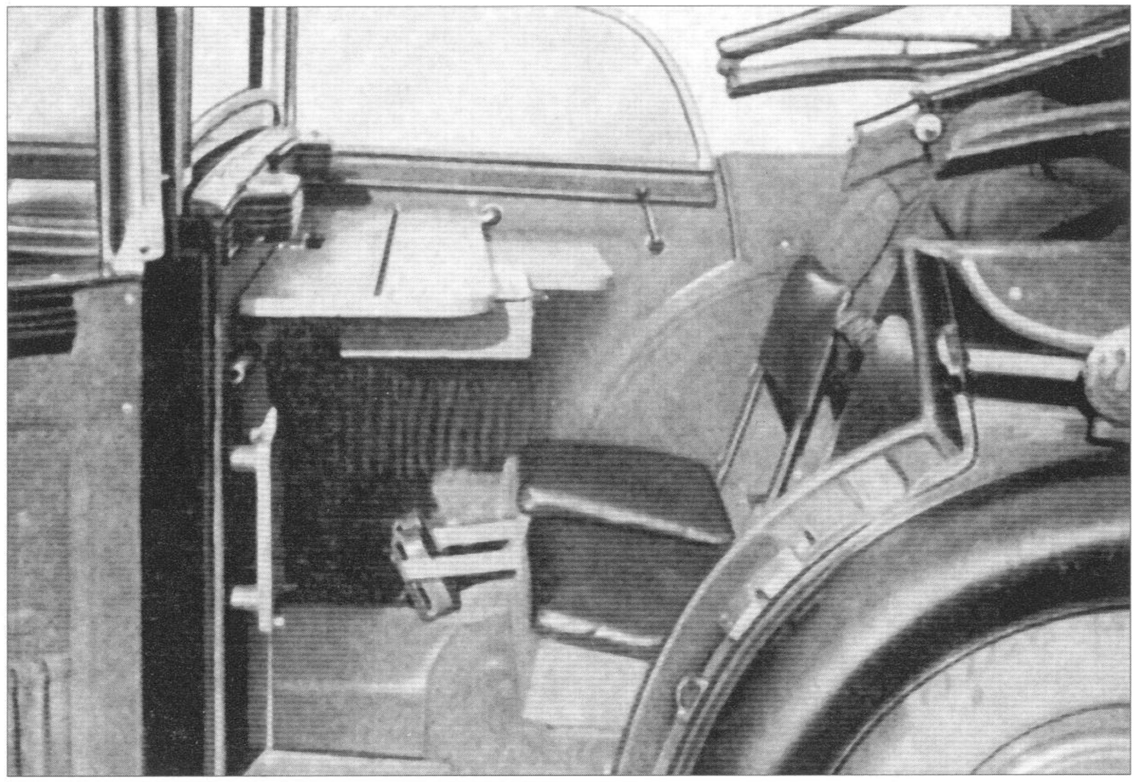

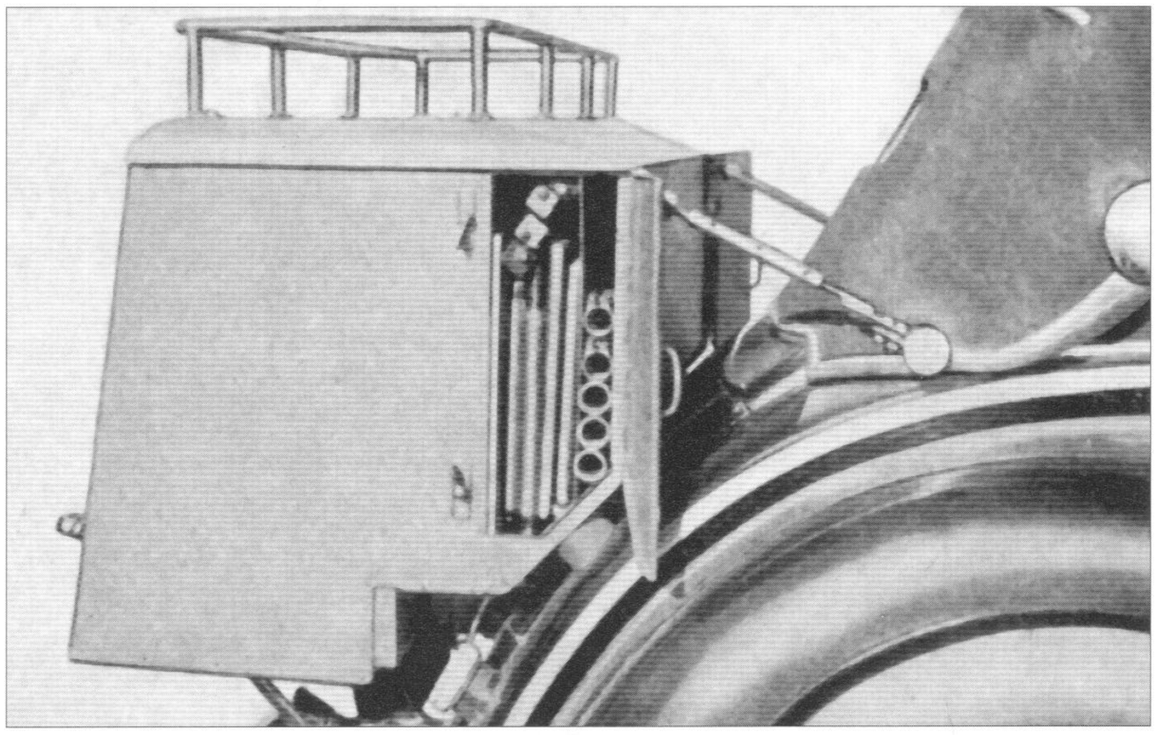


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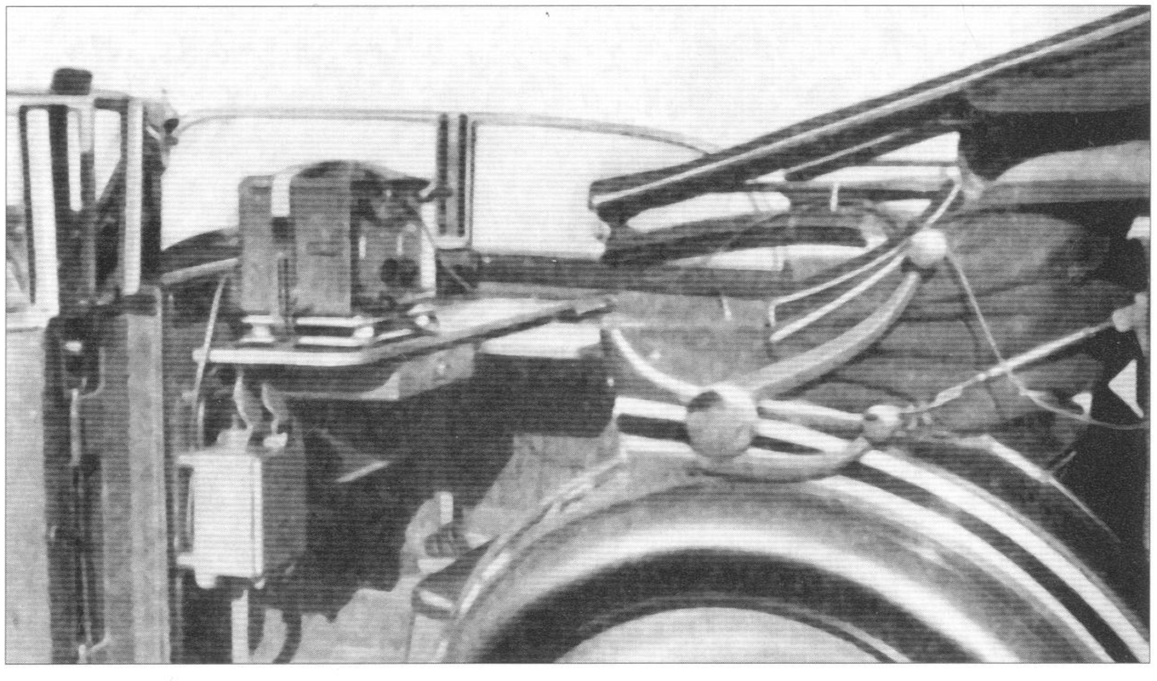
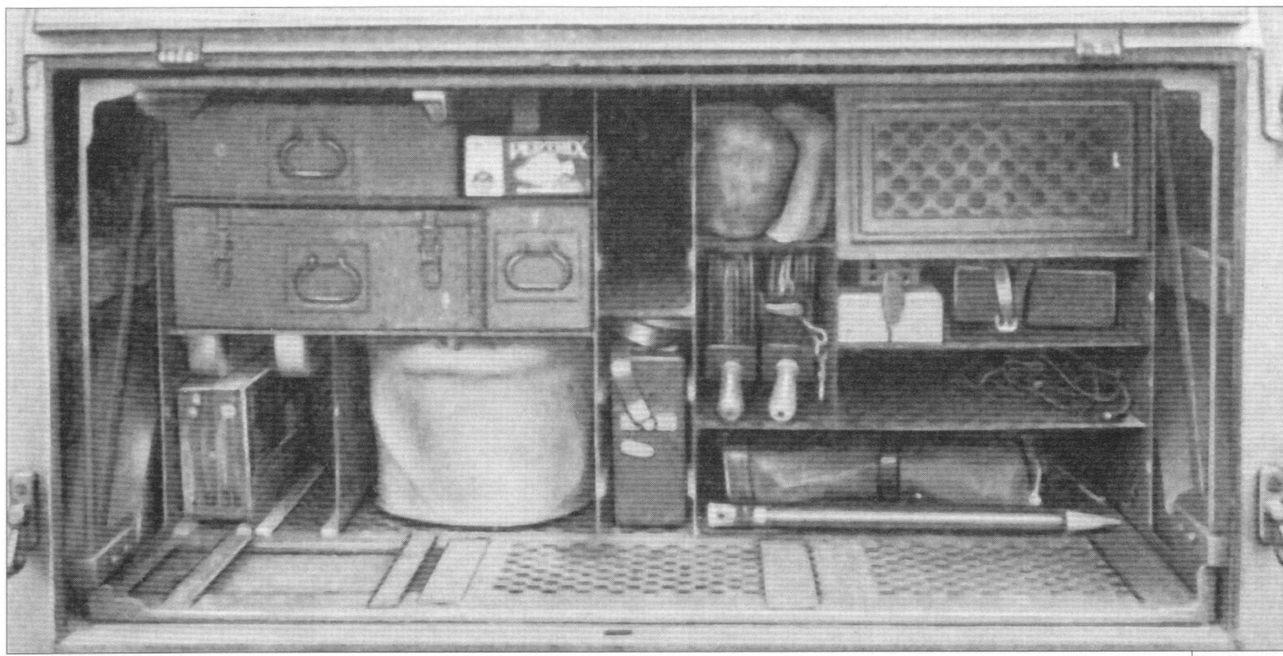
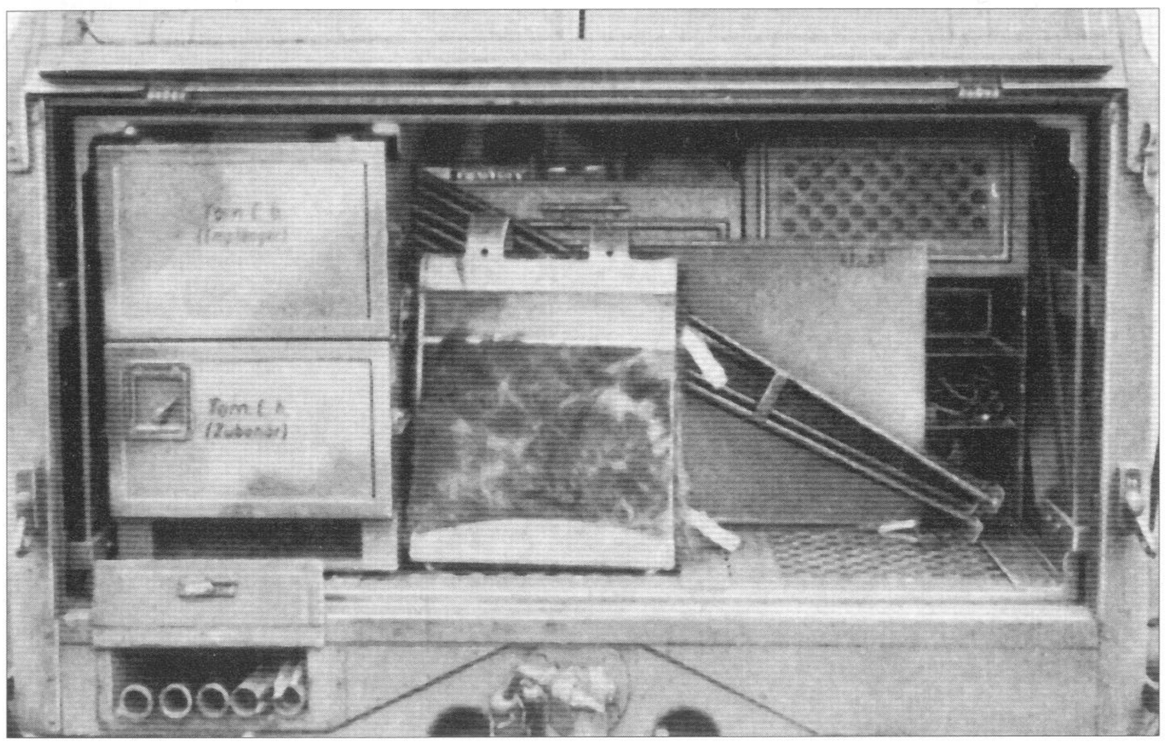
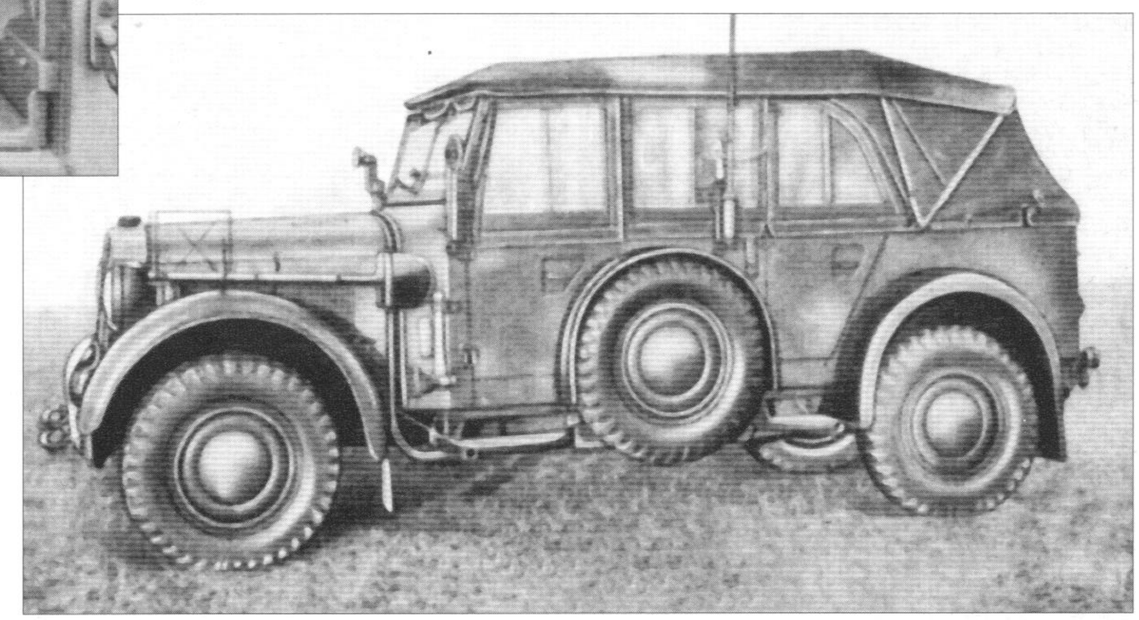
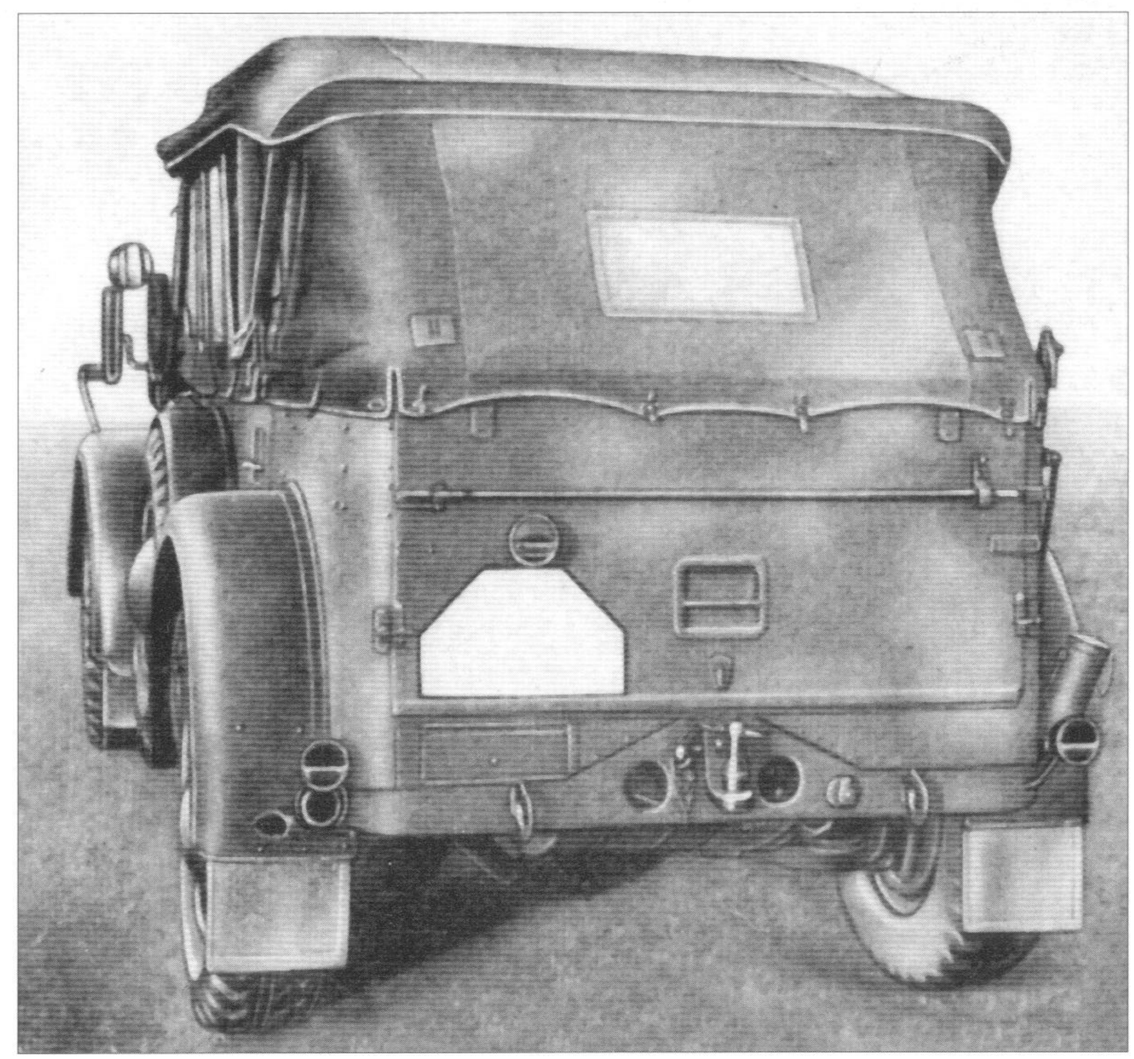


Horch 901 and 830BL as Kfz.15





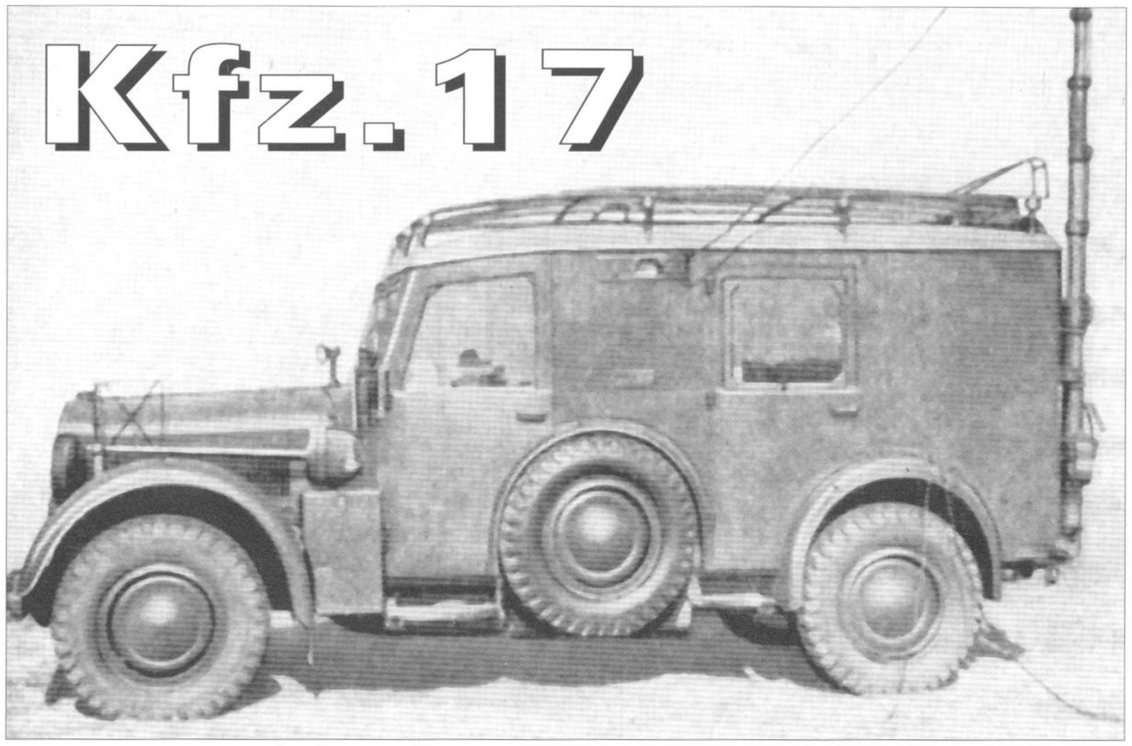


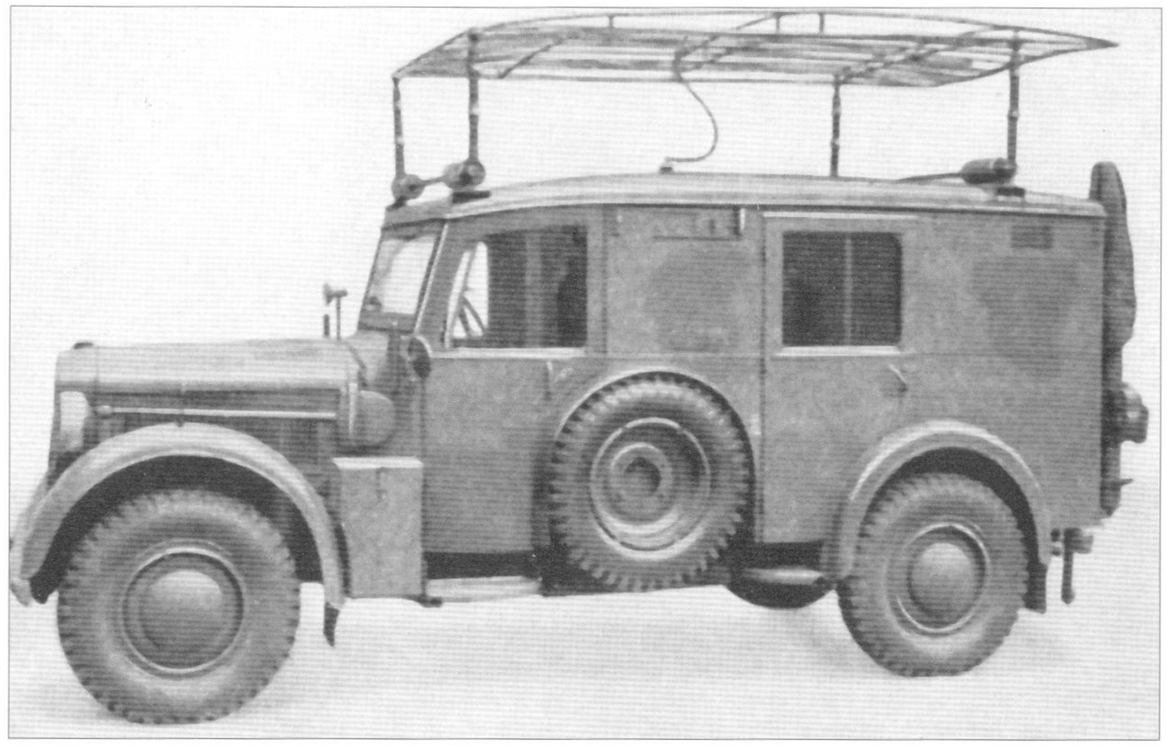


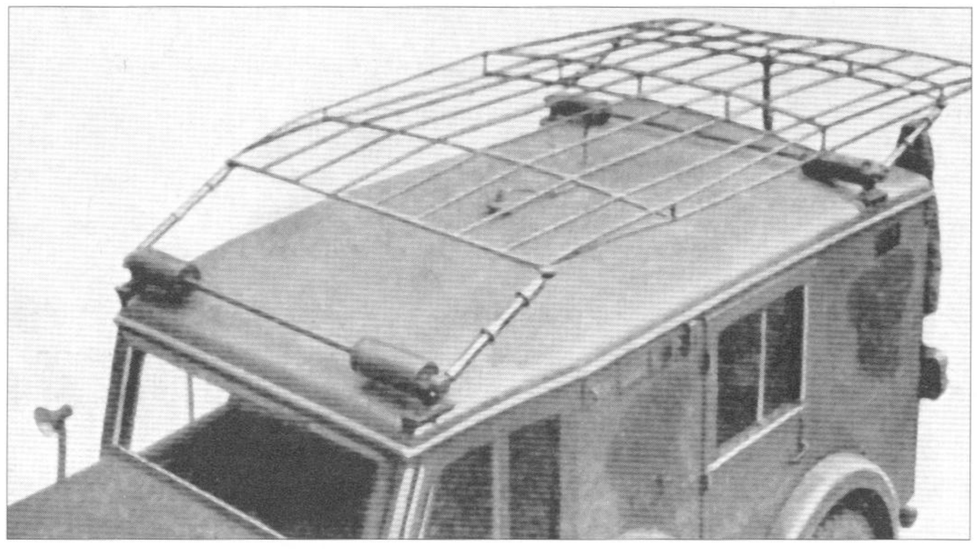
Small cars carried various kinds of radio and telephone equipment, receivers, transmitters, homing devices, equipment for building of phone lines etc.
Horch 901 was one of the most-often-utilised types for the job. The luggage space contained a box-like compartment with a lighting set, spare accumulators, anode batteries, telephone set, winches with guy cables, grounding rods, antenna poles, writing utensils and of course the full field kit.

Funkkraftwagen Kfz. 15 for higher level staff officer was fitted with a Torn.E.b. receiver, whose frequency range enabled to receive also the MW public broadcast stations.
A special trunk contained accessories-telephone sets, anode batteries, charging aggregate and sundry other things.
For these purposes various Mercedes and/or Horch 830 R, Horch 830 BL cars were modified (pictures opposite).

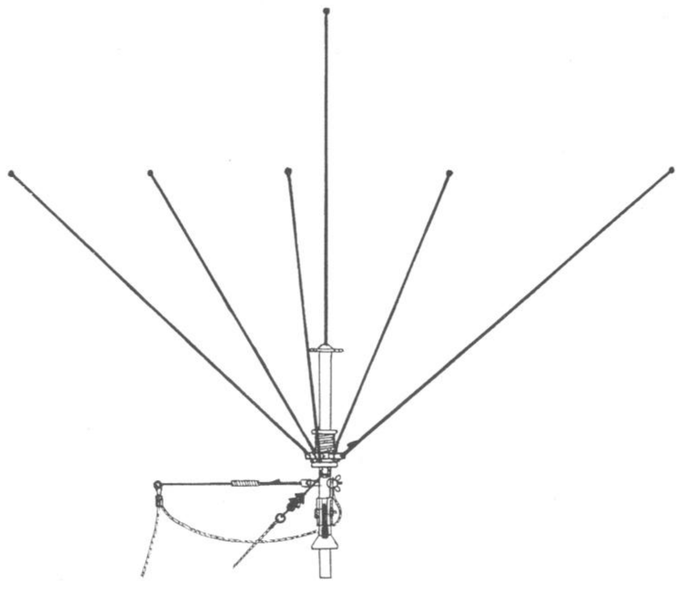
Kfz.17

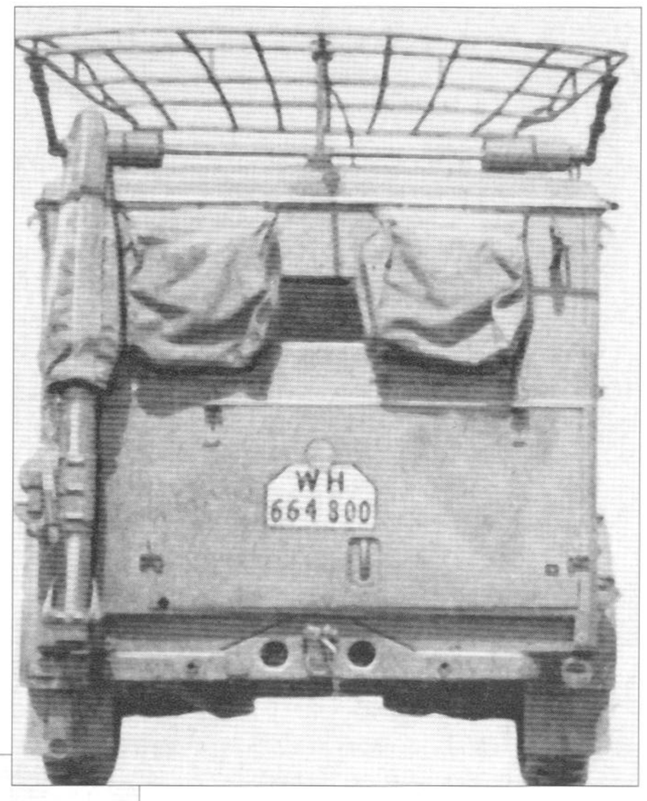


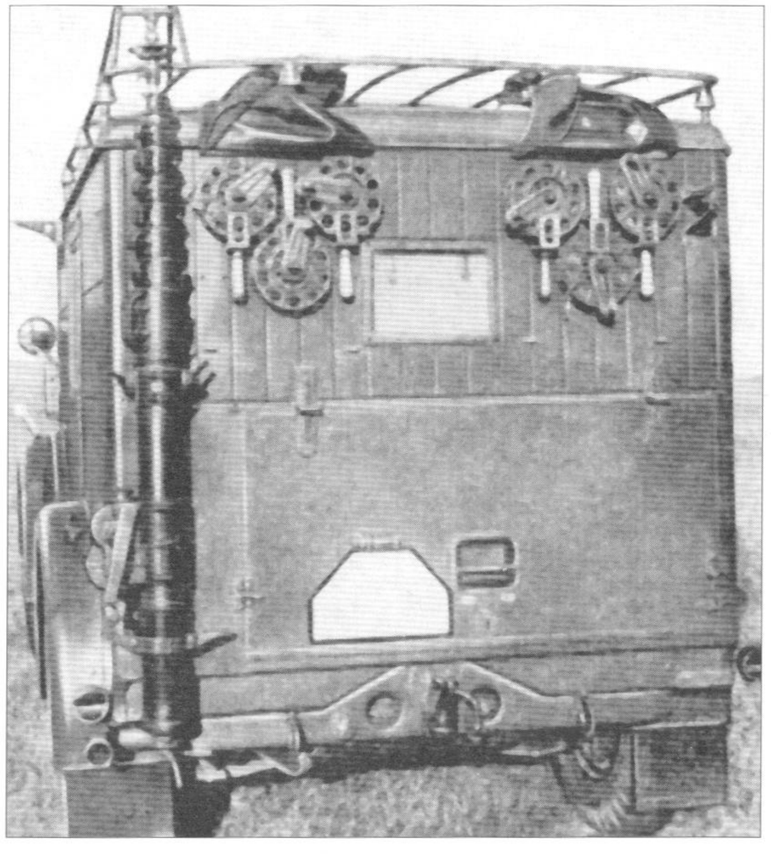


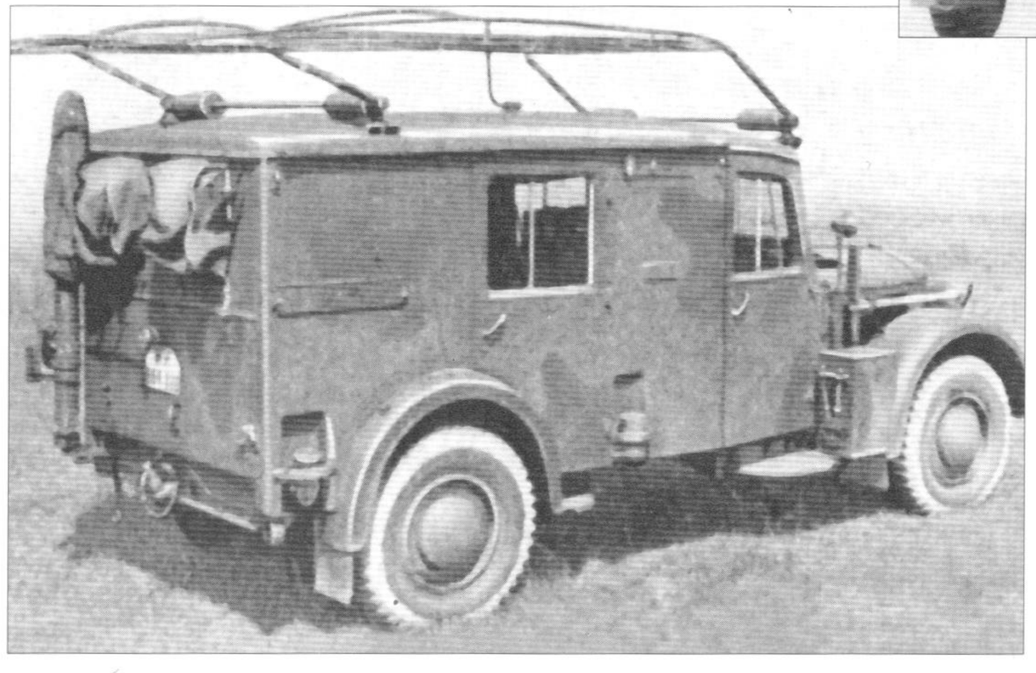


Below detail of star-shaped antenna.

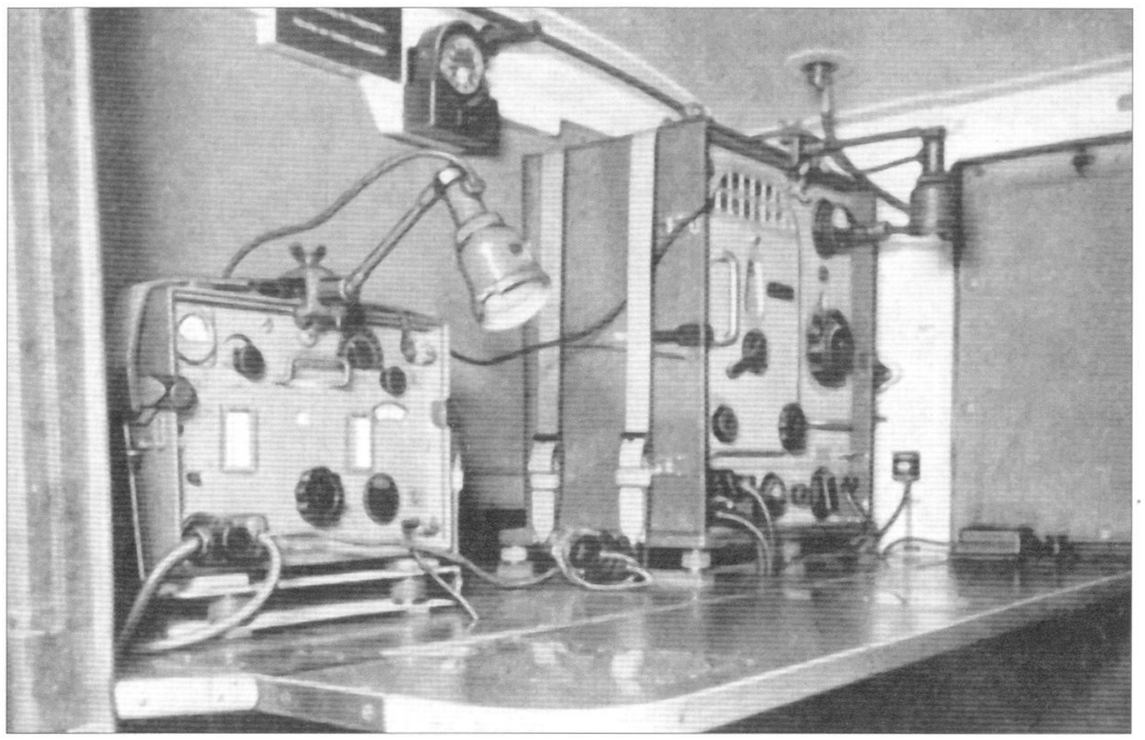


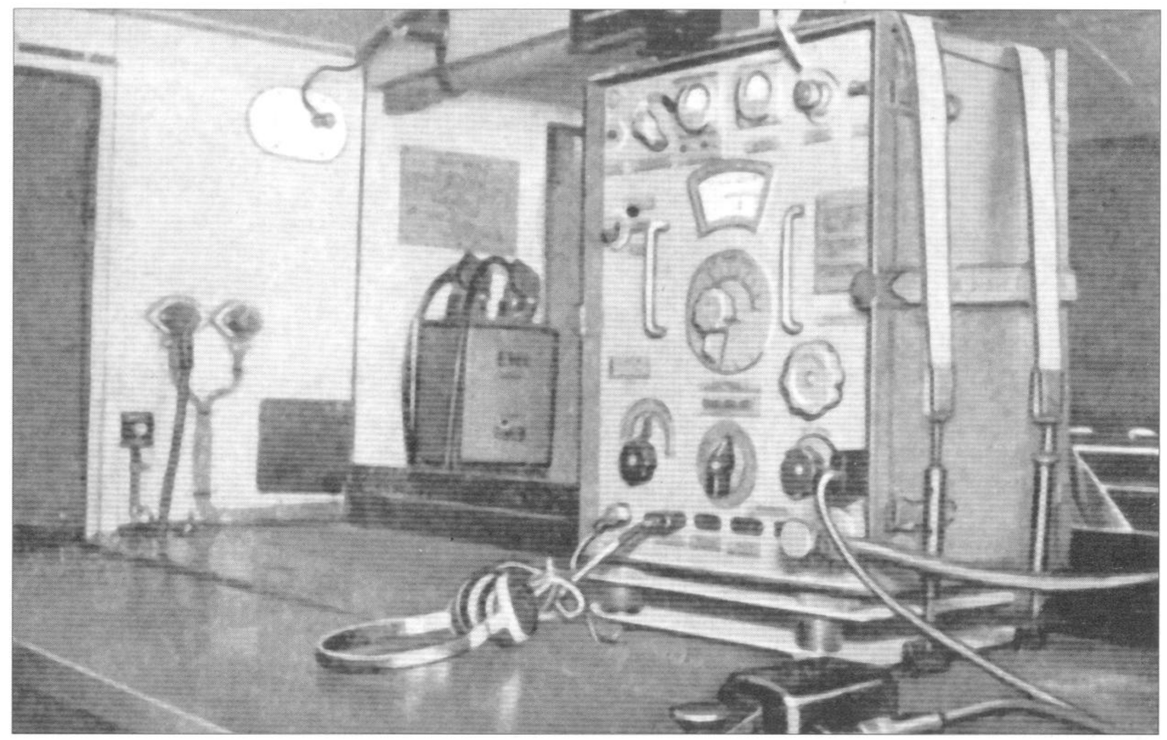






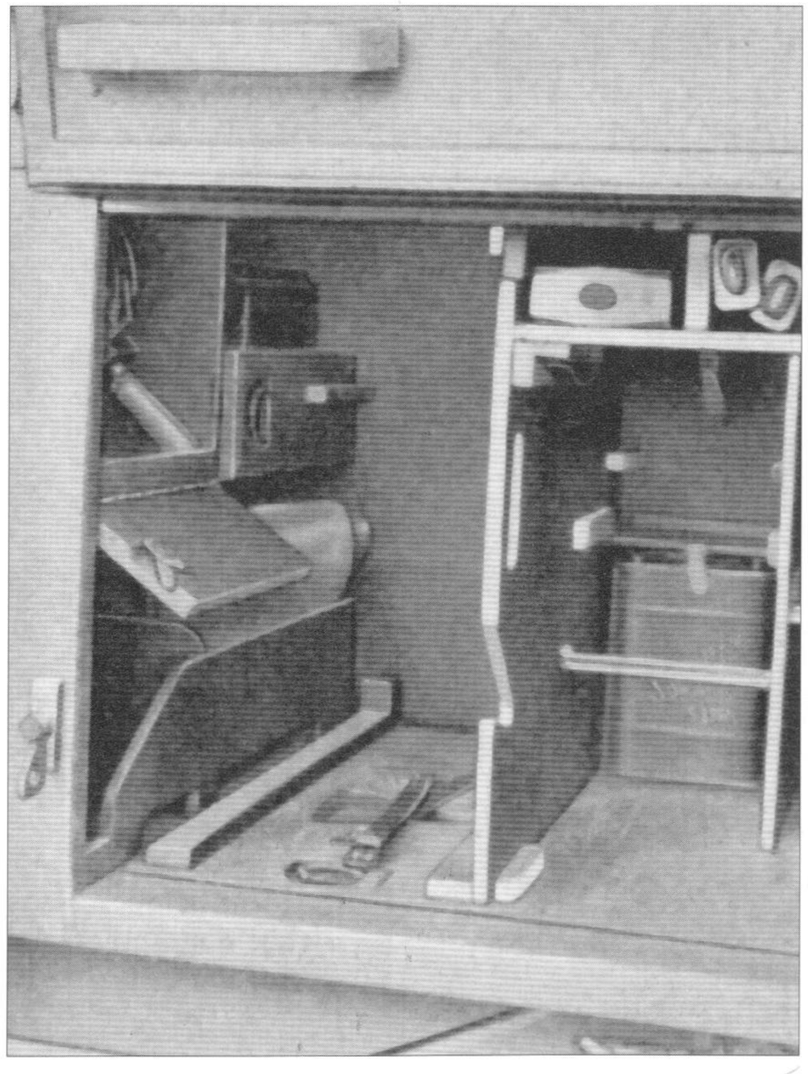
Small radio cars were (as in this case of Horch 901) fitted with telescopic antenna masts called Magirus, which were 8m tall once fully deployed. There was a star-shaped antenna on a ceramic insulator. For communication on the move a height adjustable roof antenna was used.

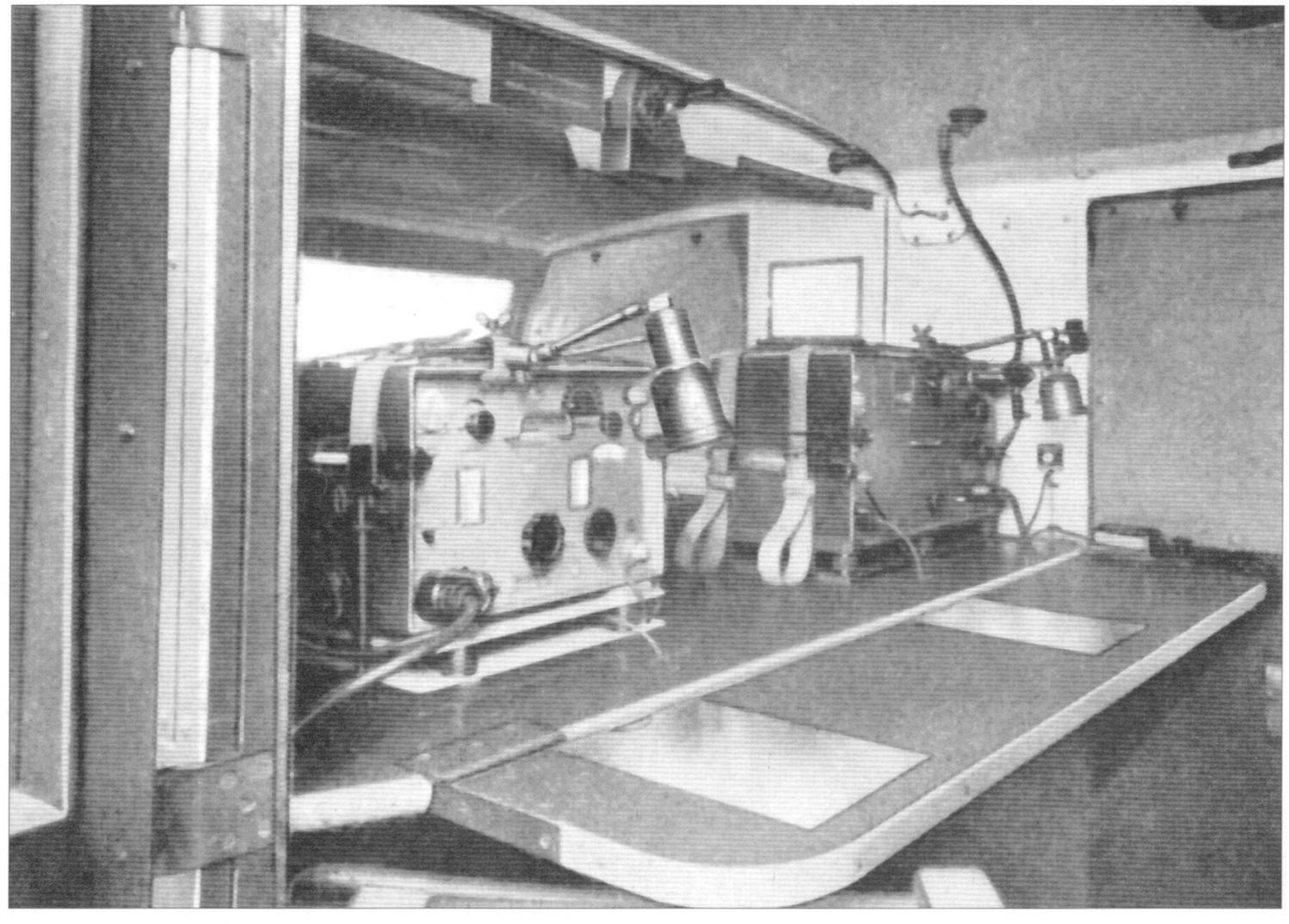




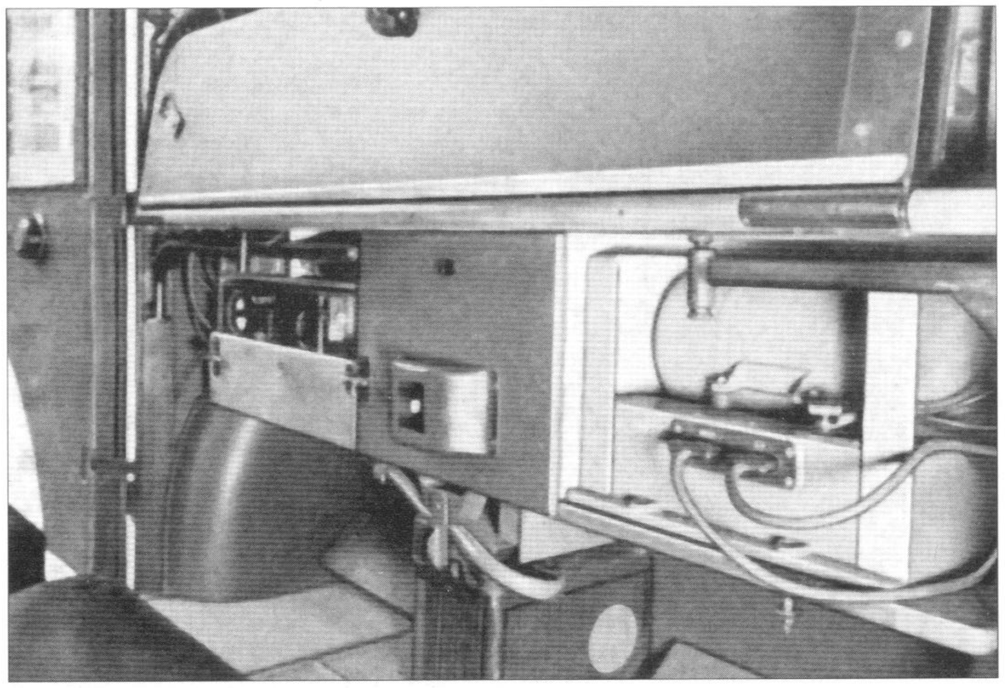
Fu 11 radio set. Unified Torn.E.b. receiver and 100 W.S. transmitter. Radio van provided for a communication of divisional headquarters with higher levels of command.
Bottom an accessory box accessible from outside of the Kfz. 17 van.

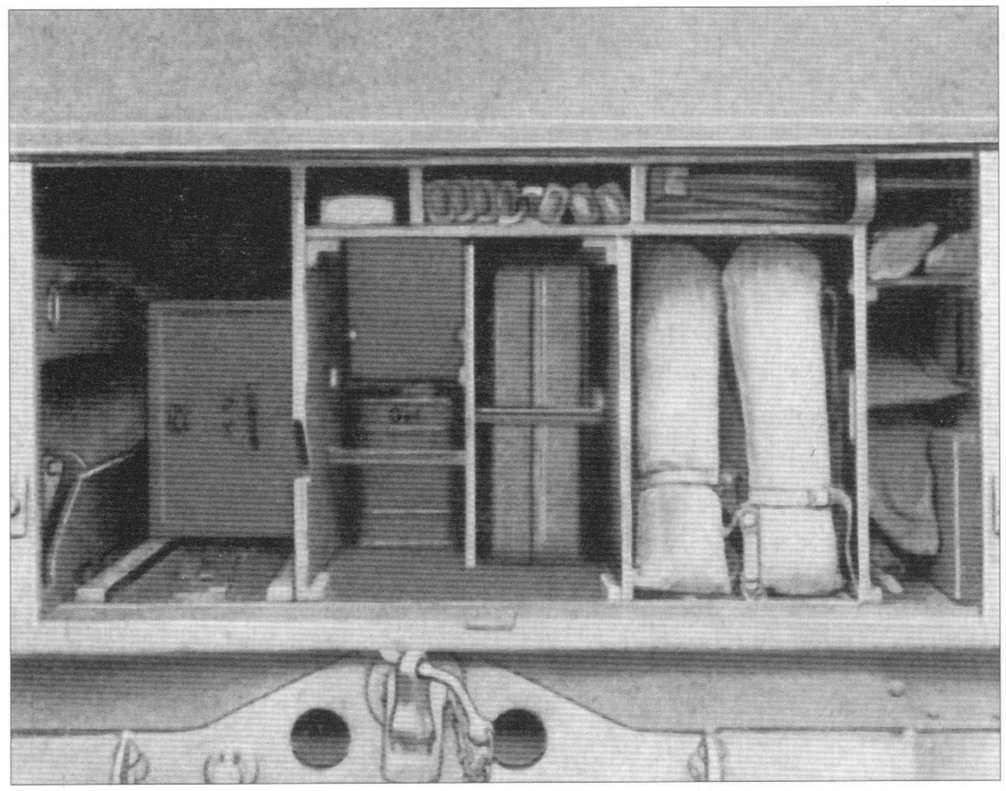
Receiver/transmitter type 15 W.S.E.b operated in 3.0 - 7.5 MHz short-wave range. It was designated Fu 19 and provided communication between tank units and a co-operation with Luftwaffe at staff level. Utilising wireless telegraphy it was possible to communicate at a distance of 30 km, with telephony at a distance of 25 km depending of frequency used. Transmitter output was 15 watts. Bottom a Fu 20 set with a 30 W.S.a transmitter and a Torn.E.b. receiver.

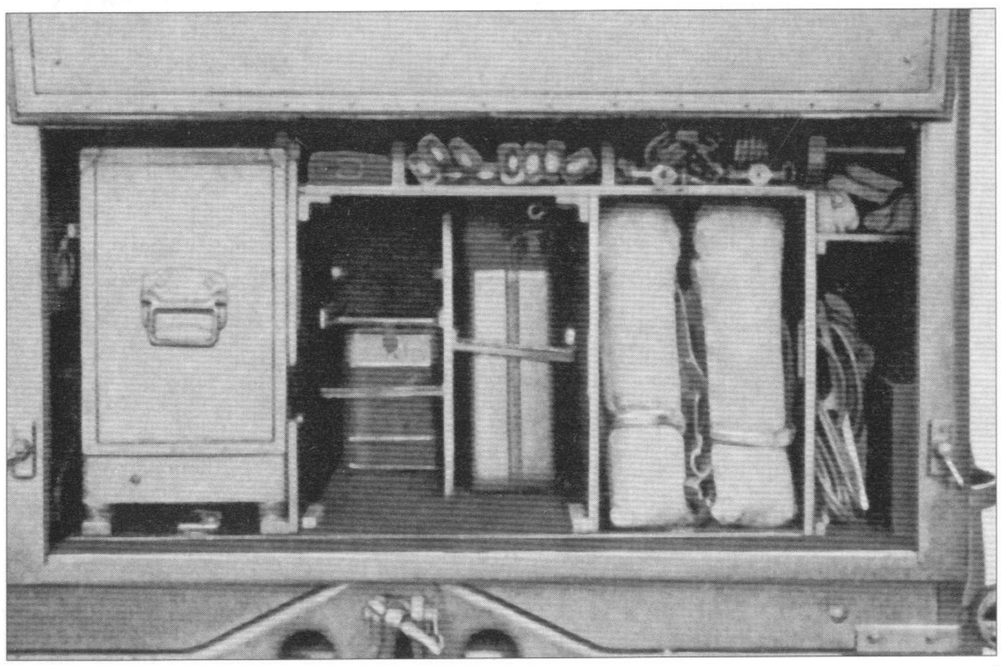




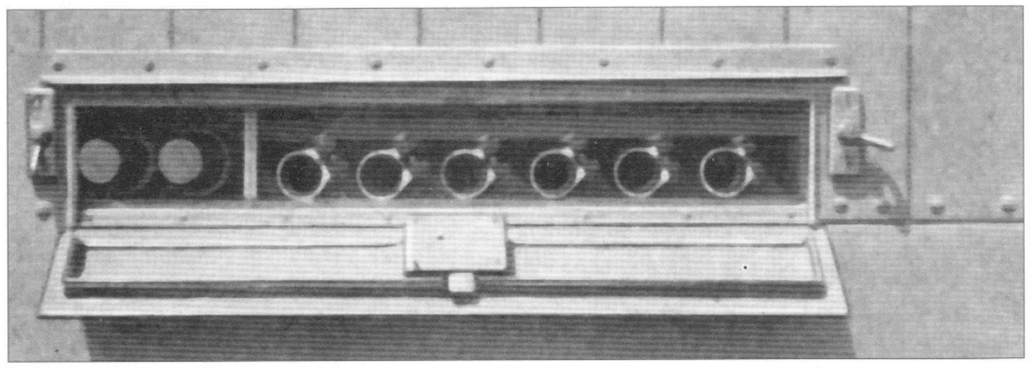
Kfz. 17/1

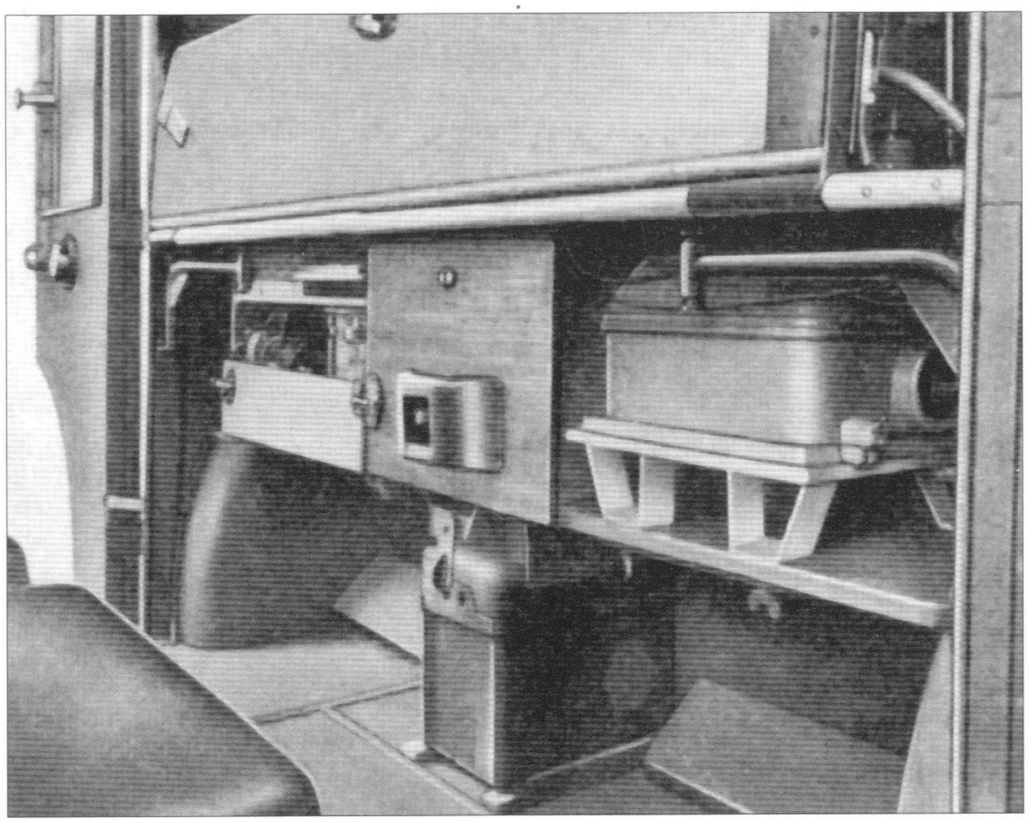


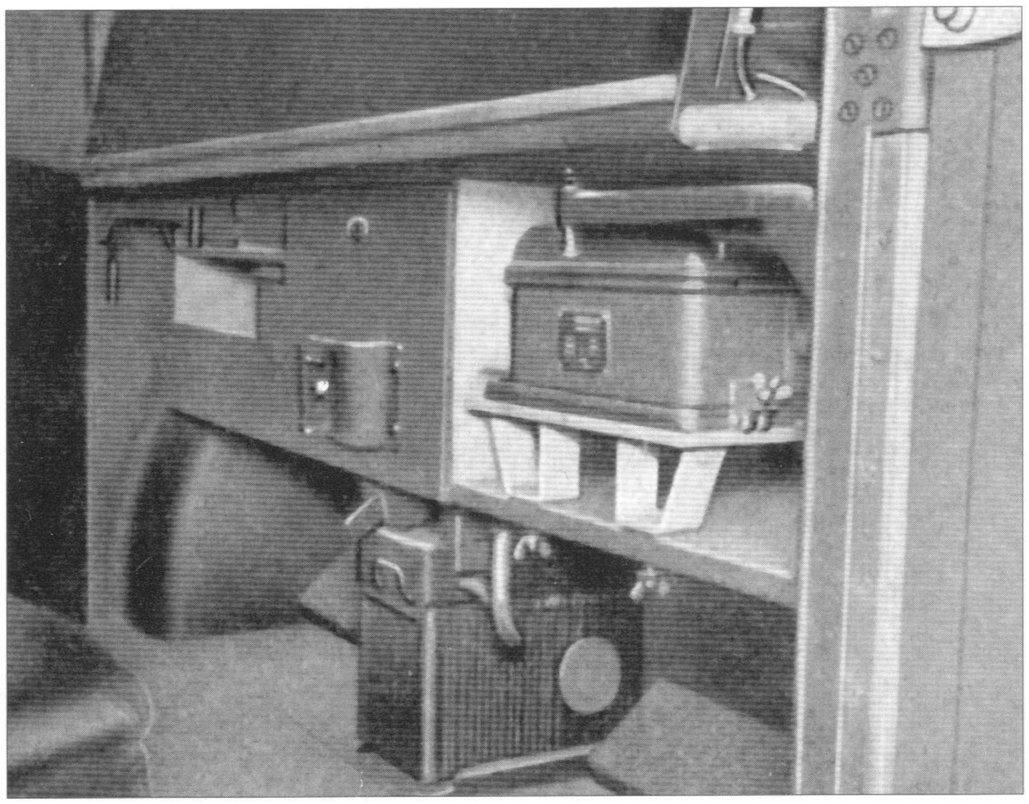




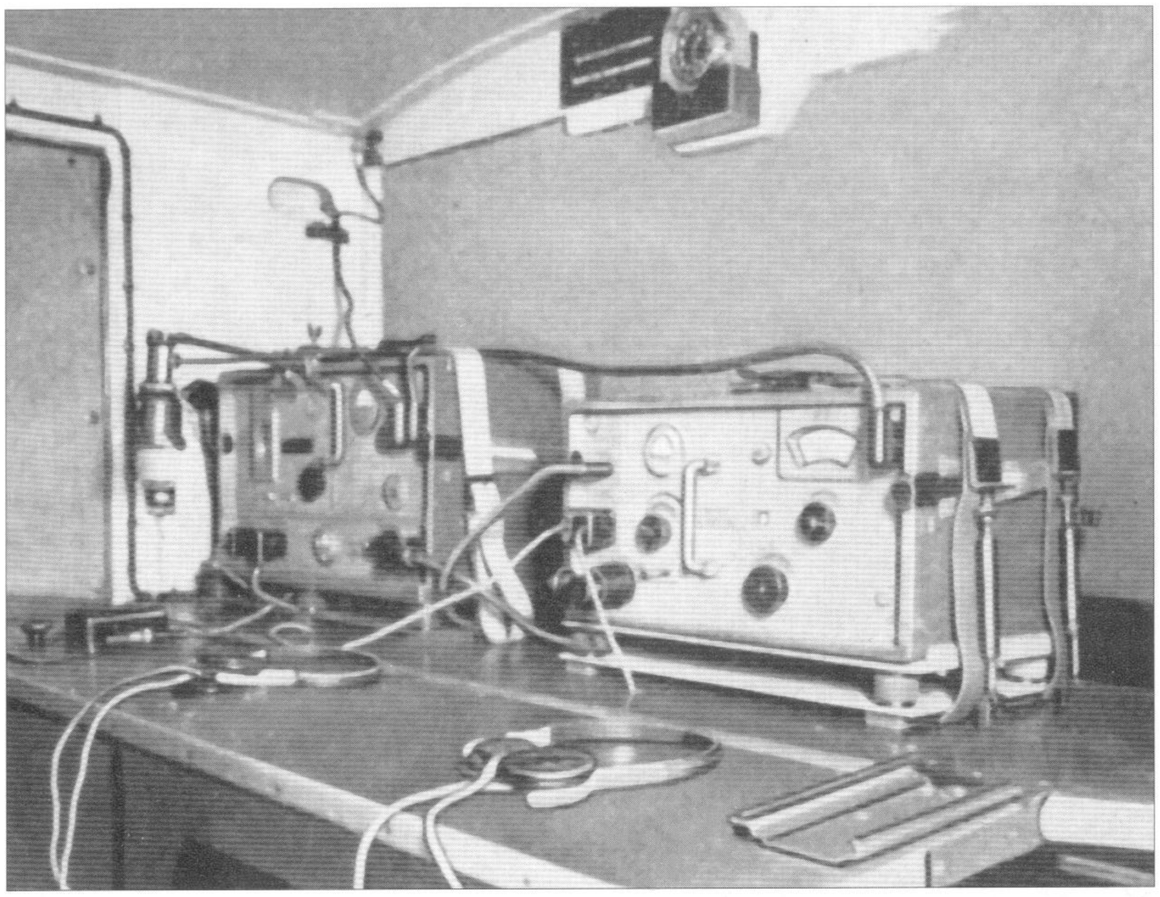
Left, from top 1) internal space of the Kfz. 17, inverter for the 100 W.S. transmiter; 2) rear storage space of the Kfz. 17; 3) rear storage space of the Kfz. 17/1.

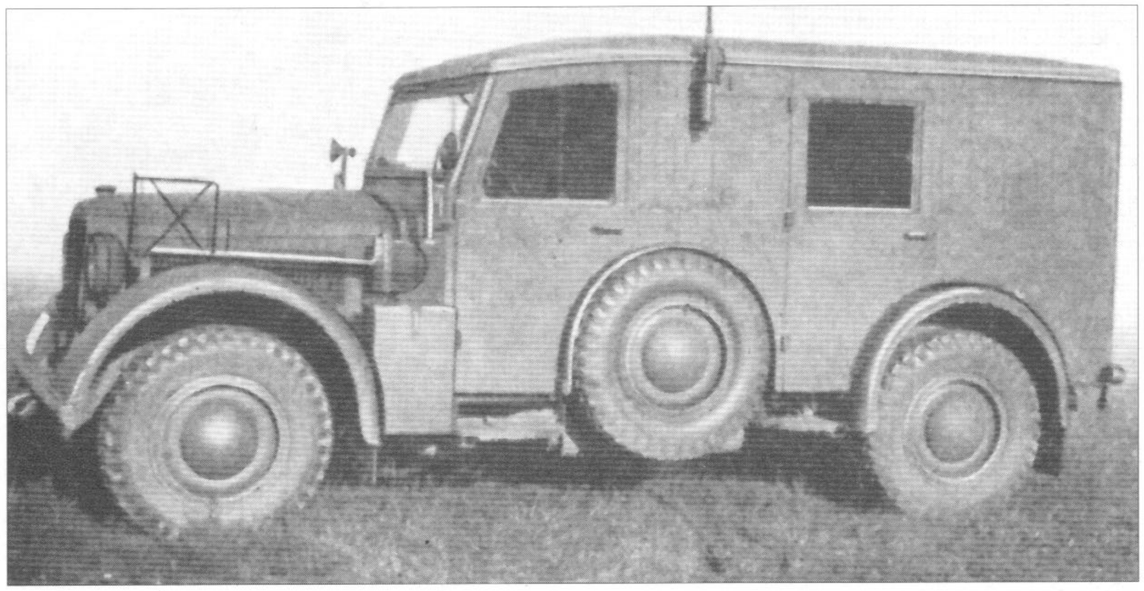


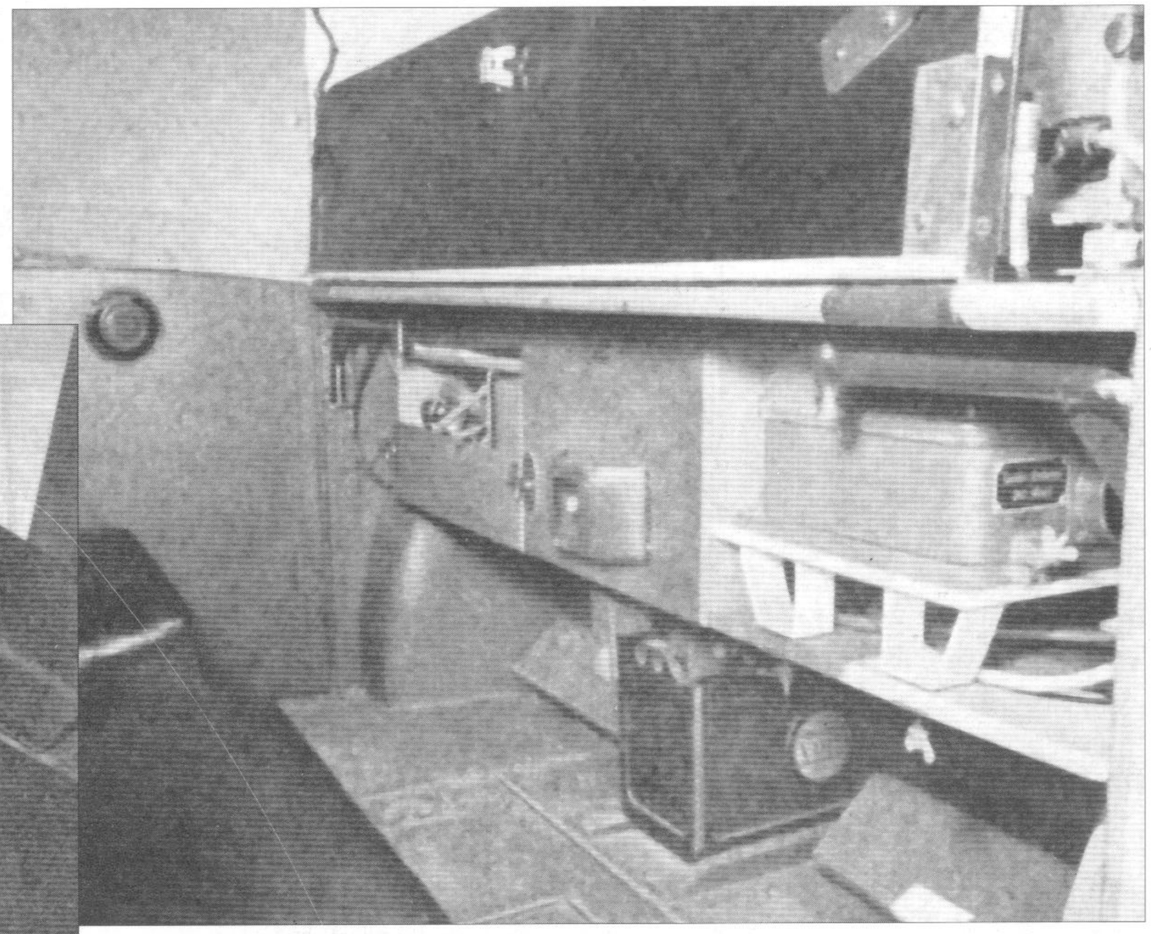




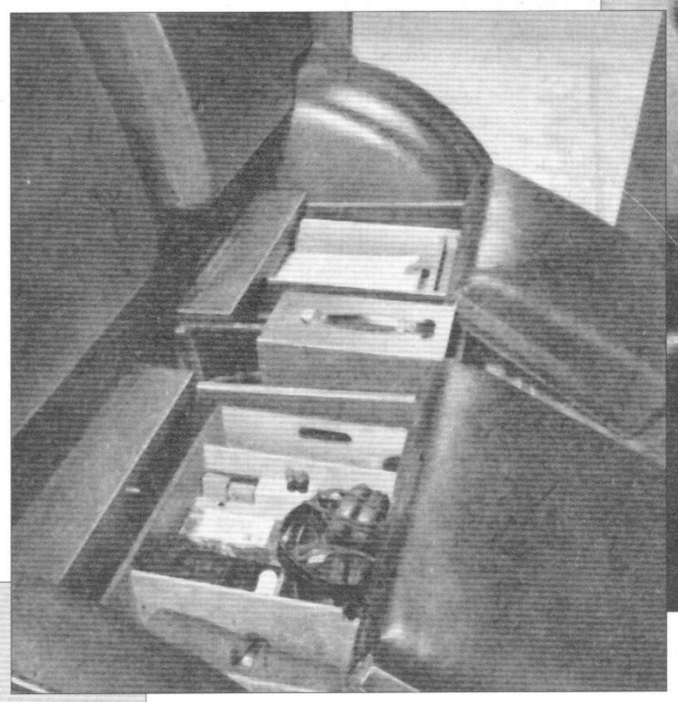
Right, from top 1) side space with antenna masts; 2) internal storage room of a Kfz. 17/1 with 20 W.S.d transmitter inverter; 3) internal storage room of Kfz. 17 with 30 W.S.a transmitter inverter.

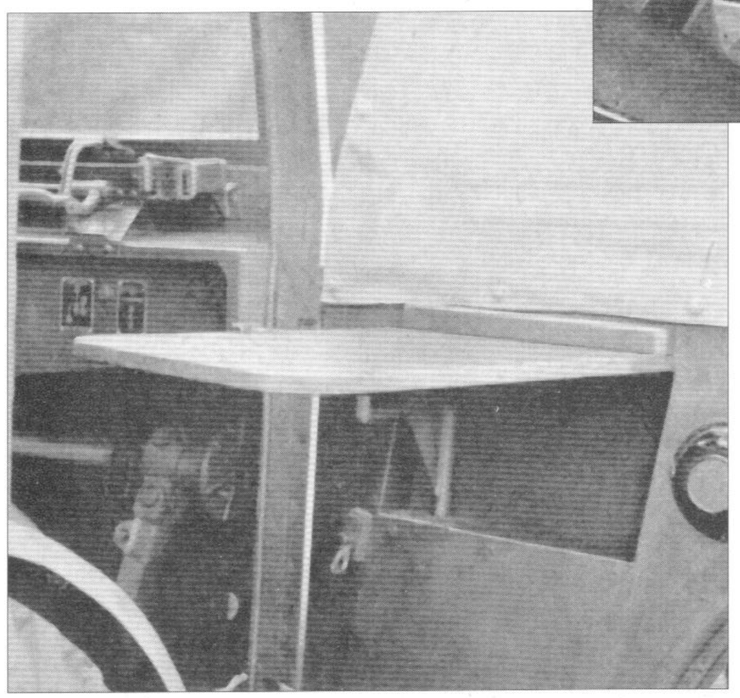




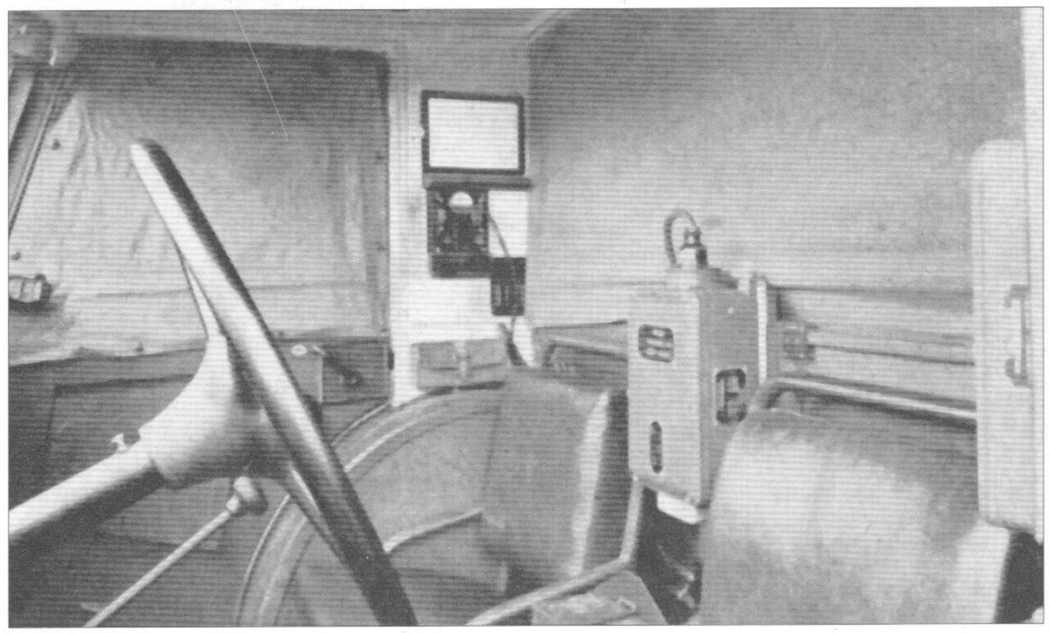


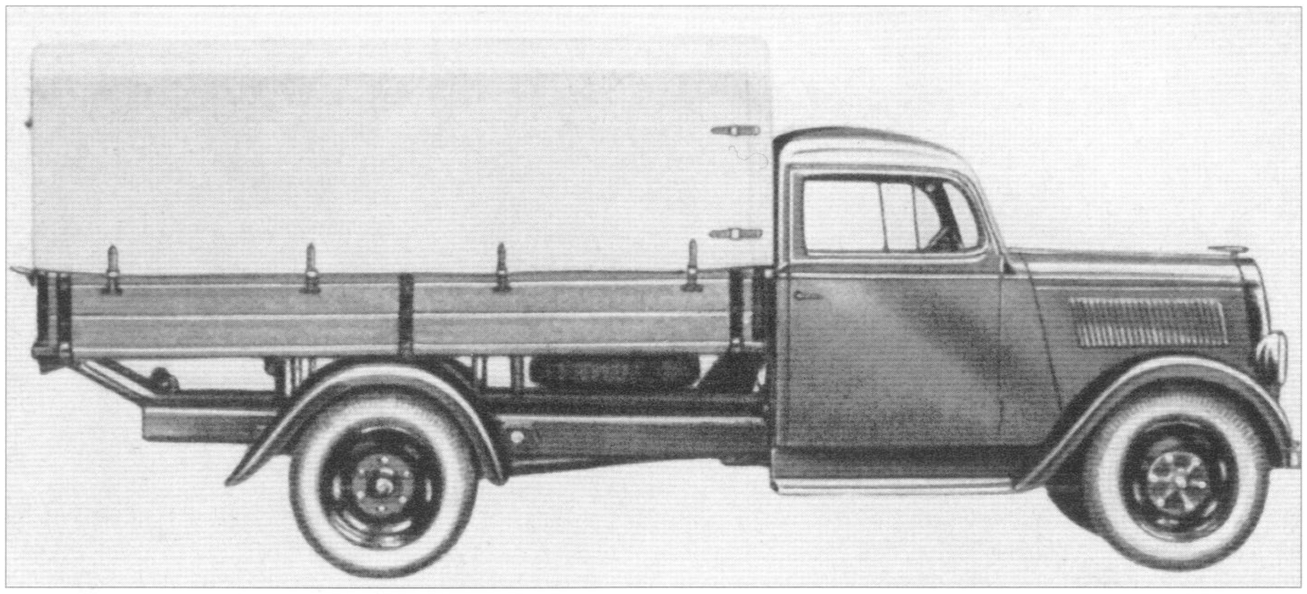
Above operator's room of the Kfz. 17/1; the Fu 7 radio set on the table enables to co-ordinate ground to air (Wehrmacht with Luftwaffe) operations.
The transmitter is 20 W.S.d and receiver Ukw.E.d1, frequency range 42.1 - 47.8 MHz.
Right top - a complete view of a radio van

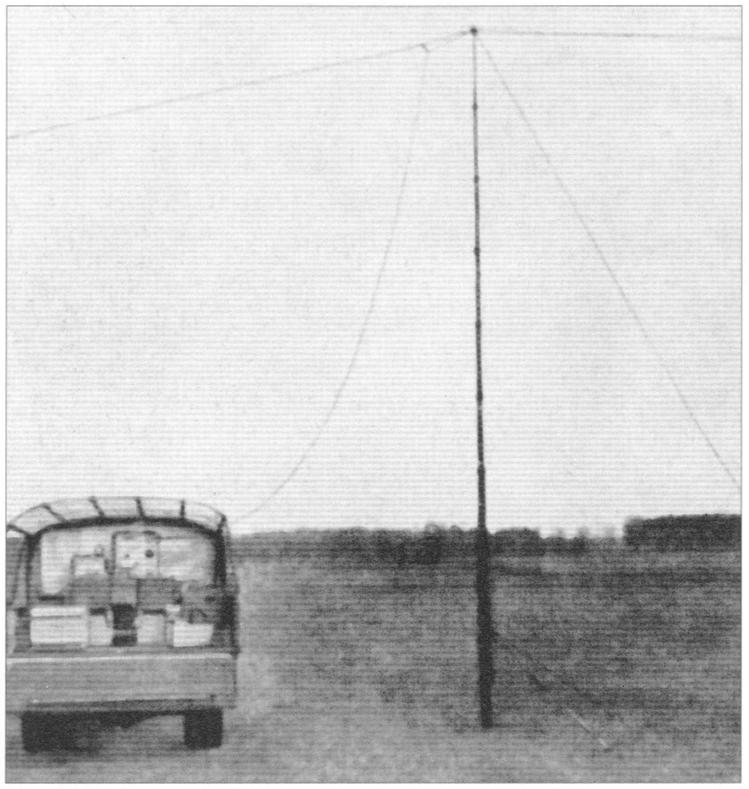




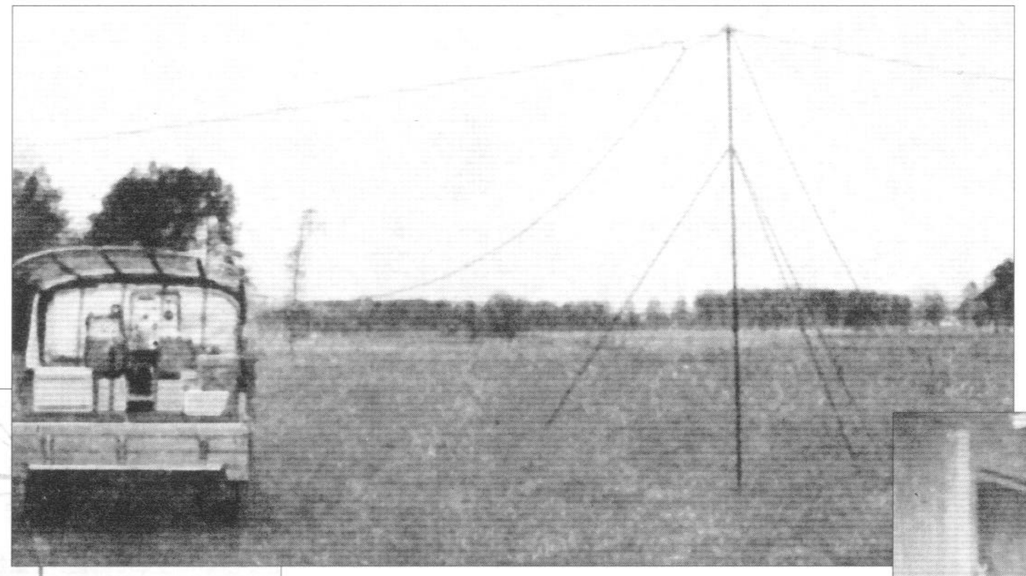
Top the storage compartments under the seats in the vehicle's van superstructure.
Bottom left a folding table in the front doors on the vehicle commander's side (right) Right middle photo - a folding table (folded) in the radio-operator's room



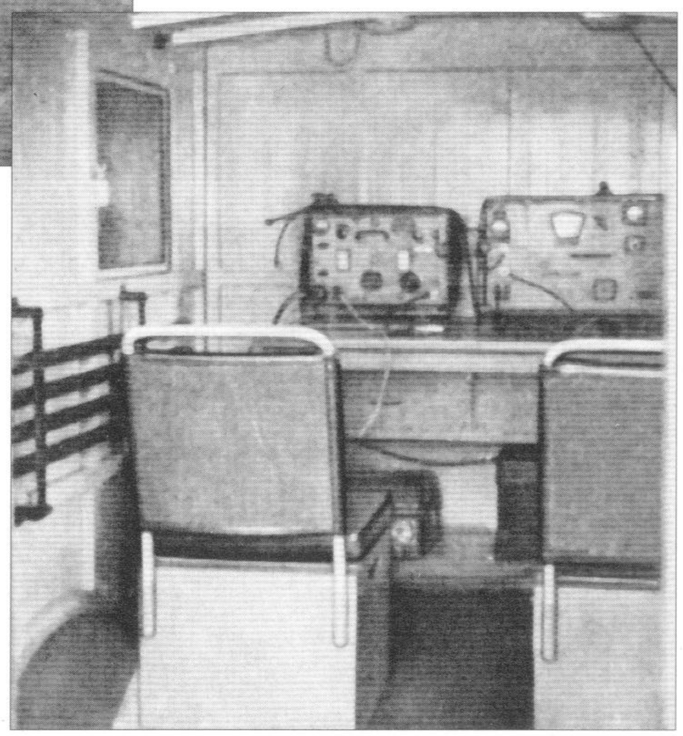




Kfz 17 improvised radio vehicles



The most often used machines for that work were the 1,5 tonne Opel, Mercedes, Steyr etc. lorries. Flanking photos show various versions of Opel Blitz 1500. Among the advantages of these vehicles was the possibility to move all equipment or a field station including the furniture. *See pages 18 -19.*



Nachrichtentrupps.

Fernsprech- und Funktrupps:

- kleiner Fernsprechtrupp
- mittlerer Fernsprechtrupp
- großer Fernsprechtrupp
- kleiner Funktrupp (mot)
- mittlerer Funktrupp (mot)
- großer Funktrupp (mot)
- Tornisterfunktrupp
- Fernsprechbautrupp (mot)
- Blinkgerät
- Fernsprechbetriebstrupp (mot)

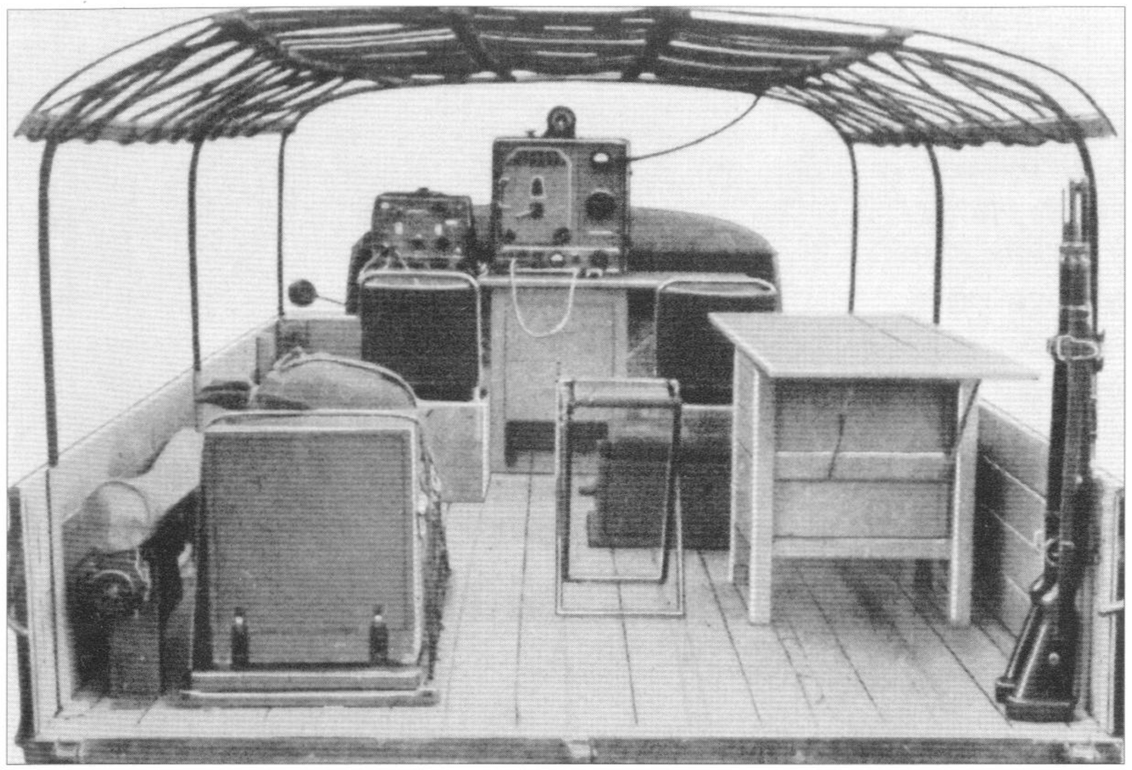
Sonstige Trupps:

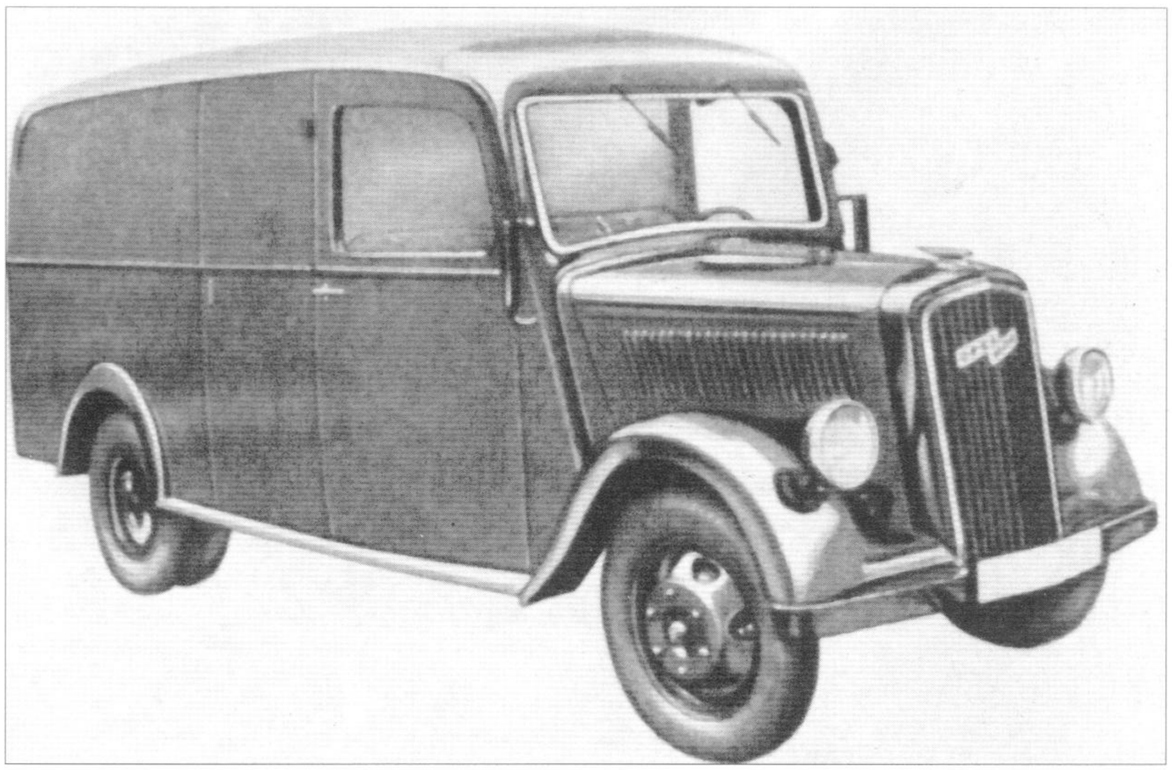
- Meldehundtrupp
- Vst. — Verstärkertrupp (mot)

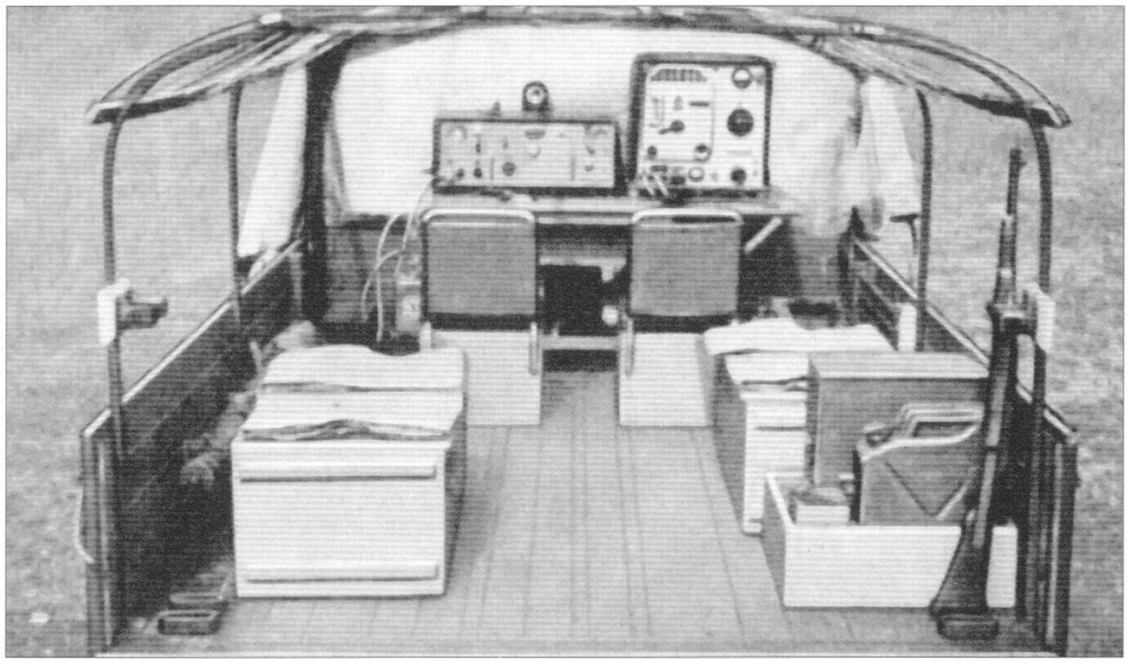
Nachrichtenwesen

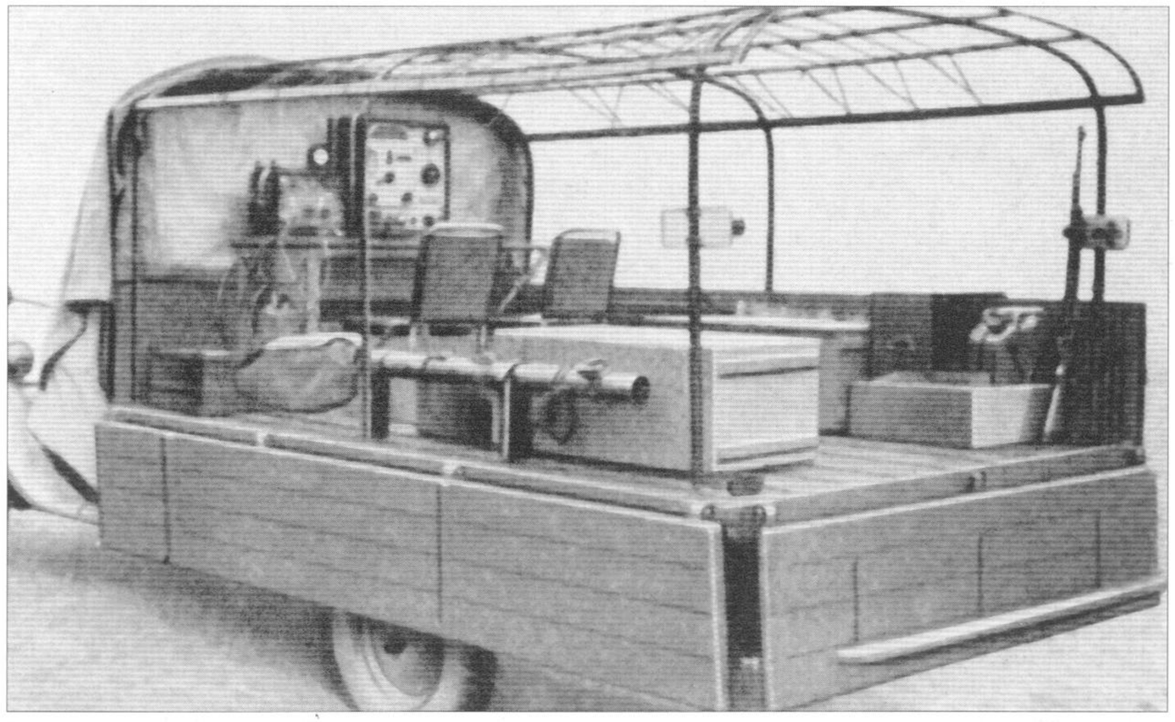
- Fernsprechstelle
- Fernsprechvermittlung
- Horchstelle
- Peilstelle
- feste Funkstelle
- Blinkverbindung
- Meldehundverbindung
- Feldkabeleinfachleitung
- Feldkabeldoppelleitung
- Funklinie
- feste Brieftaubenstelle
- M.S. St. — Meldesammelstelle

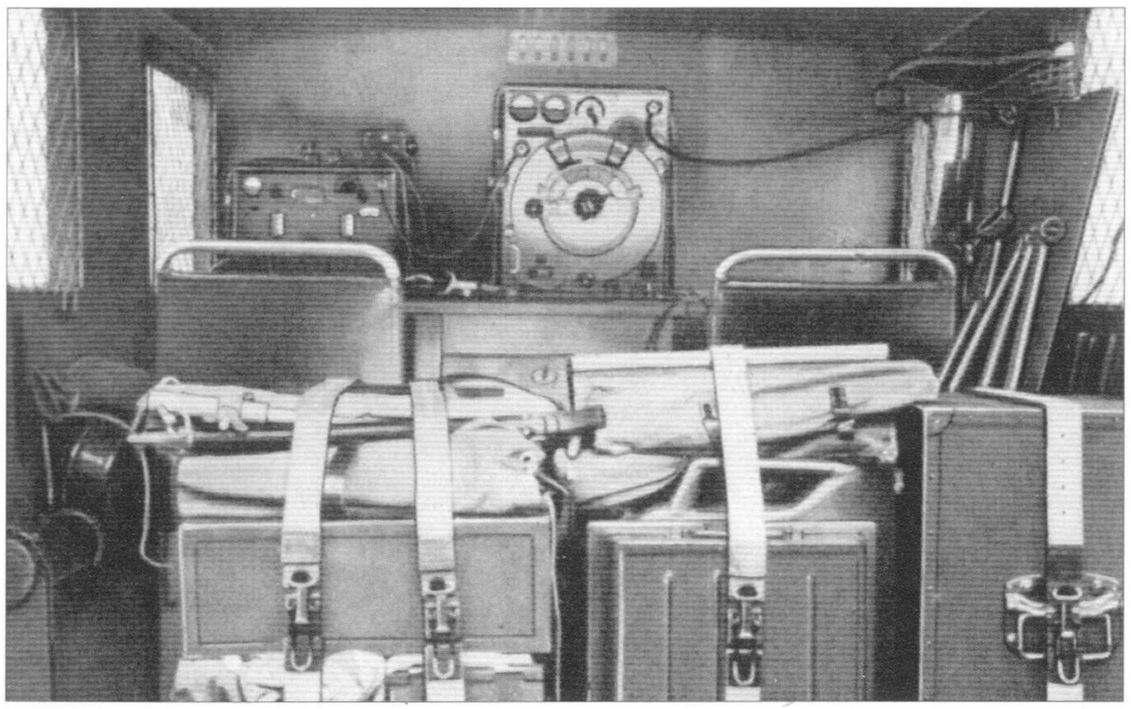
Top fender markings of communications corps, continuation from page 2.

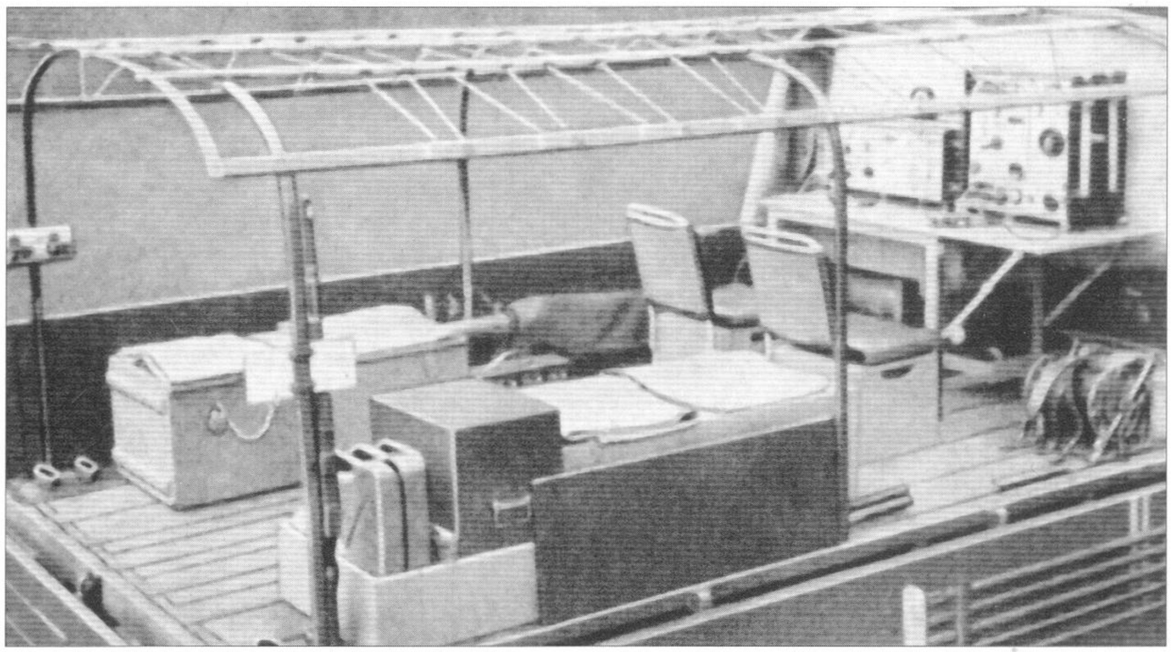


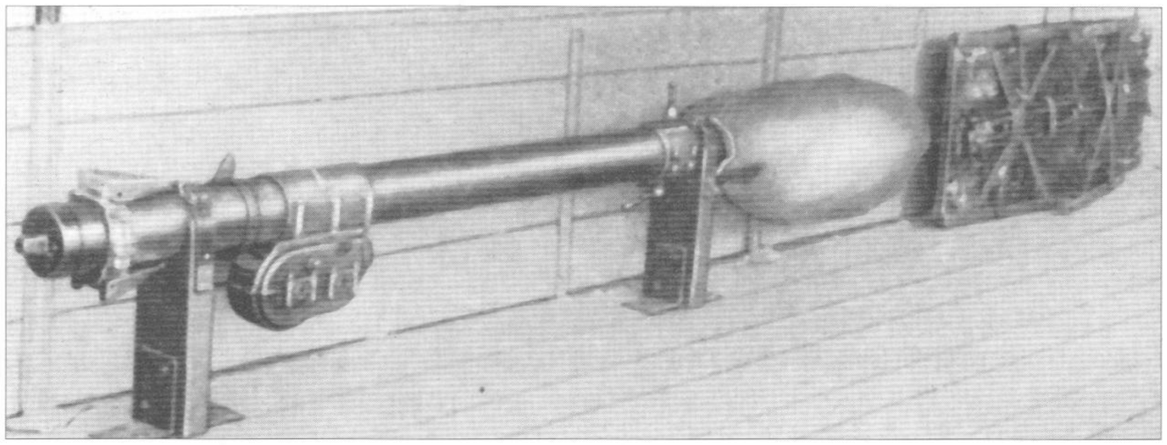


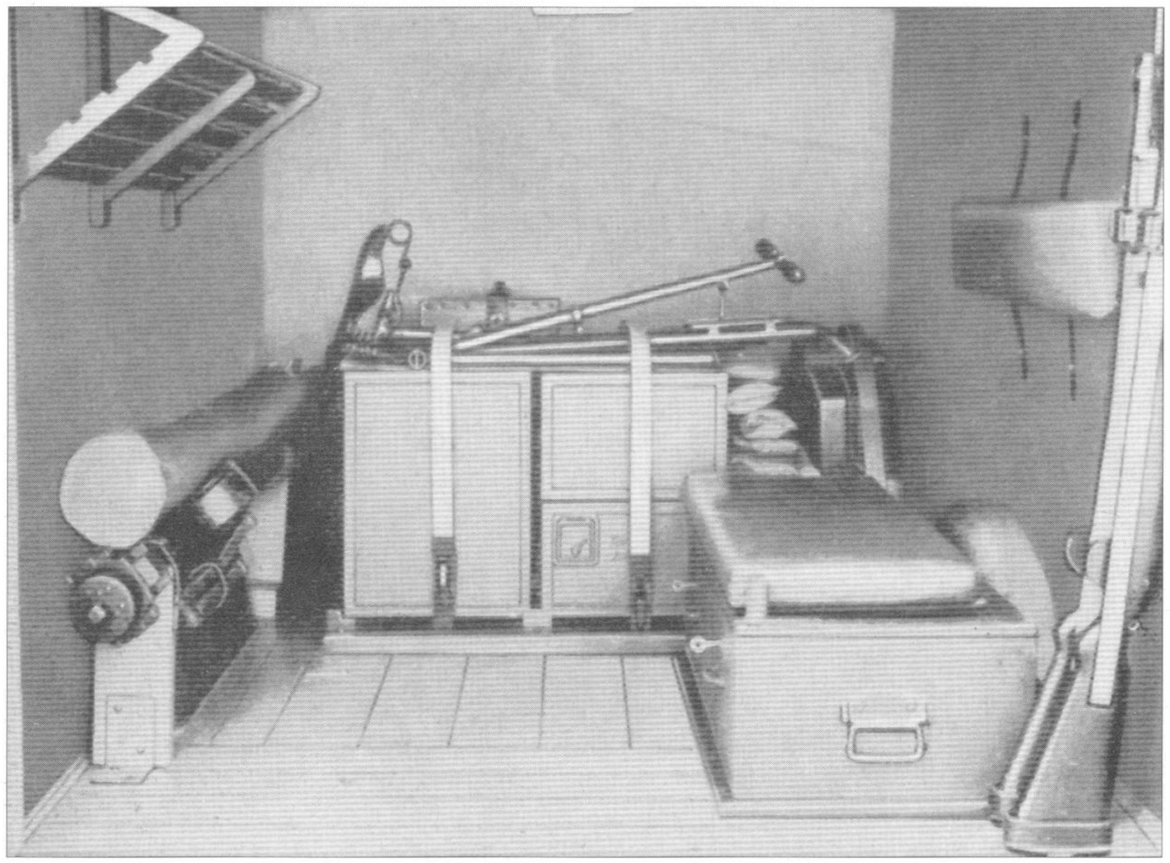




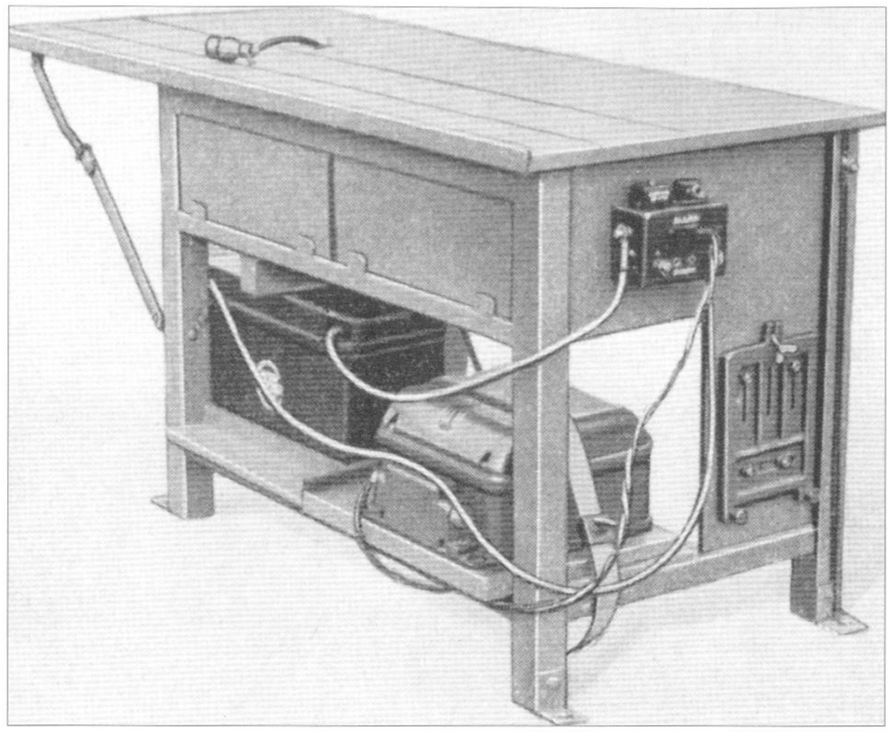


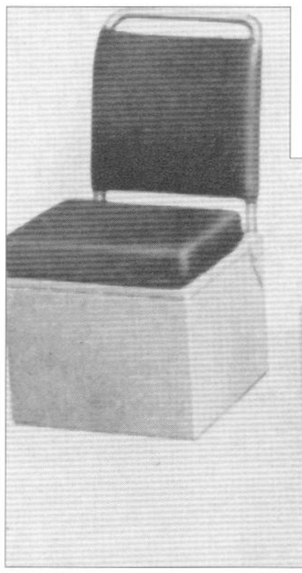




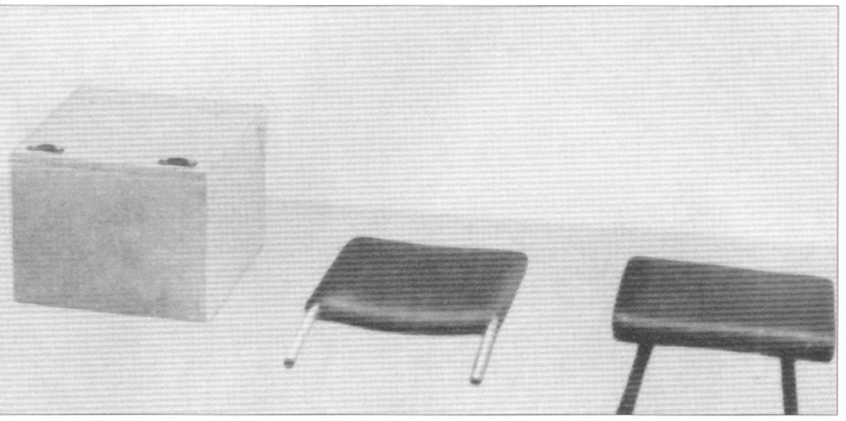


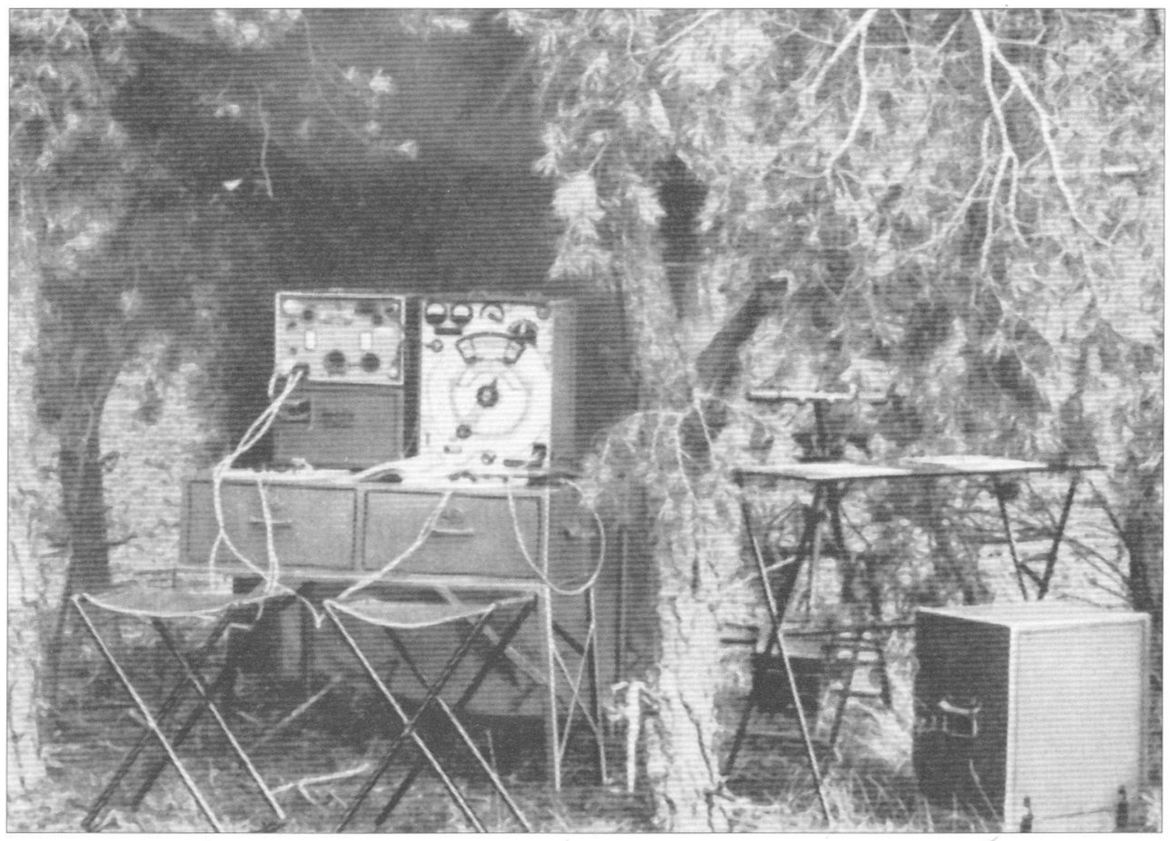
Internal equipment of Kfz. 17 improvised radio vans. Top left the stored pole antennae, in the middle a layout of the individual equipment inside the vehicle.

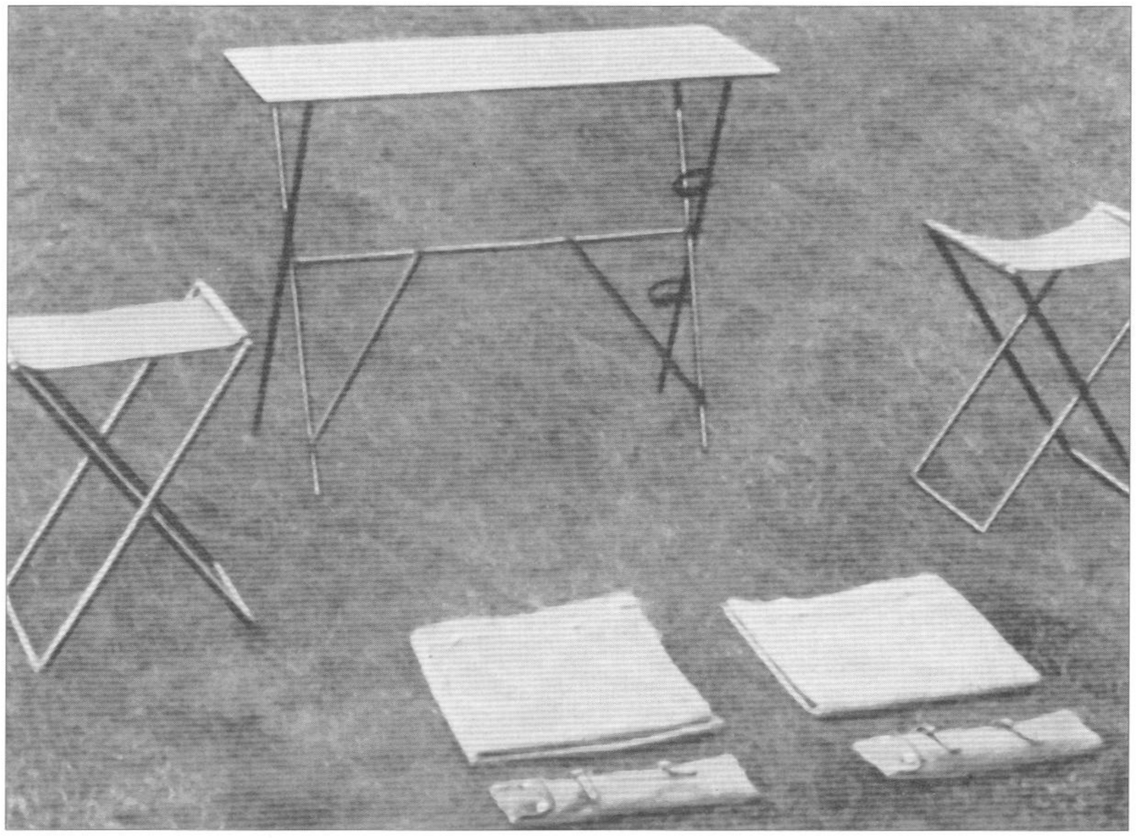


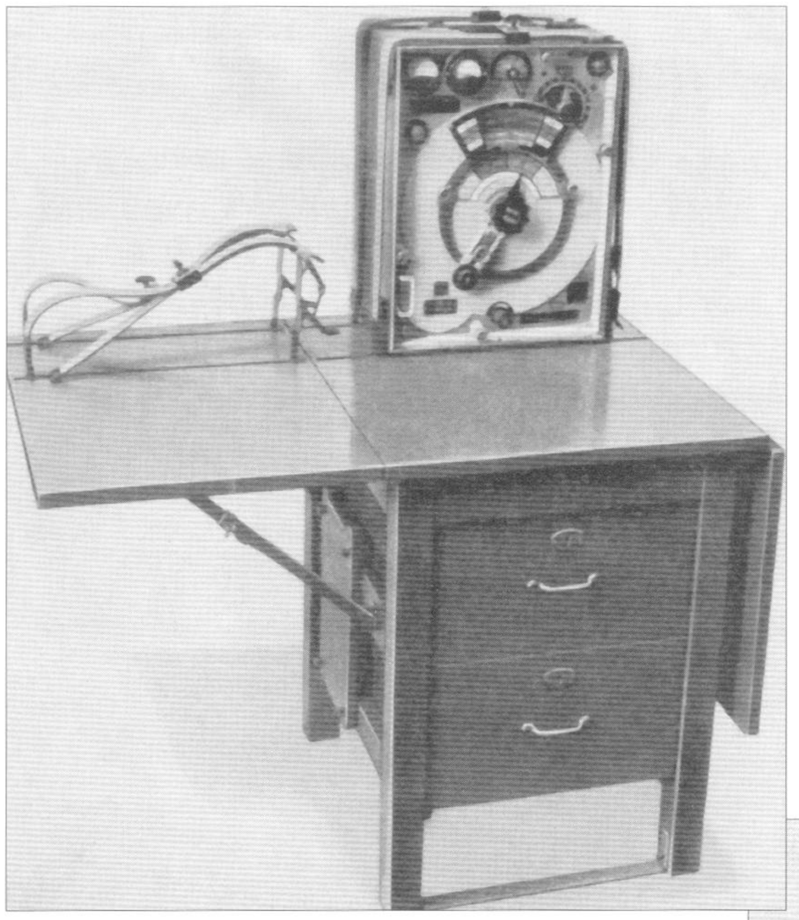


Bottom the field station of radio operators. Its individual parts are clearly visible on these two pages.

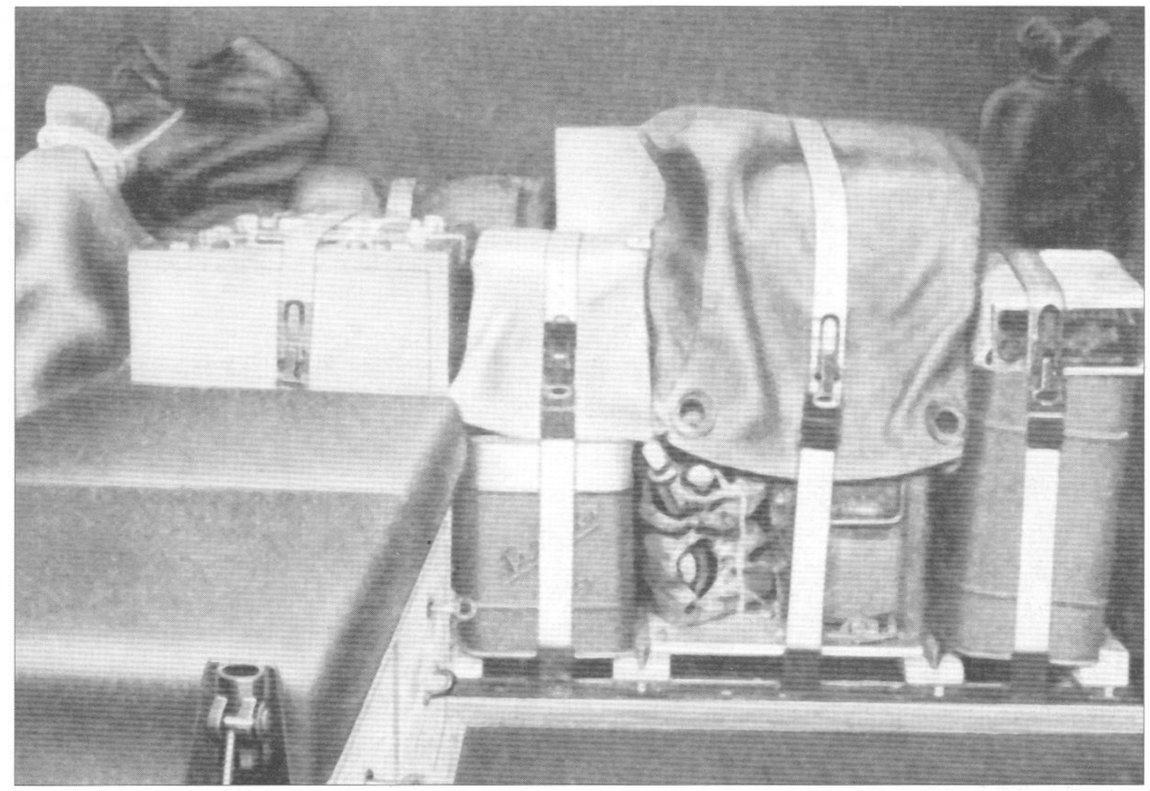


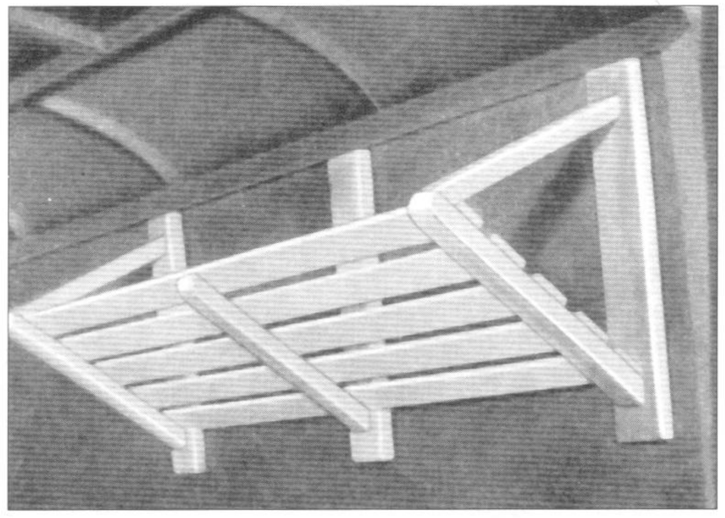


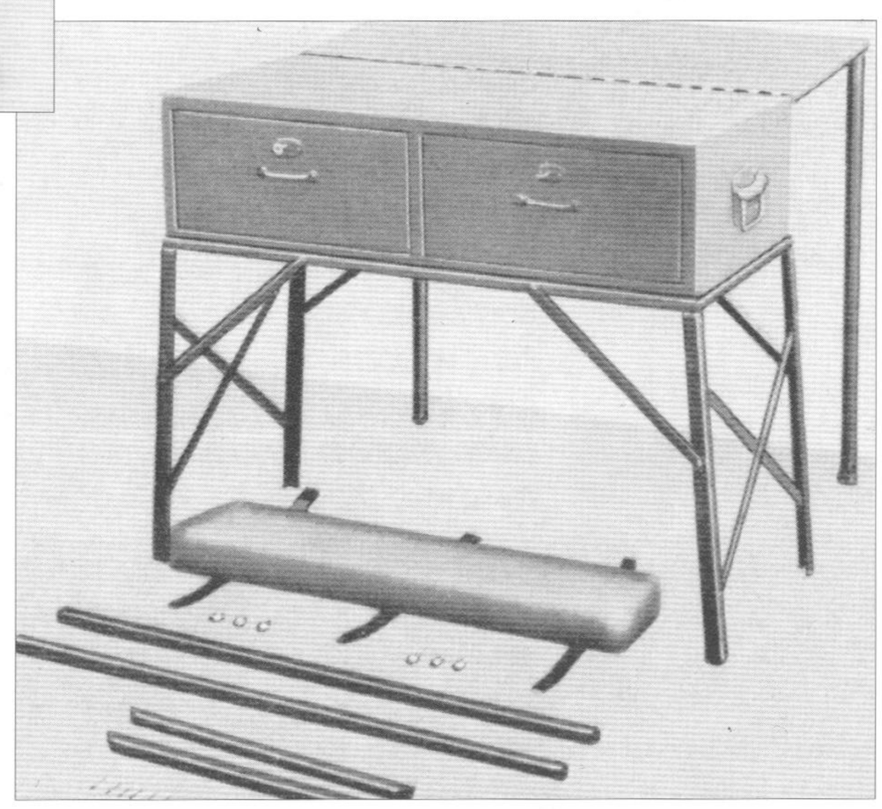


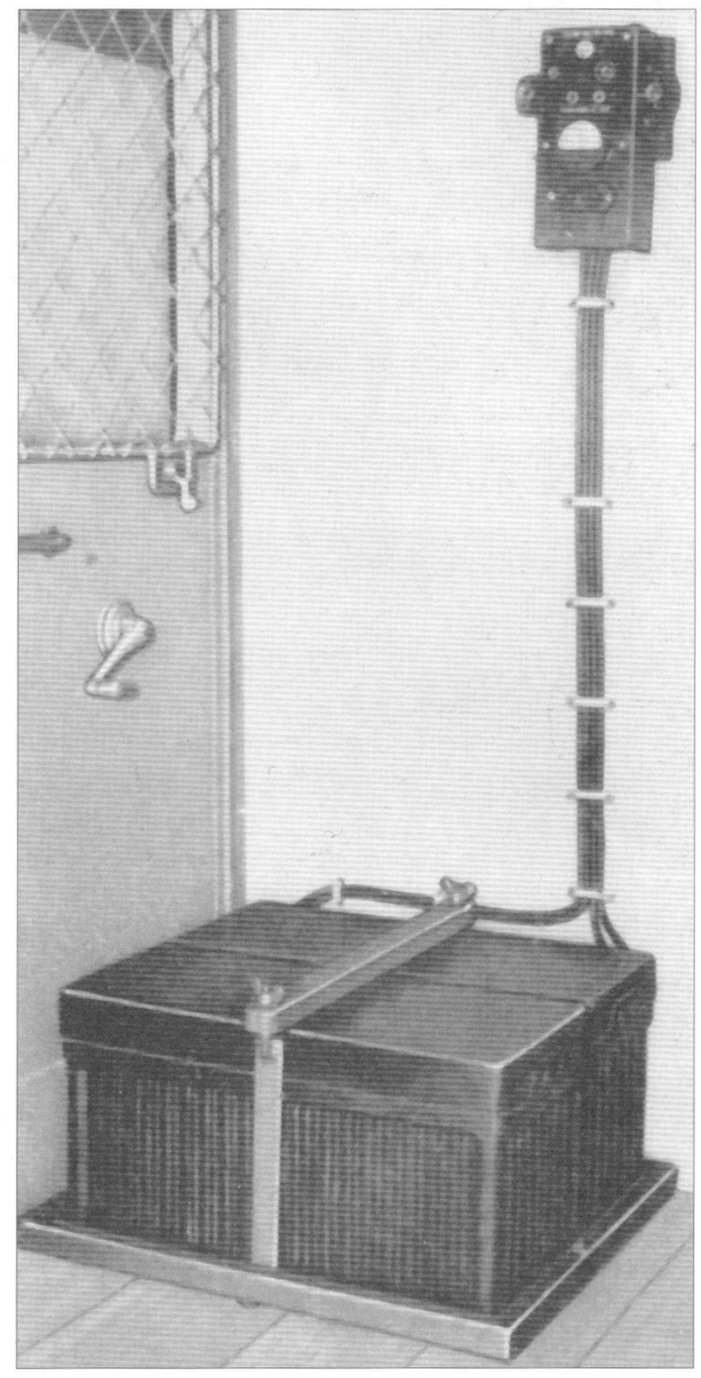


Left top a table for radios is placed. These versions still had the radios strapped to tables with webbing instead of rubber-block-mounted.

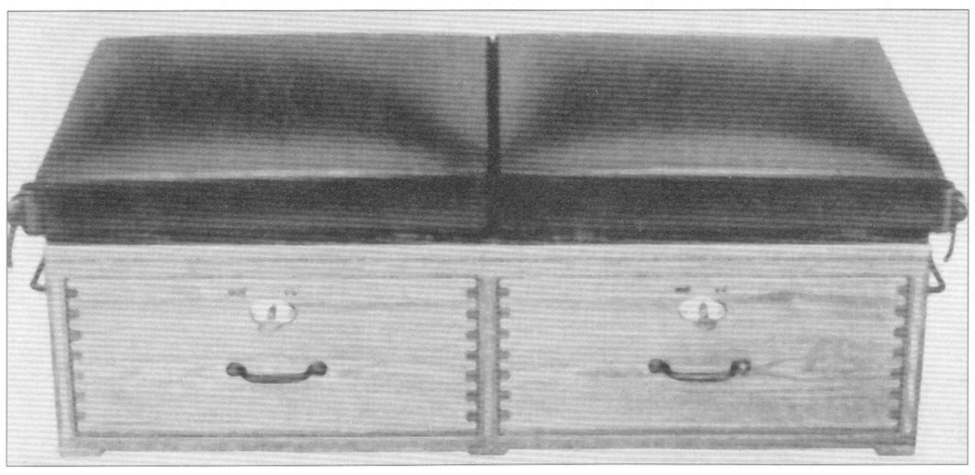


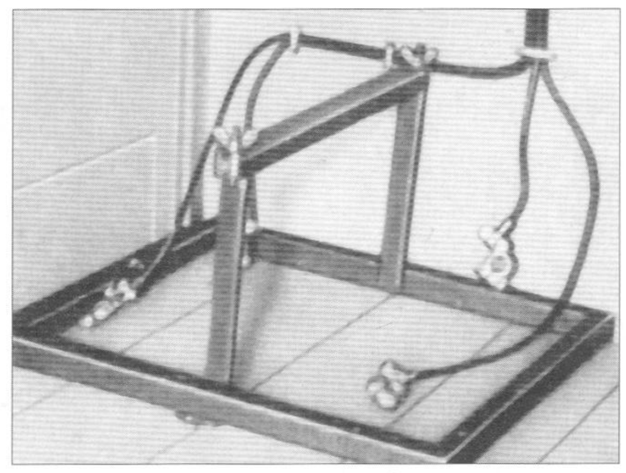


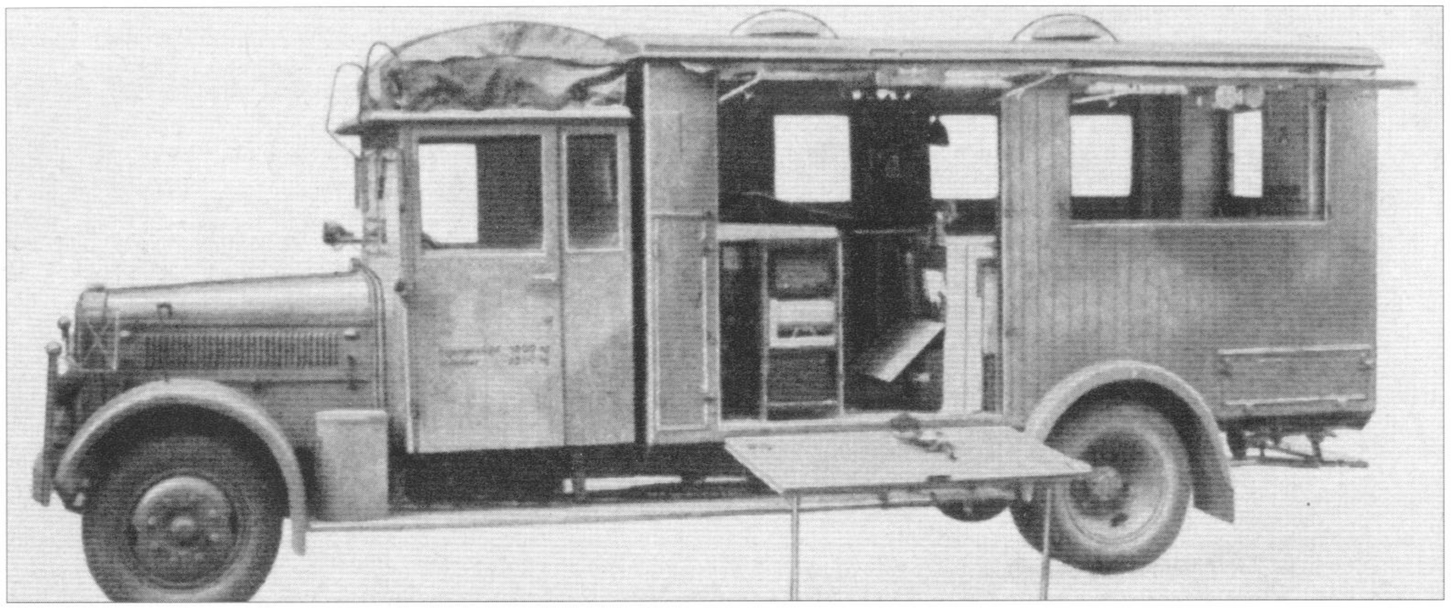




Bottom centre shows a frame holding the accumulator onto the vehicle floor, right with battery in place, left a detachable bench with storage space is shown.

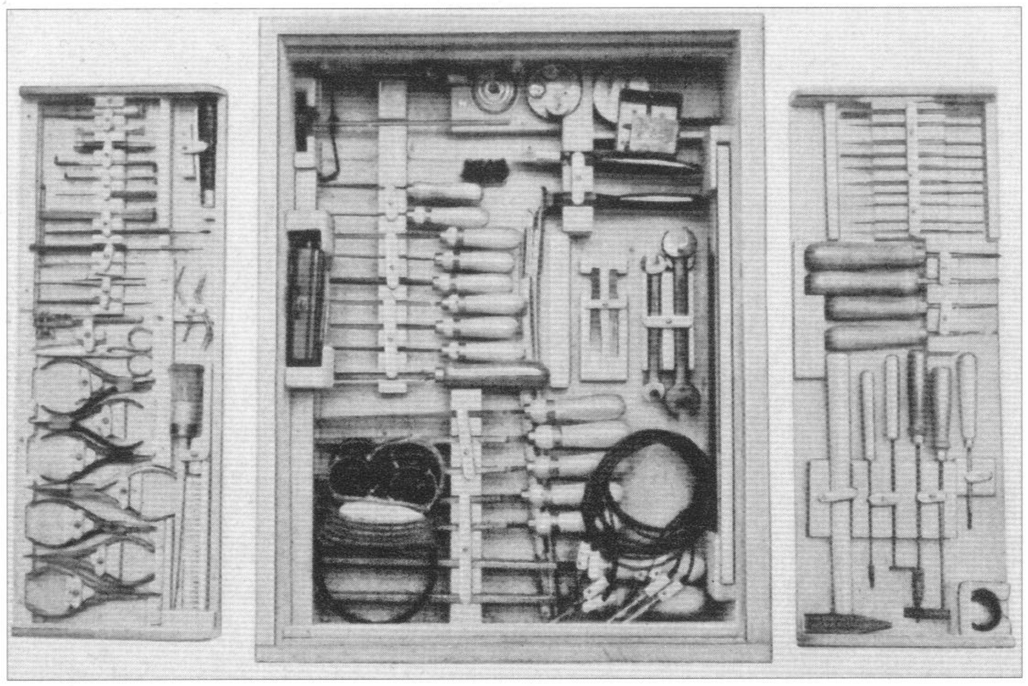




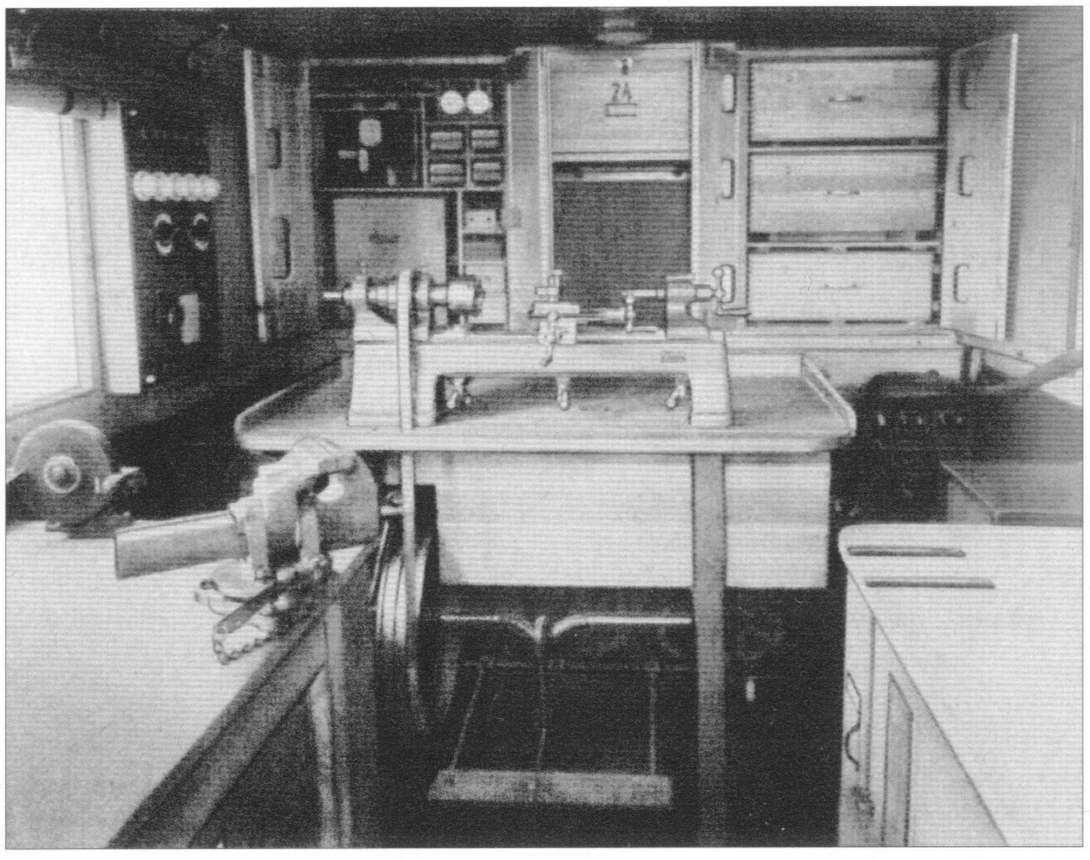


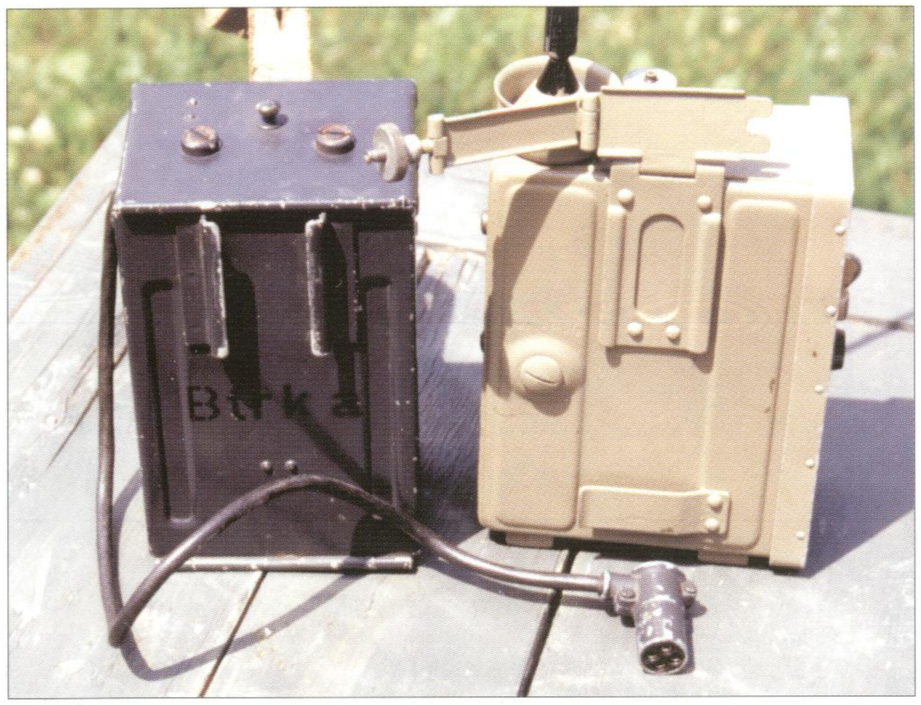
Kfz. 42

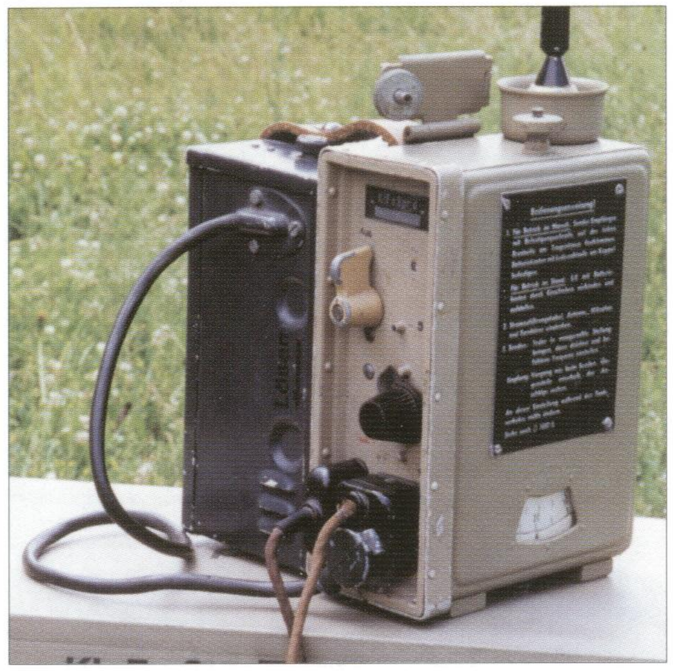
A logistic support of communication troops was catered for by a number of lorries and vans, hauling charging, battery maintenance and workshop facilities. Pages 20 and 45 show a radio workshop of a communication battalion.

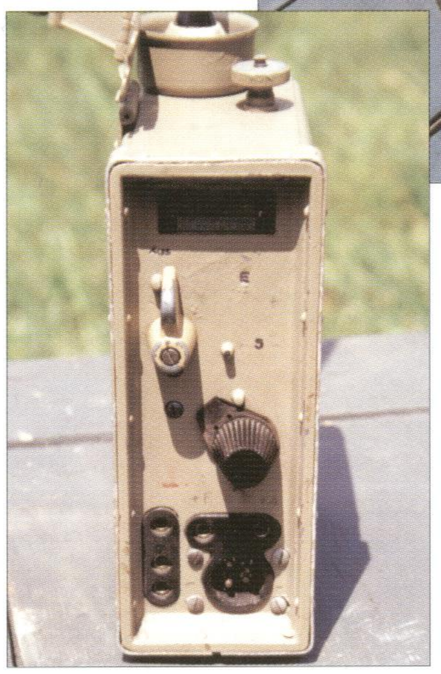


The vehicle carried all necessary equipment from a table press-drill though small lathe, common hand tools to special electric maintenance tools. A logical necessity was also the spares supply for all of the battalion's telecommunication equipment. Different vehicles of necessary load-carrying capacities might be modified for these purposes.





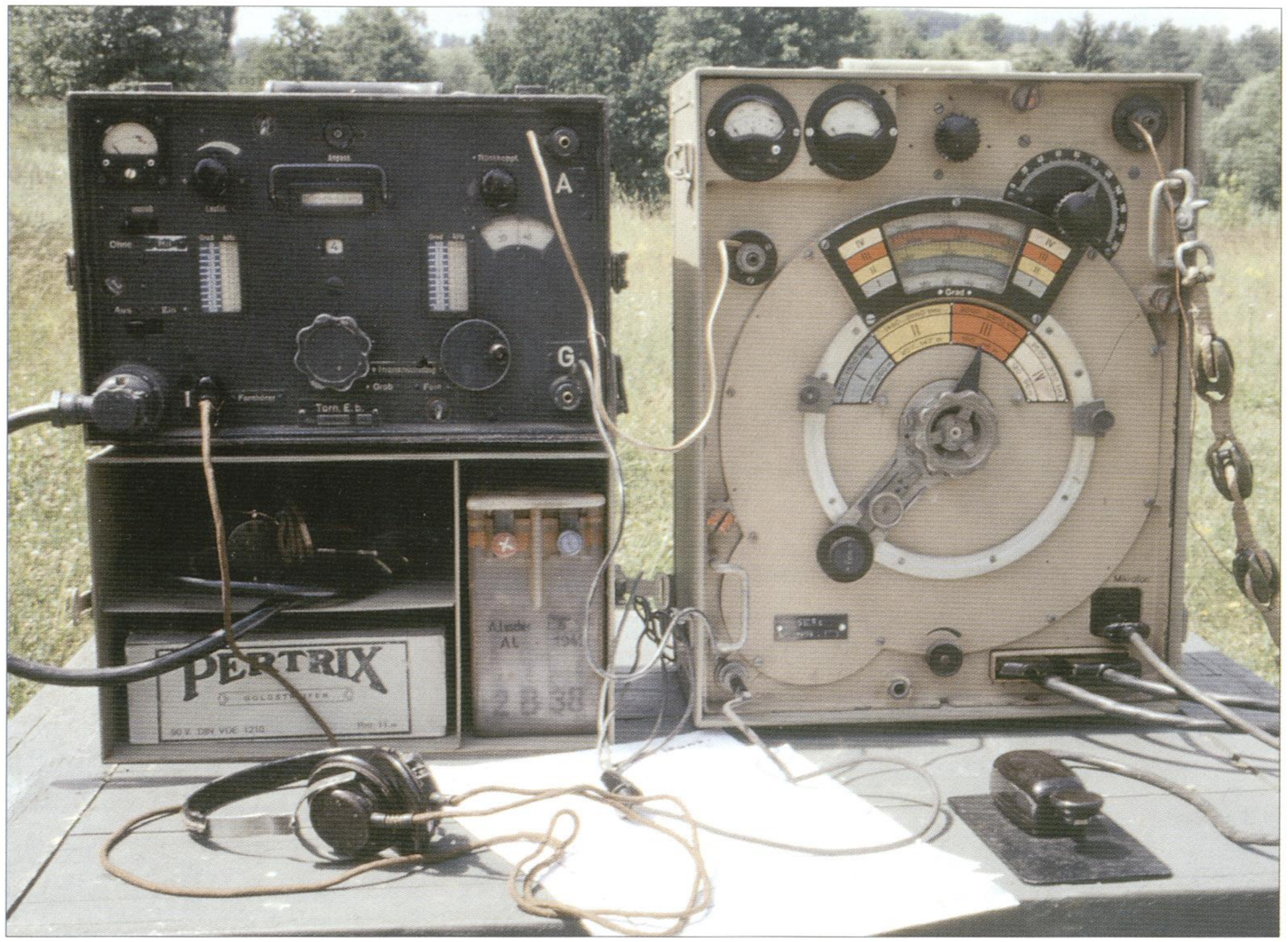




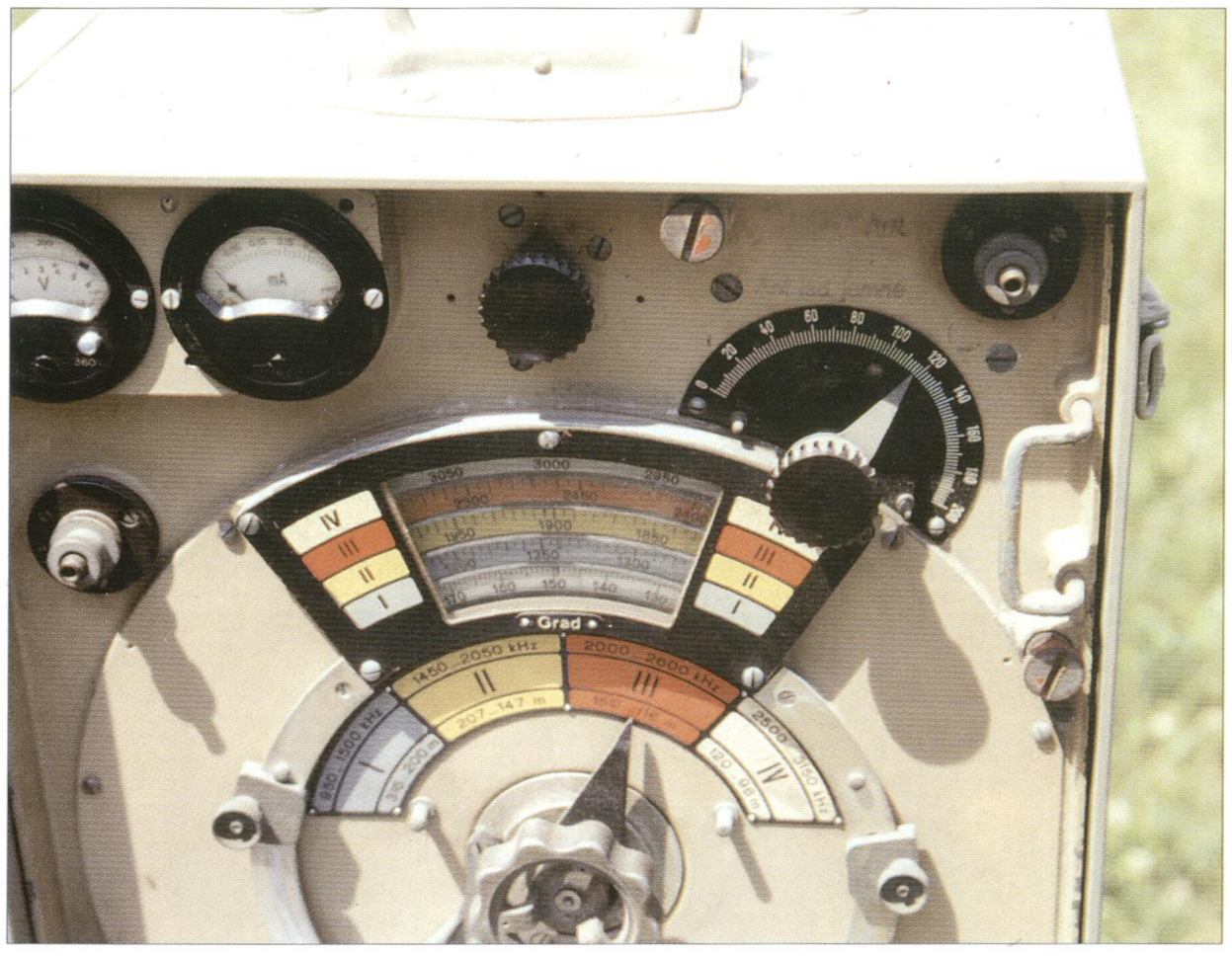
Kl.Fu.Spr.d.

Transceiver set for the lowest level of command. Frequency range 32.0 - 38.0 MHz.

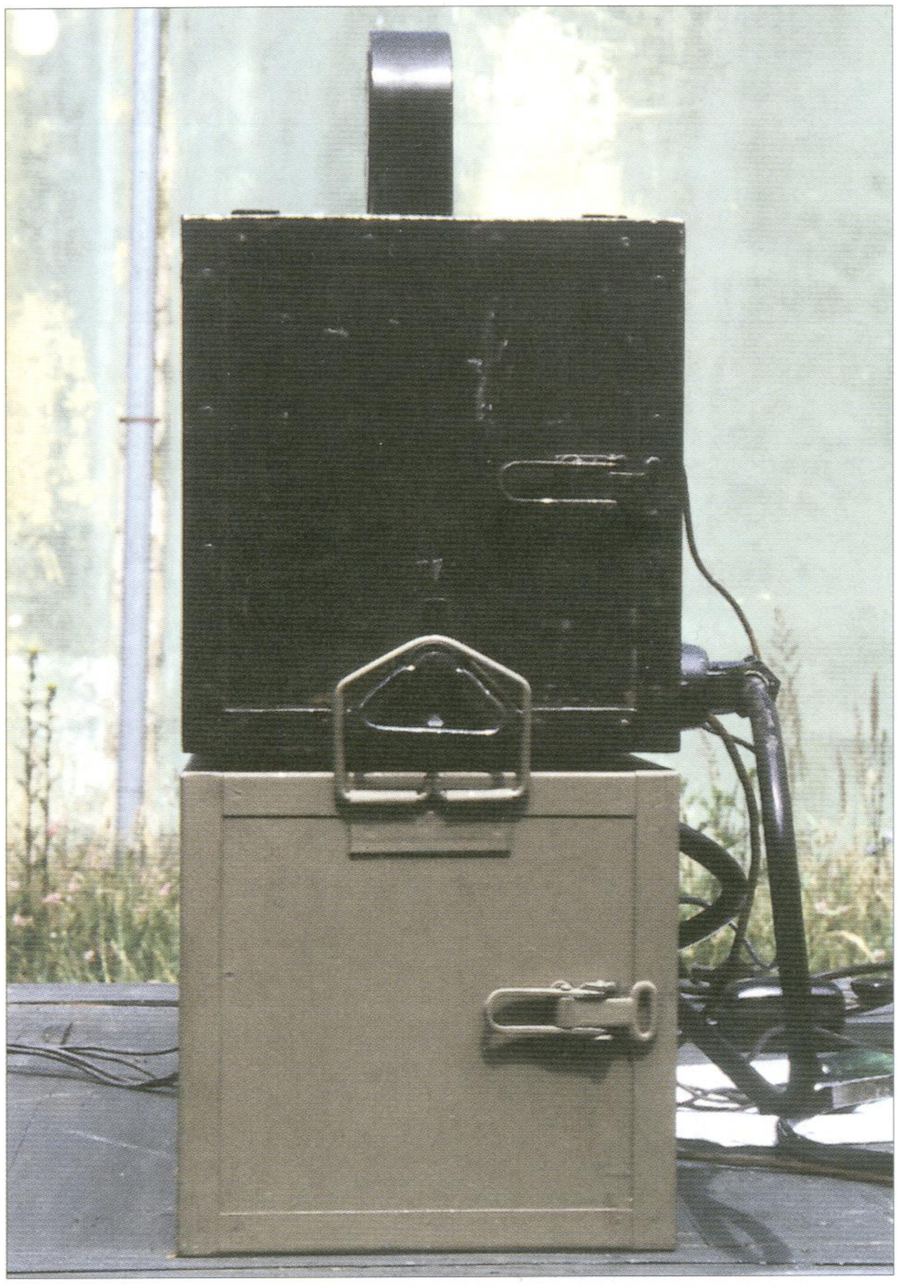
Fu 9

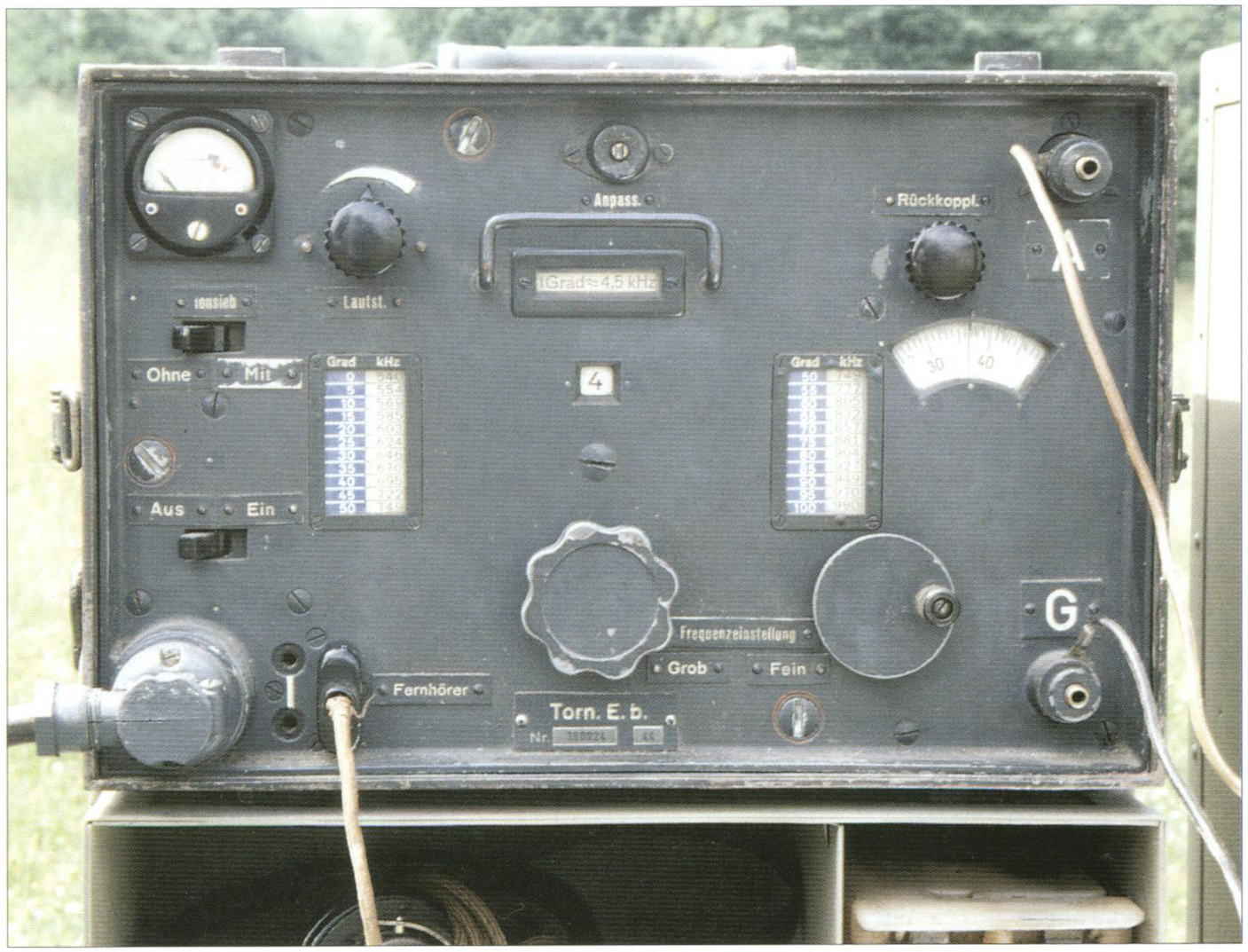


Fu 9 radio set: Torn.E.b. receiver, 5 W.S. transmitter, frequency range 0.95 - 3.15 MHz. Tactical use for communication between divisional and brigade level.



Fu 1





Torn.E.b. was the most prolific receiver used by the German military during the W.W.II. It was used in Wehrmacht, Luftwaffe and Kriegsmarine service. It had an eight-frequency band; battery powered feedback receiver with two H.F. pre-amplifiers and one L.F. stage, and was of superb mechanical design and manufacture. Having a frequency range of 0.1 - 7.1 MHz, it was fitted with a special military electron tube - the RV 2 P 800. Size of receiver was 24 x 36 x 22 cm, of the power source box 22 x 36 x 22 cm, respectively. The Pertrix anode battery and the 2 B 38 lead -acid tube heating battery are visible in the power source box.

Fu 9

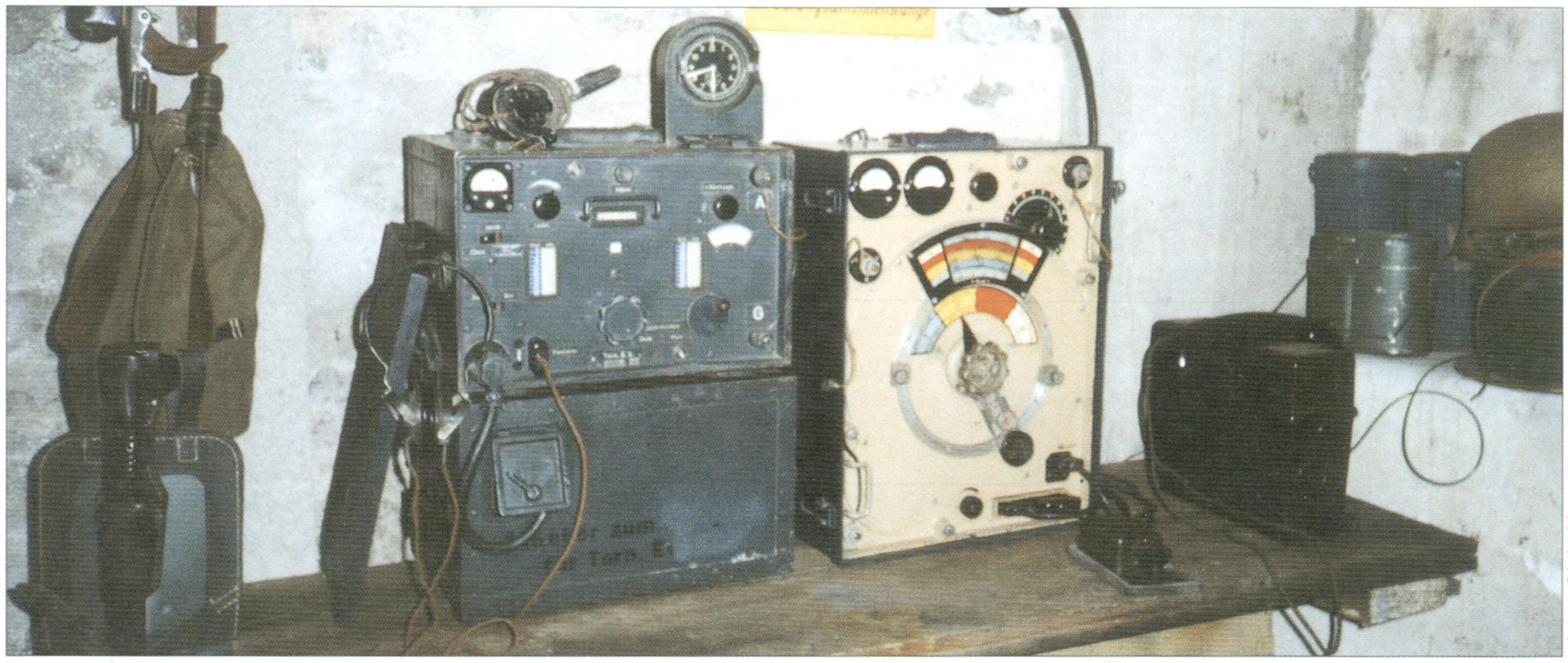
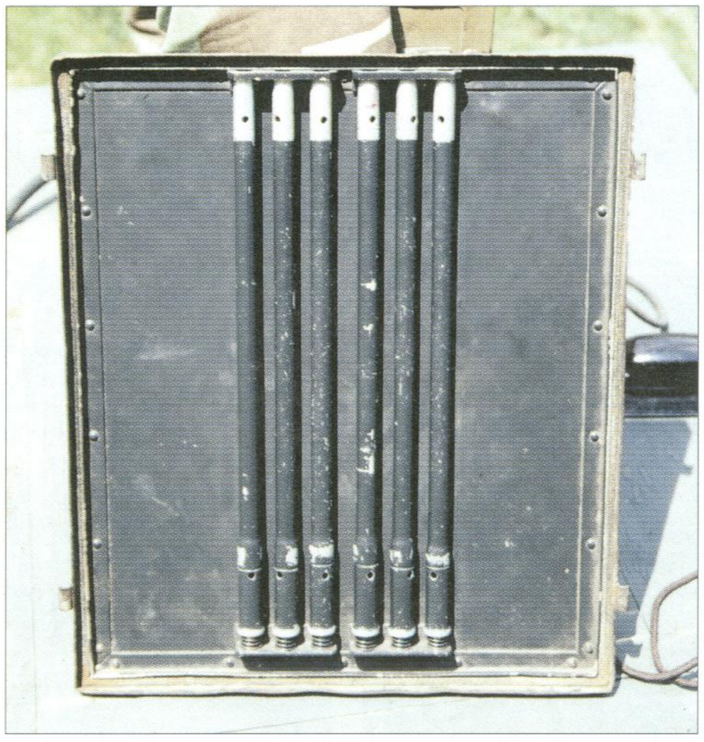


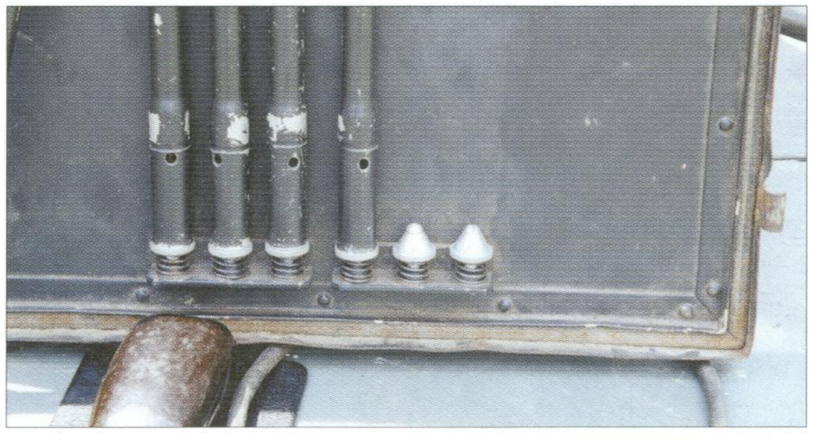
photo Alois Veselý archive

Opposite page. The radio set has a separate receiver tuning (E) and transmitter tuning (S), the battery condition is indicated on the left gauge, while the antenna tuning is shown on the right gauge. Switching of functions is done using a lever in the middle of the set; the bottom knob controls the volume.
The power supply connector is to the right, at the bottom edge the female connectors for earphones, wireless key and microphone are located.
In the bottom of the box there is a compartment for accessories and the base antenna section. The antenna sections are cleverly secured to the set's lid.

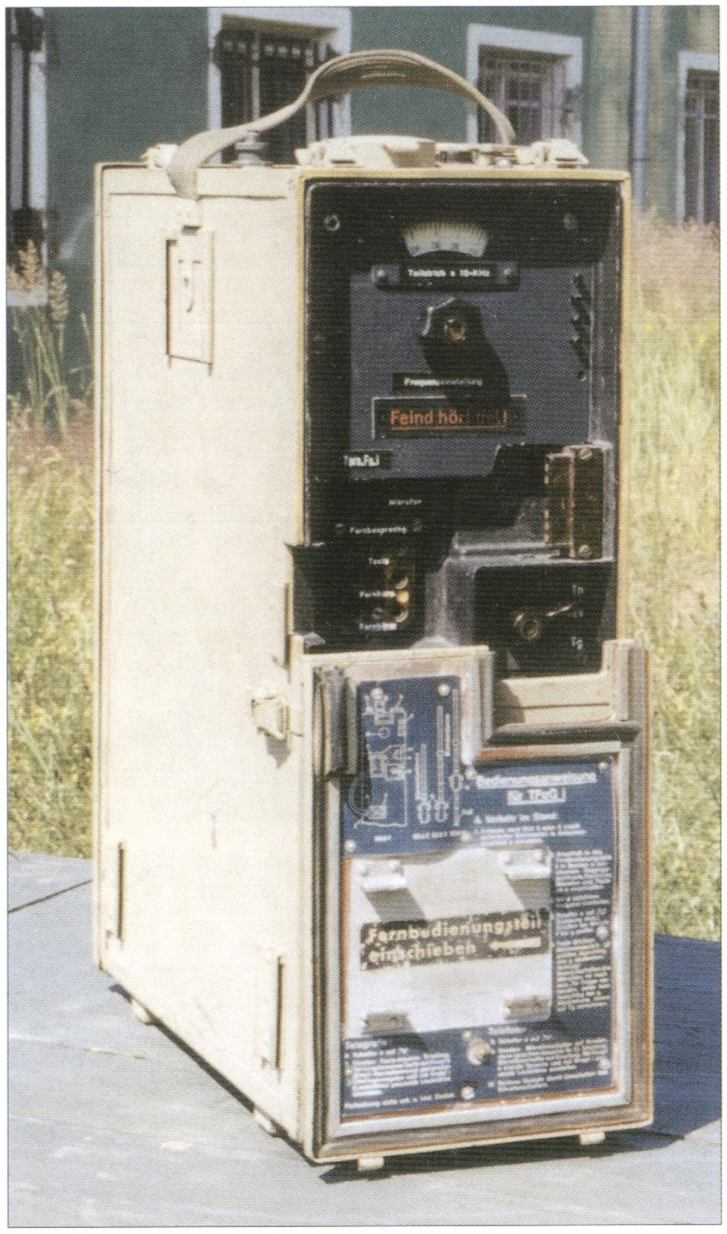
Reconstruction of the layout of the Fu 9 radio set in a bunker.
Far left and above the details of folding transport handles, lid hinges and of eyes used for interconnecting the individual components together.

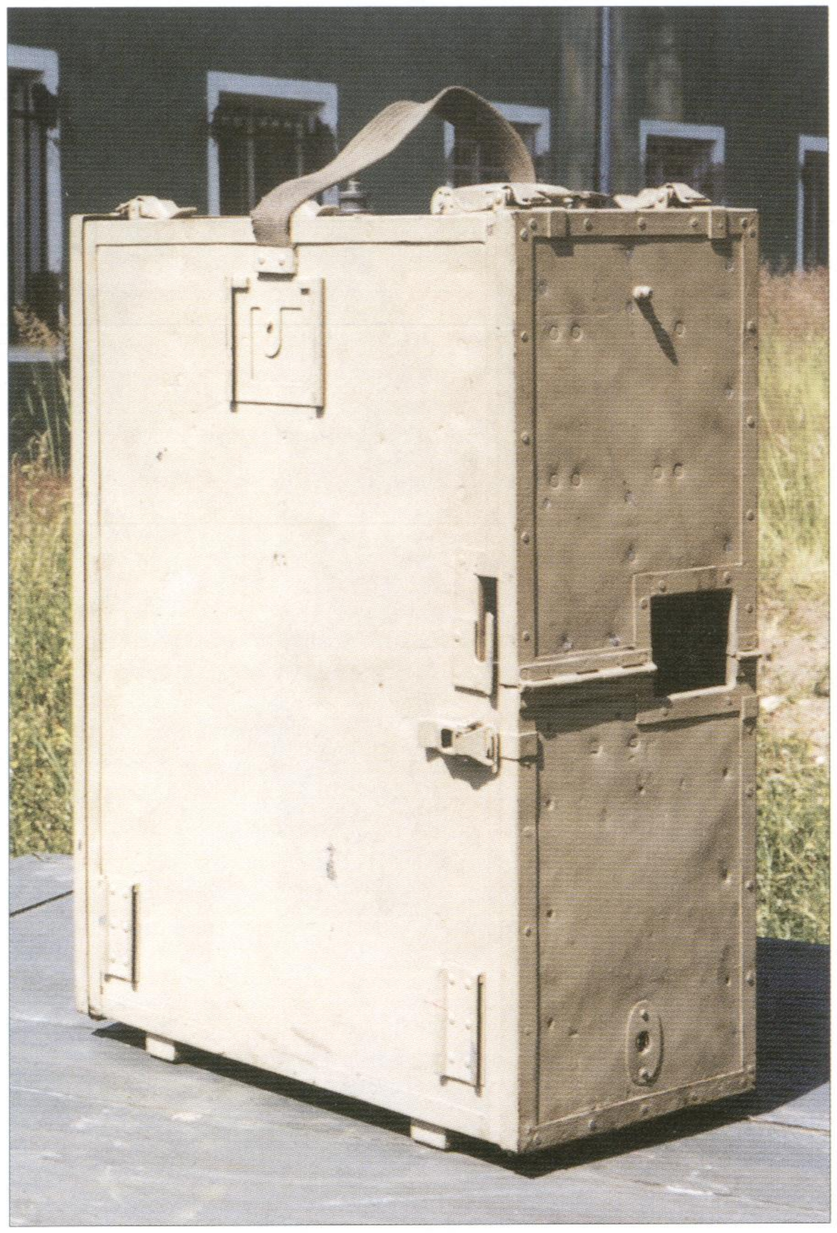
Torn. Fu. d2

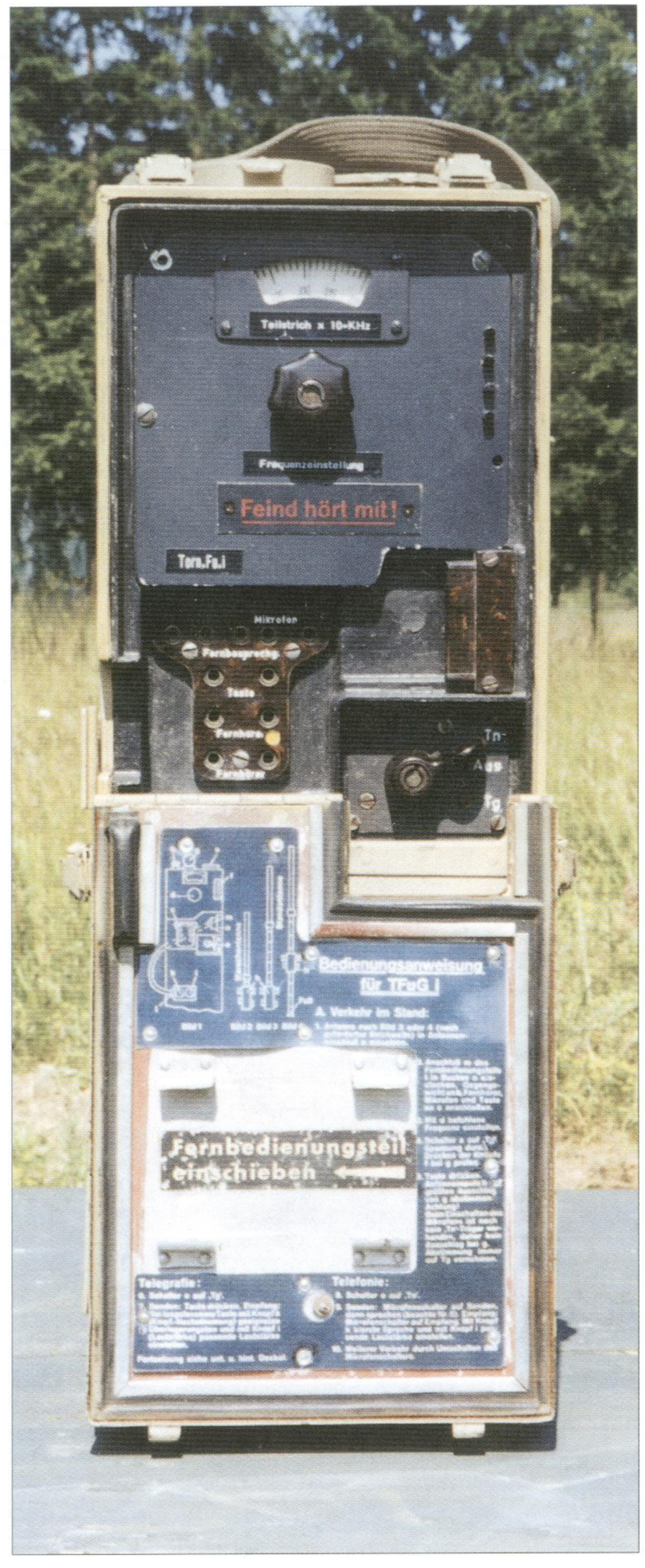




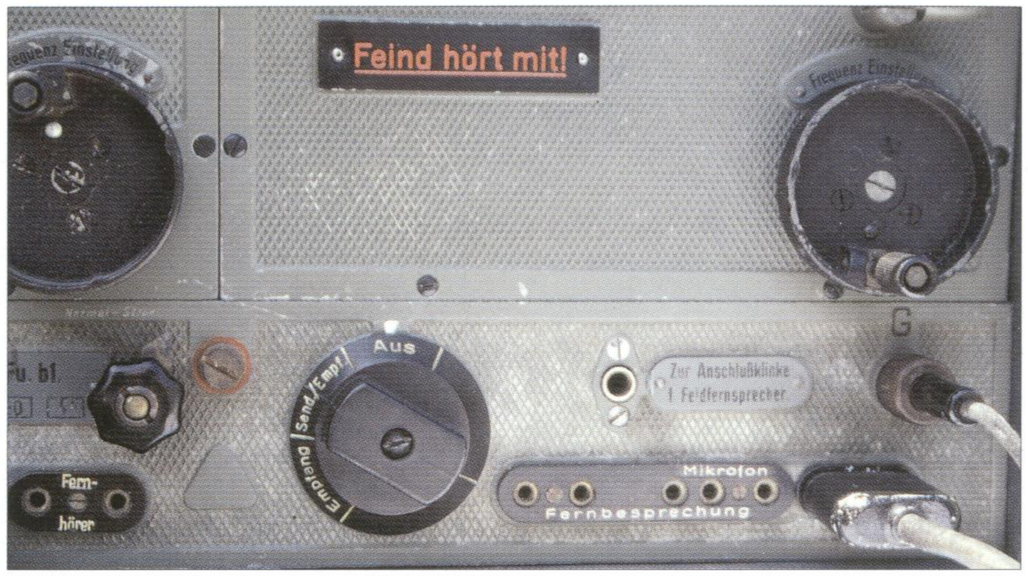
Torn.Fu.g.i





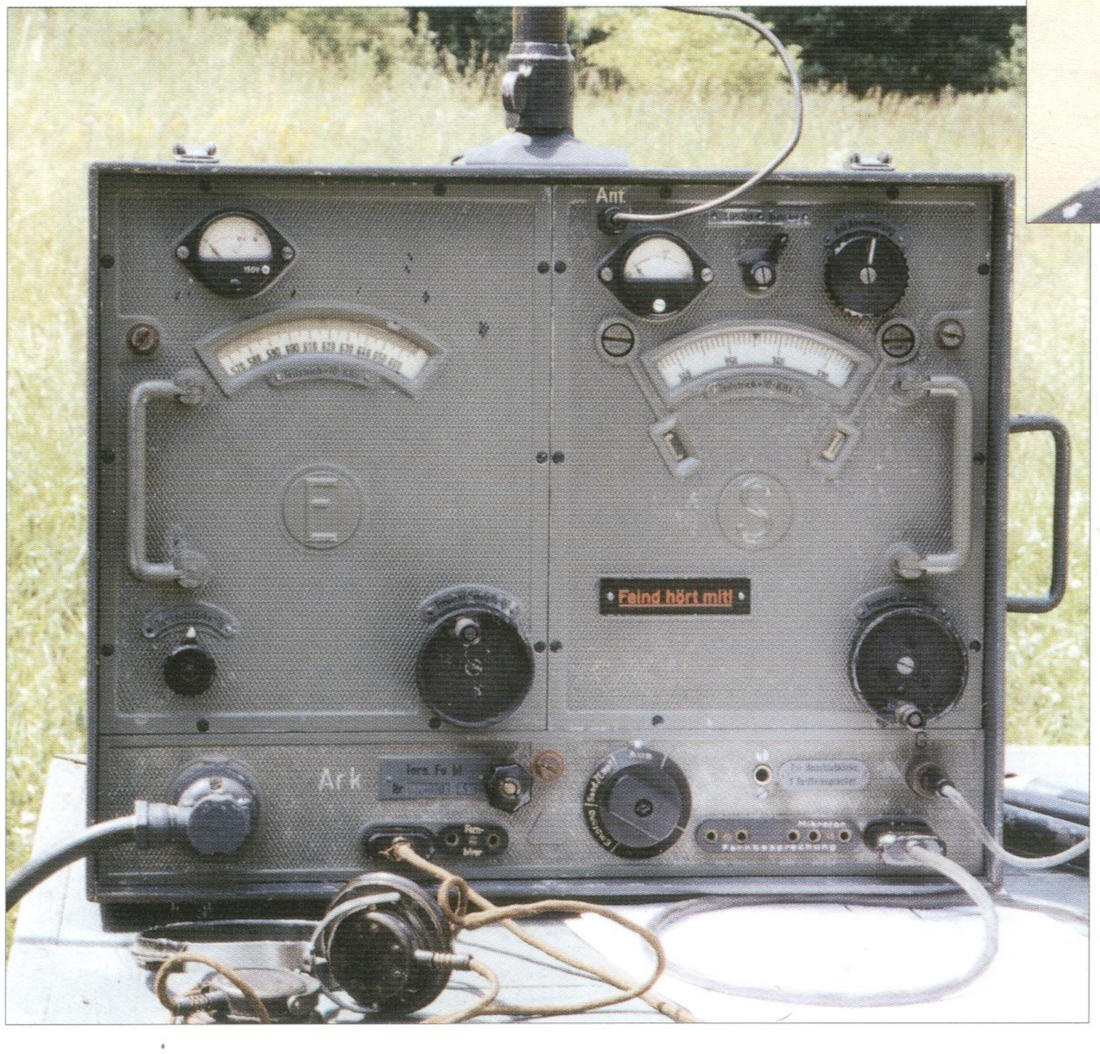


A perfectly designed short-wave radio, introduced to field service towards the end of war with the similar tactical purpose as the Torn.Fu.g.



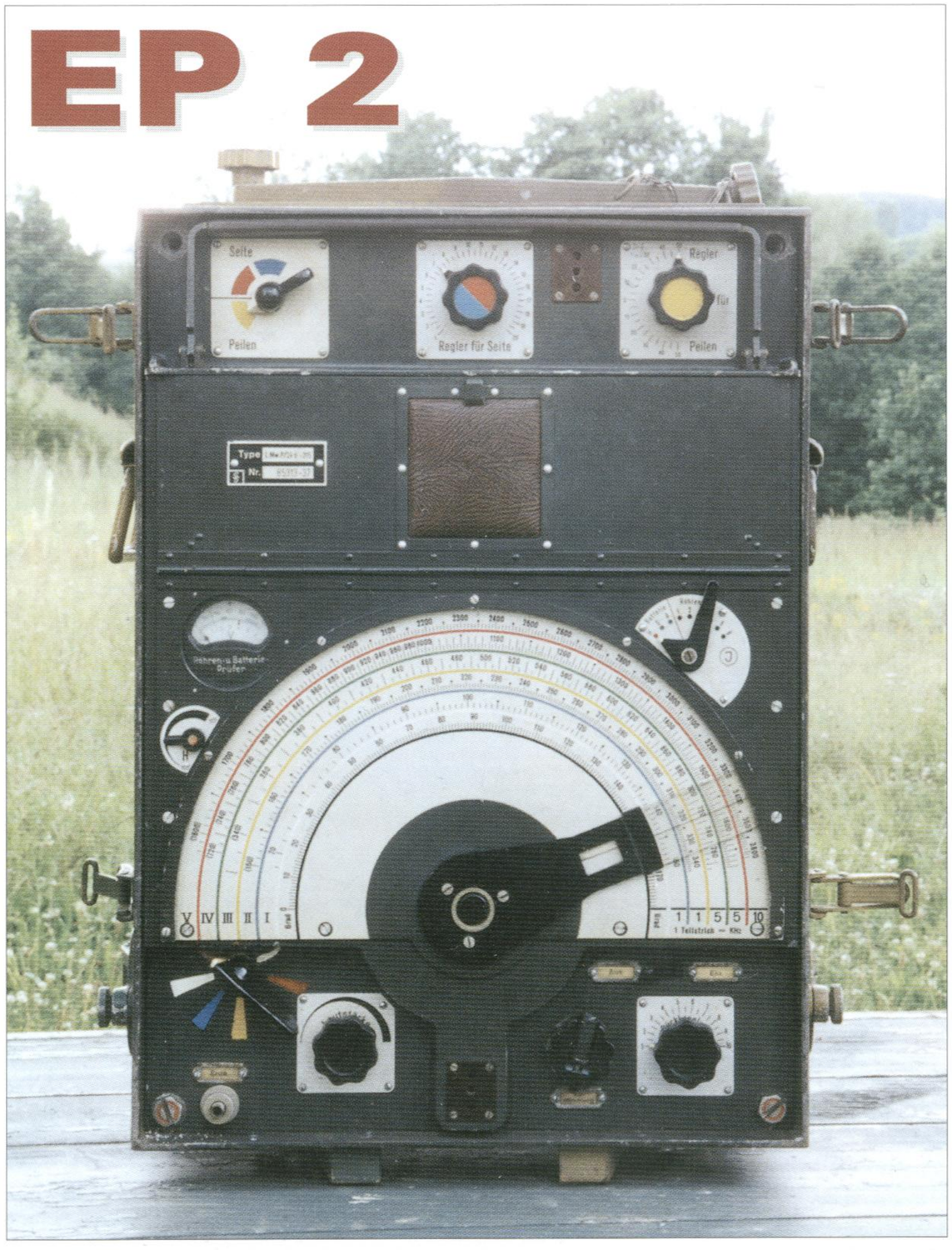
Antenna similar to the Torn. Fu.d2 radio shown on p. 25. The modular design enabled to use it in multiple shapes as necessary.

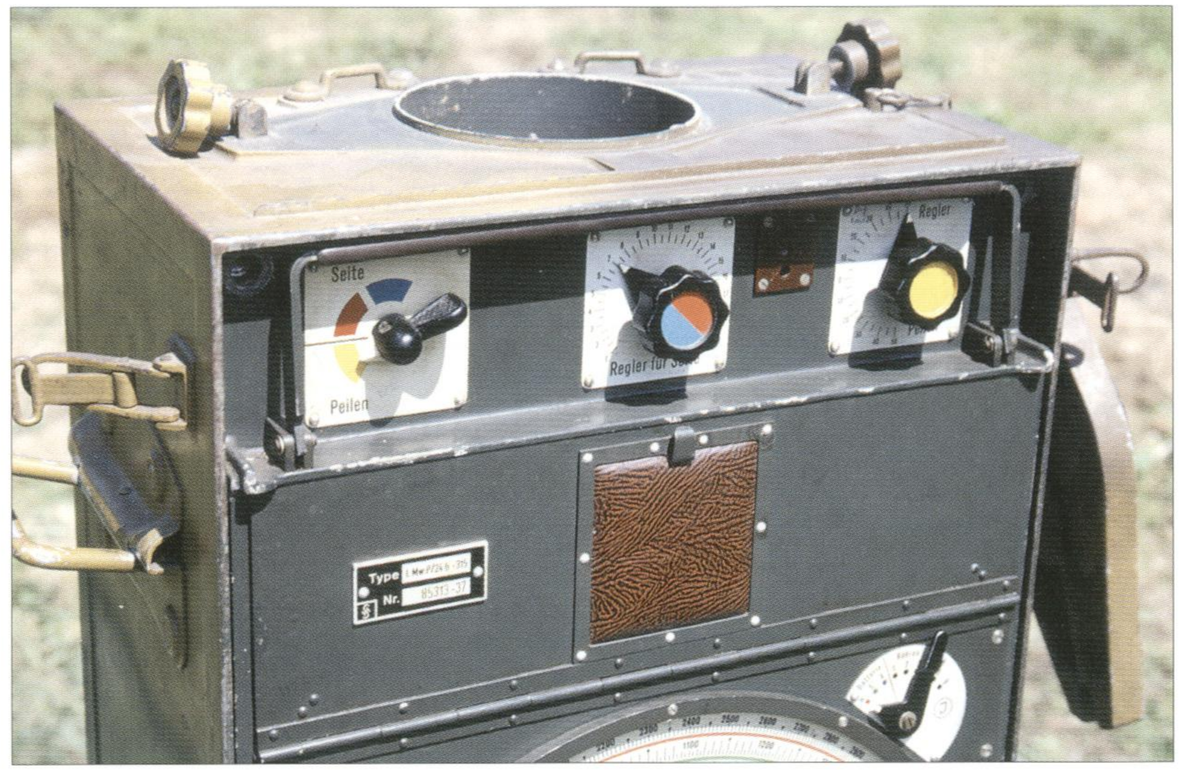
Torn. Fu. b1.



These radios existed in several frequency variants, in SW band. They were not discernible by the front panel. Their purpose was to serve artillery observers and gun batteries. Sized 40 x 46 x 21 cm, the power source box was of the same size.

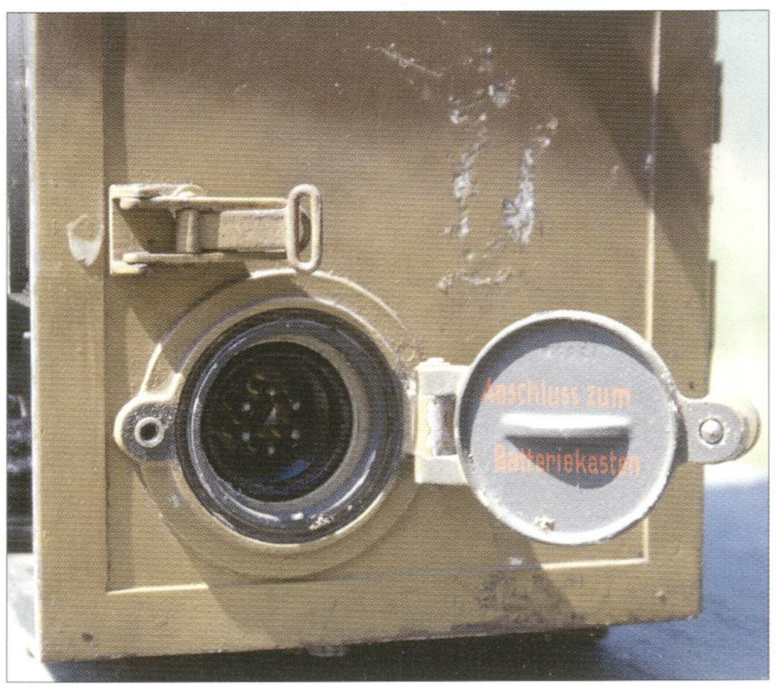
EP 2



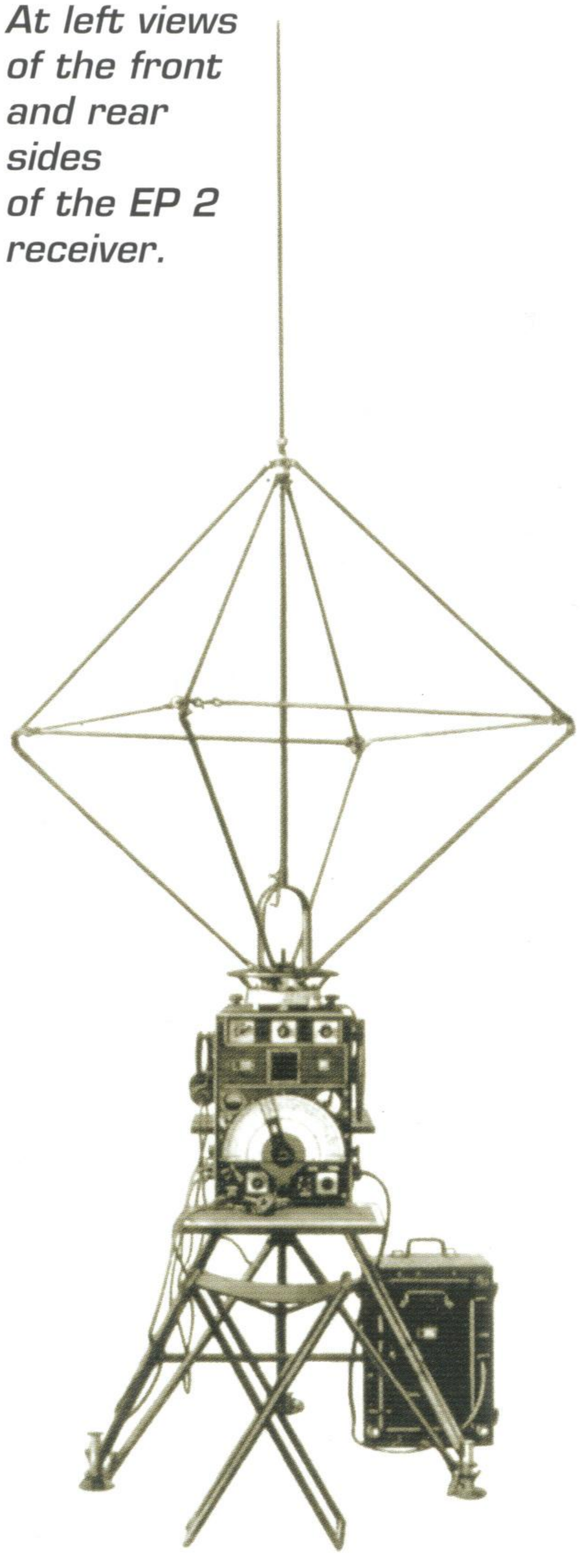


EP 2 goniometric receiver served to home on enemy transmitters. General view of this equipment is on opposite page, centre.

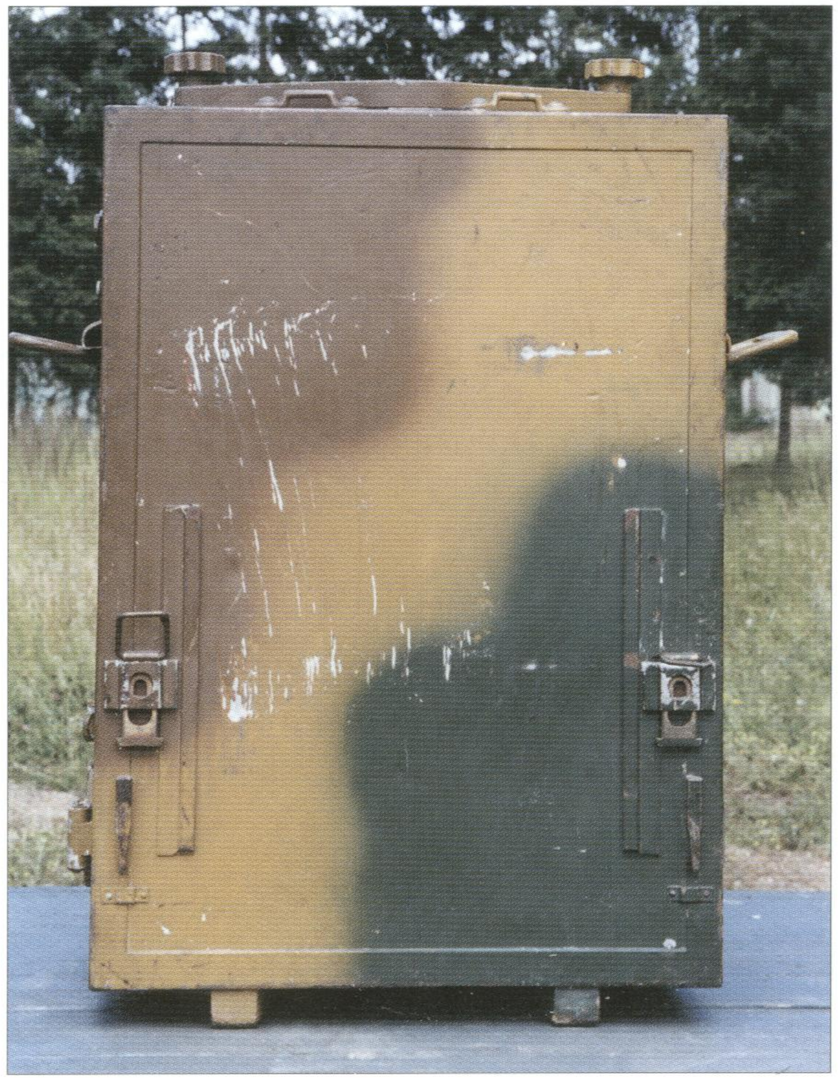
The inside of the loose antenna cover of the top side of set is well visible.



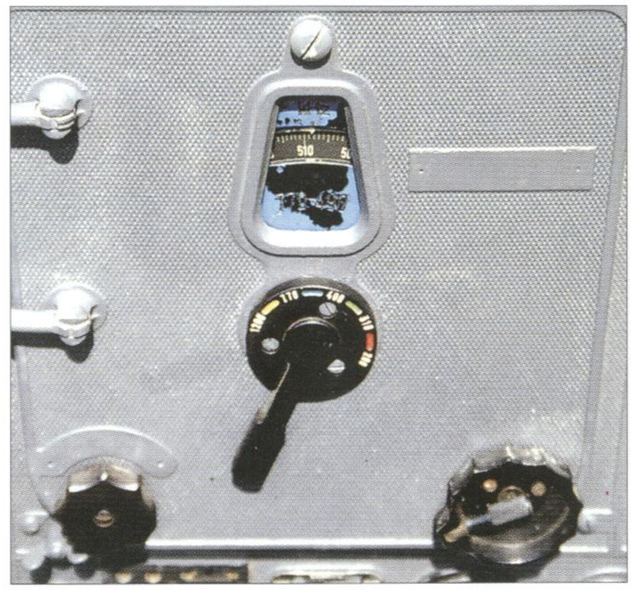
At left views of the front and rear sides of the EP 2 receiver.



SE 469A

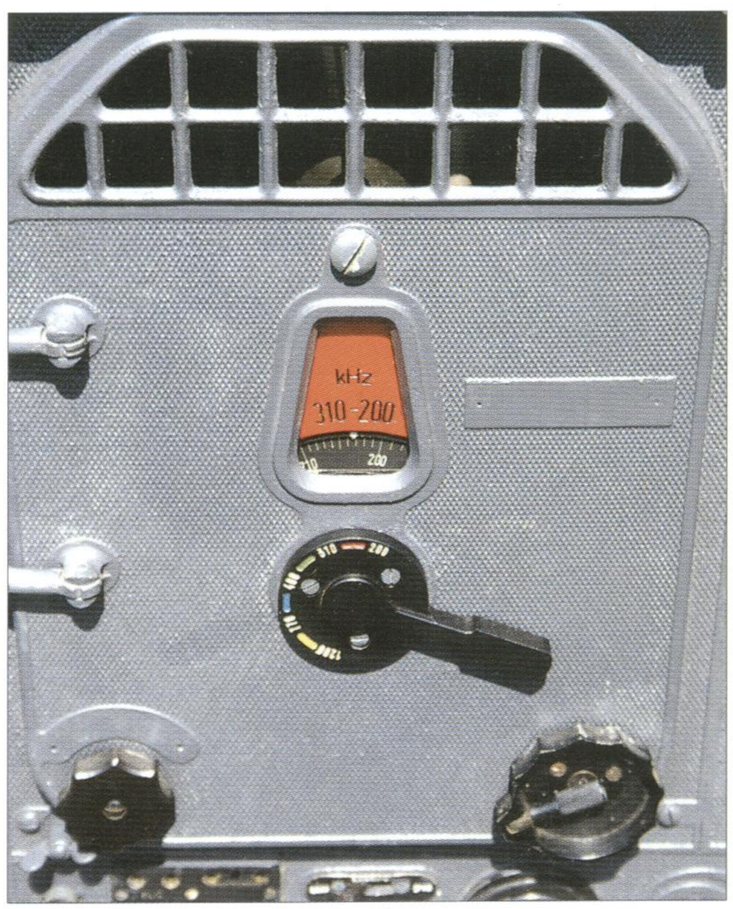


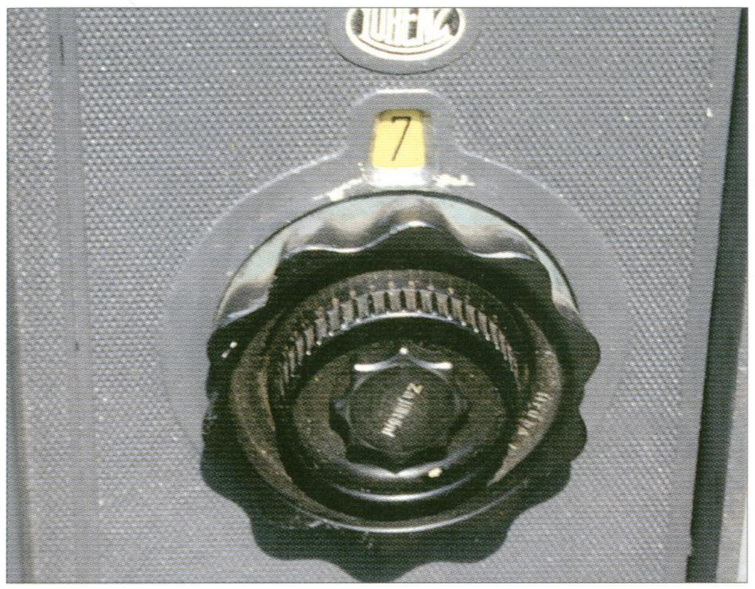
At right a 15 Watt transmitter with feedback receiver is of older vintage. It comes from the equipment of the battalion of a Slovak Fast Division, fighting side-by-side with Wehrmacht on the Eastern Front. On the front there is an inscription "Attention, the enemy listens" in Slovak; similar text in German was on German sets.

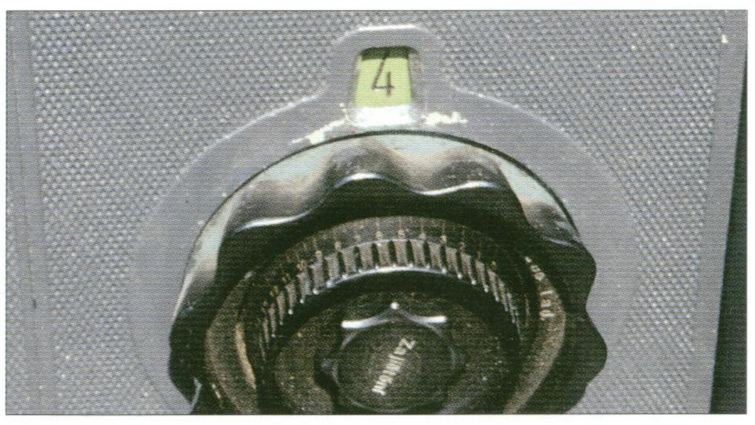


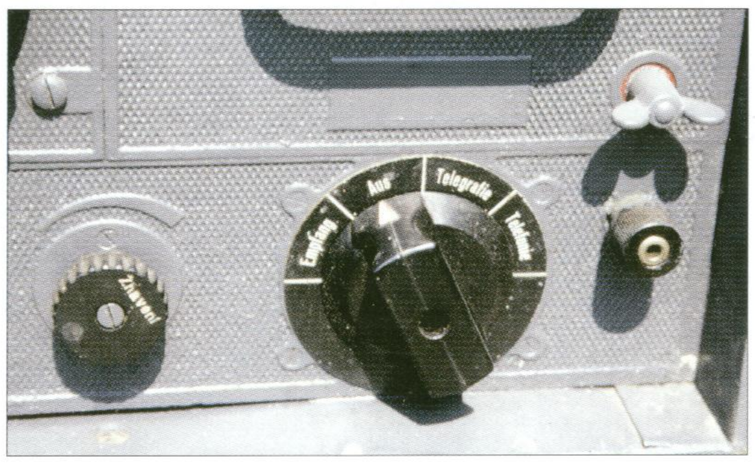
100 Watt transmitter was created in Lorenz Co. Design offices in 1935. It was used in stationary radio centres or, in a mobile utilisation, fitted into the Kfz. 61. With three versions of receivers (Torn.E445Bs, Torn.E.b. or Lw.E.a.) it provided communication of divisional HQ with higher units. In four frequency ranges, which were colour-coded, it covered frequencies from 200 to 1200 KHz. To ensure correct function the same colours had to be selected on both switches. In wireless telegraphy mode its range was up to 400 km. Size was 51 x 50 x 28 cm.

100 Watt transmitter









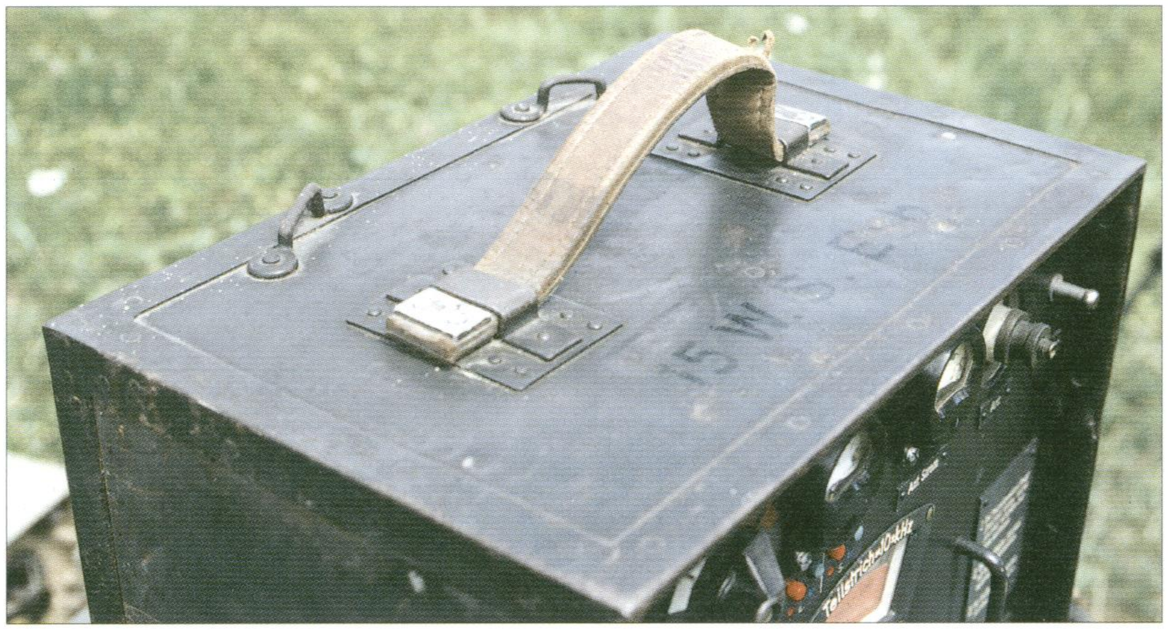
Equipment set	Receiver	Frequency range in MHz	Transmitter	Frequency range in MHz	Antenna	Remarks
Fr 1 TE	Torn.E.b	0,1 -7,1	-	-	2m-Stab	
Fu 2 EU	Ukw.E.e	27,2 -33,0	-	-	2m-Stab	
Fu 3 alt EU	Ukw.E.d1	42,1 - 47,8	-	-	1,4m-Stab	
Fu 3 neu EU	Ukw.E.f (Torn.Ukw.E.f)	42,1 - 47, 8	-	-	1,4m-Stab	
Fu 4 EM	Mw.E.c	0,84 - 3,0	-	-	(Stern A.d)	
Fu 5 SE 10 U	Ukw.E.e	27,0 - 33,0	10 -W-S.c	27,2 - 33,0	2m-Stab	2)
Fu 5 (Luft)	Ukw.E.m	40,3 - 47,0	10 -W-S.m	40,6 -47,0	-	
Fu 6 SE 20 U	Ukw.E.e	27,3 - 33,0	20 -W-S.c	27,2 - 33,0	2m-Stab	
Fu 7 SE 20 U	Ukw.E.d1	42,1 - 47,8	20 -W-S.d	42,1 - 47,8	1,4m-Stab	1)
Fu 8 SE 30	Mw.E.c	0,84 - 3,0	30 -W-S.a	1,0-3,0	1,8m-Stern D	4)
Fu 9 SE 5	Torn.E.b	0,1 - 7,1	5 -W-S.	0,95 - 3,15	8m-K.M.+St.a	
Fu 10 SE 30 (TE)	Torn.E.b.	0,1 - 7,1	30 -W-w.	0,95 - 1,65	Sm-Mast-St.a	
Fu 11 SE 100	Torn.E.b.	0,1 - 7,1	100 -W-S.	02, - 1,1	10m-Mast	
Fu 12 SE 80	Torn.E.b o. Mw.E.c	0,1 - 7,1 0,84 - 3,0	80-W-S.a	1,12 - 3,0	Dach-Ant.o. 8m-K.M.+St.a	5)
Fu 13 SE 20 U	2 Ukw.E.e	27,2 - 33,0	20-S-S.c	27,2 - 33.0	2m-Stab	
Fu 14 Ez	10 Torn.E.b 3 Kw.E.a 2 Fu.H.E.a 2 Fu.H.E.b 2 Fu.H.E.c 2 Fu.H.E.d	0,1 - 7,1 1,0 - 10,0 75 - 875 kHz 0,875 - 3,75 3,75 - 28,5 24,5 -61,0	- - - - - -	- - - - - -	(10m-M+St.a) Draht-A. Draht-A. 20m Draht-A. 15m Draht-A. 11m Draht-A. 4,5m	
Fu 15 EU	Ukw.E.h	23,1- 24,9	-	-	2m-Stab	
Fu 16 SE 10 U	Ukw.E.h	23,1- 24,9	10-W-S.h	23,0 - 25,0	2m-Stab	
Fu 17 SEU(T)	Torn.Fu.h	23,1- 24,9	(0,1 W)	23,1 - 24,9	(2m)-Stab	
Fu 18 SEU	4x Ukw.E.b1	25,0 - 27,1	4x 20-W-S.b	25,0 - 27,1	5m-Mast-St.b	
FU 19 SE15	(IM) S/E-GER.)	3,0 - 7,5	15-W-S/E.a	3,0 - 7,5	Dach-Ant.	4), 5)
Fu 20 SE 30	Torn.E.b.	0,1 - 7,1	30-W-S.a	1,1 - 3,0	8m-Mast+St.a	
Fu 21 SE 225	Kw.E.a	1,0 - 10,0	225-W-S.F41	2,5 - 7,5	9m-Mast+St.a	
Fu 22 SE 30	Torn.E.b	0,1 - 7,1	30-W-S.a	1,12 - 3,0	8m-Mast+St.a	
Fu 24 SE 15	2 Torn.E.b	0,1 - 7,1	15-W-S/E.b	3,0 - 7,5	-	
Fu 25 SE 70	R3 Torn.E.b Ukw.E.g	2,5 - 27,5 0,1 - 7,1 39,6 -45,0	Lo 70 K 39 Lo 70 K 39 20-W-S.g	3,0 - 16,6 3,0 - 16,6 39,6 -45,0	8m-Mast 1,4m-Stab	3)

Remarks

1) Equipment fit in reconaissance aircraft: FuG 17, FuG 17 Z
2) Equipment fit in fighter-bomber aircraft (FuG 16 in Bombers)
3) Equipment fit in ground-attack aircraft: FuG 16 ZS
4) Equipment fit in old fughter and dive bomber aircraft: FuG VIIa
5) Roof antenna or steel frame antenna or bow antenna, the lattes often replaced by star antenna of 1,8m diameter

The basic orientation table to help understand the possible combinations of instrument sets, wavelengths and types of antennae used.

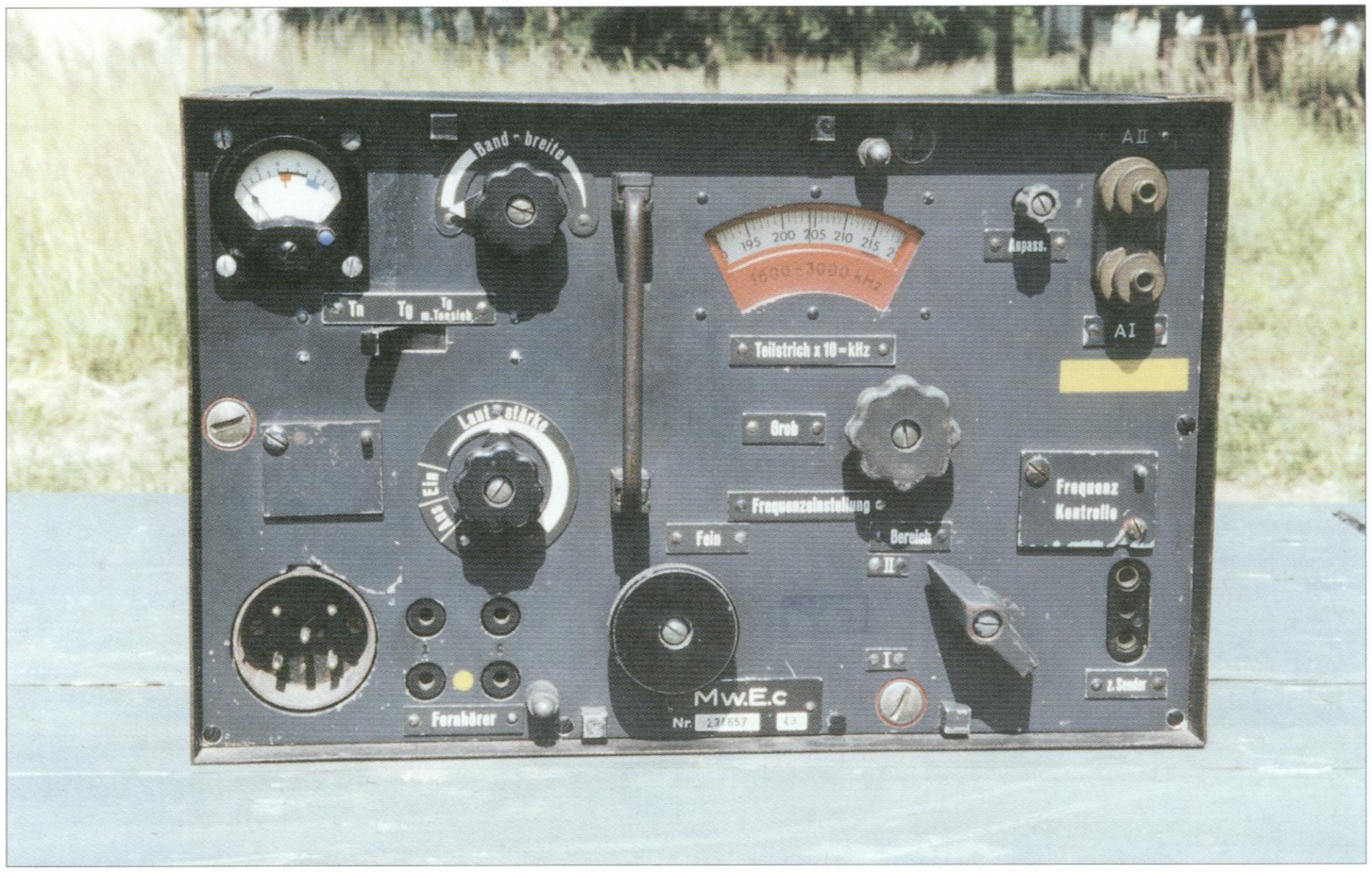
Fu 19 (15 W.S.Eb)



This short-wave transceiver of modern concept served as a portable unit, but it could be installed into the Kfz. 17 radio vans.
Size 42 x 32 x 22 cm.
This set was able to transmit also the telex messages, using Hell Fernschreiber.

*Left note the white **Ark** letters, denoting an arctic version.*

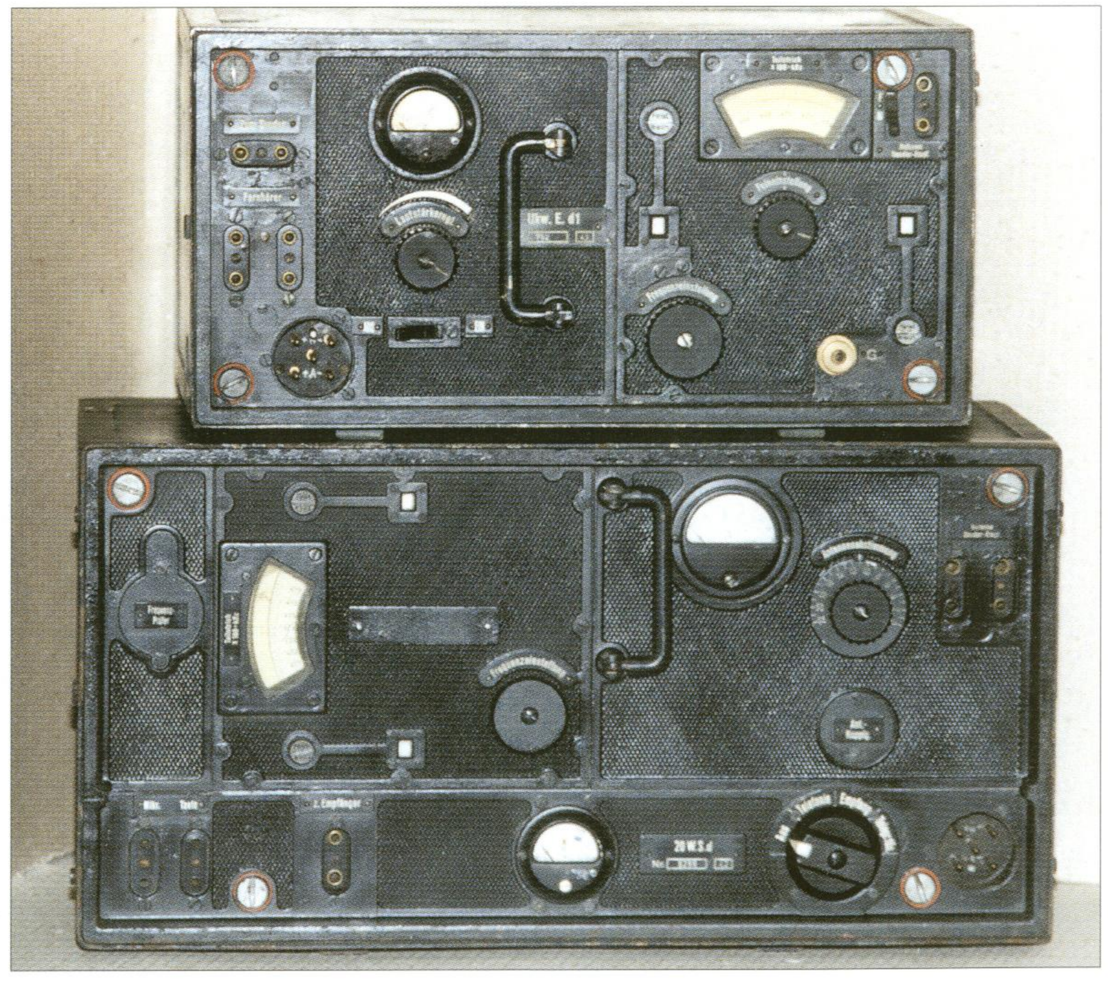
Mw.E.c



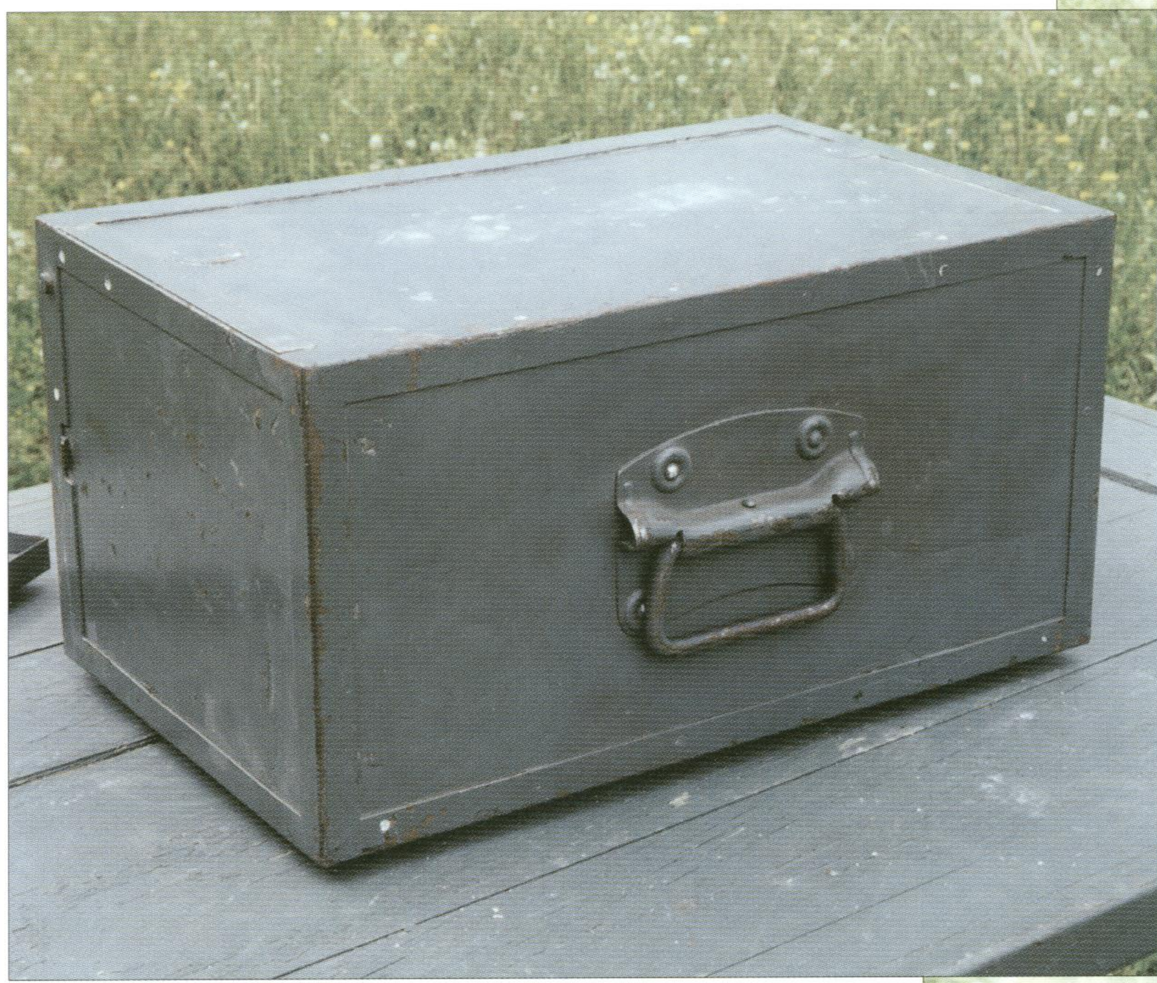
A top short-wave receiver earmarked for service with tank corps, was fitted to every commander's tank. Size 32 x 20 17 cm.

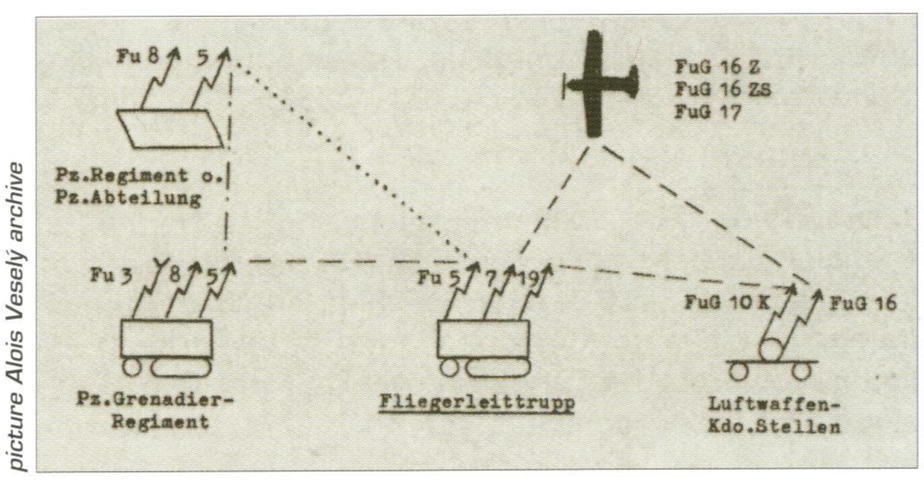
Fu 7

This set was used to co-ordinate the ground troop operations with the Luftwaffe. It was fitted to Kfz. 17/1 radio vans, Sd.Kfz. 251/3 or 6 APC's and to commanders' tanks. The transmitter was designated 20 W.S.d.

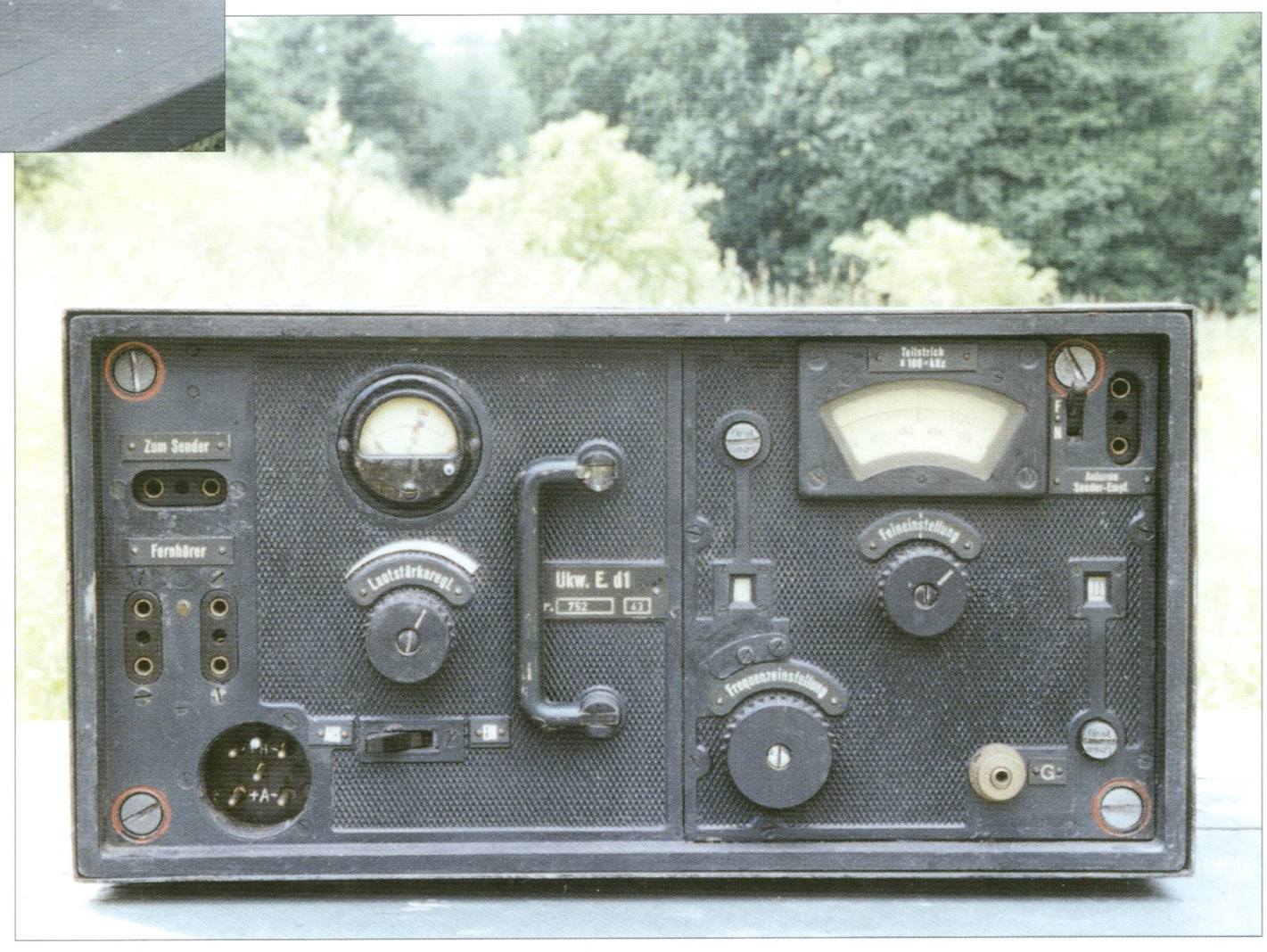


Ukw.E.d1 receiver



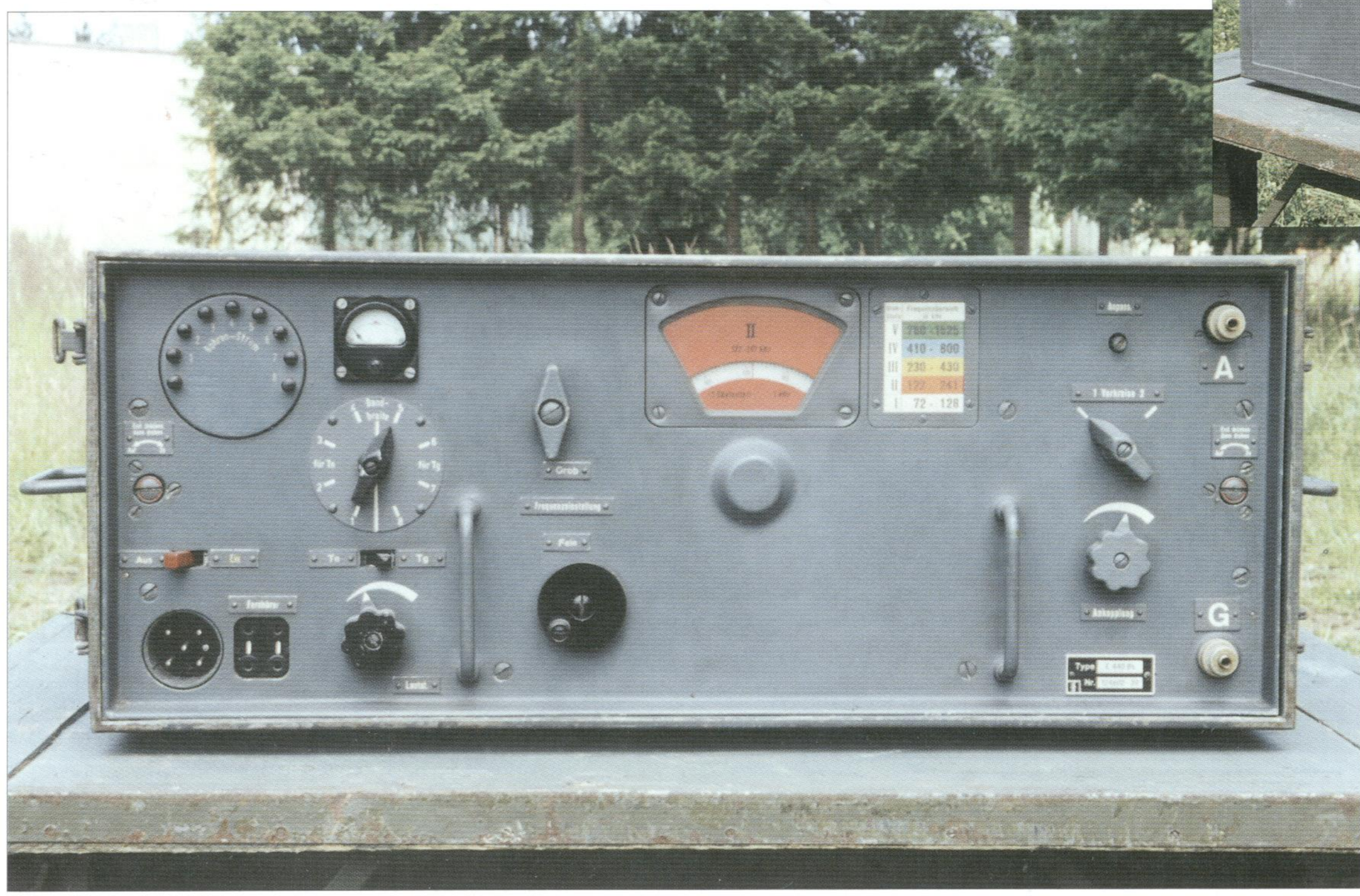


picture Alois Veselý archive



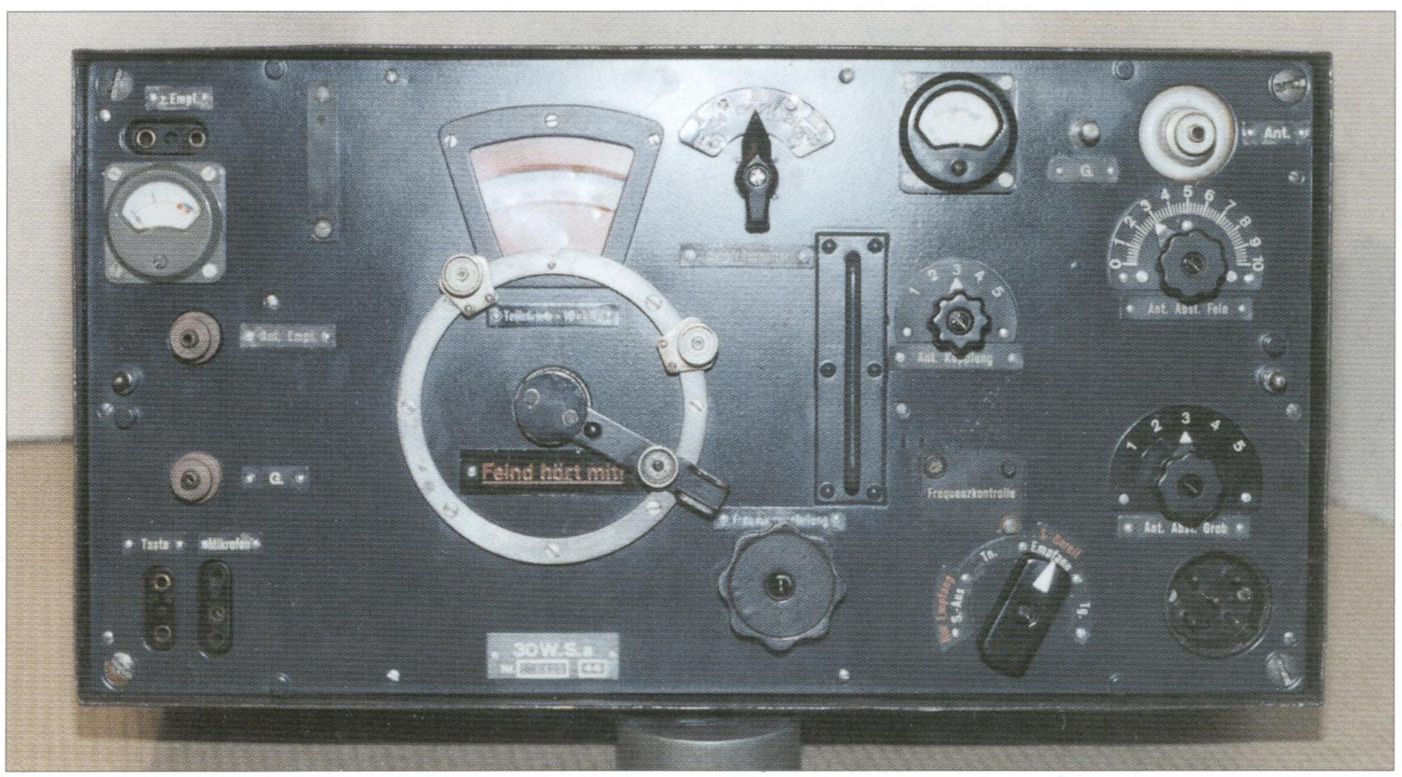
Communication diagram of ground troops with Luftwaffe.

Lw.E.a late marking as E440 Bs



Long-wave receiver used with the 100 W.S. transmitter.

Fu 22



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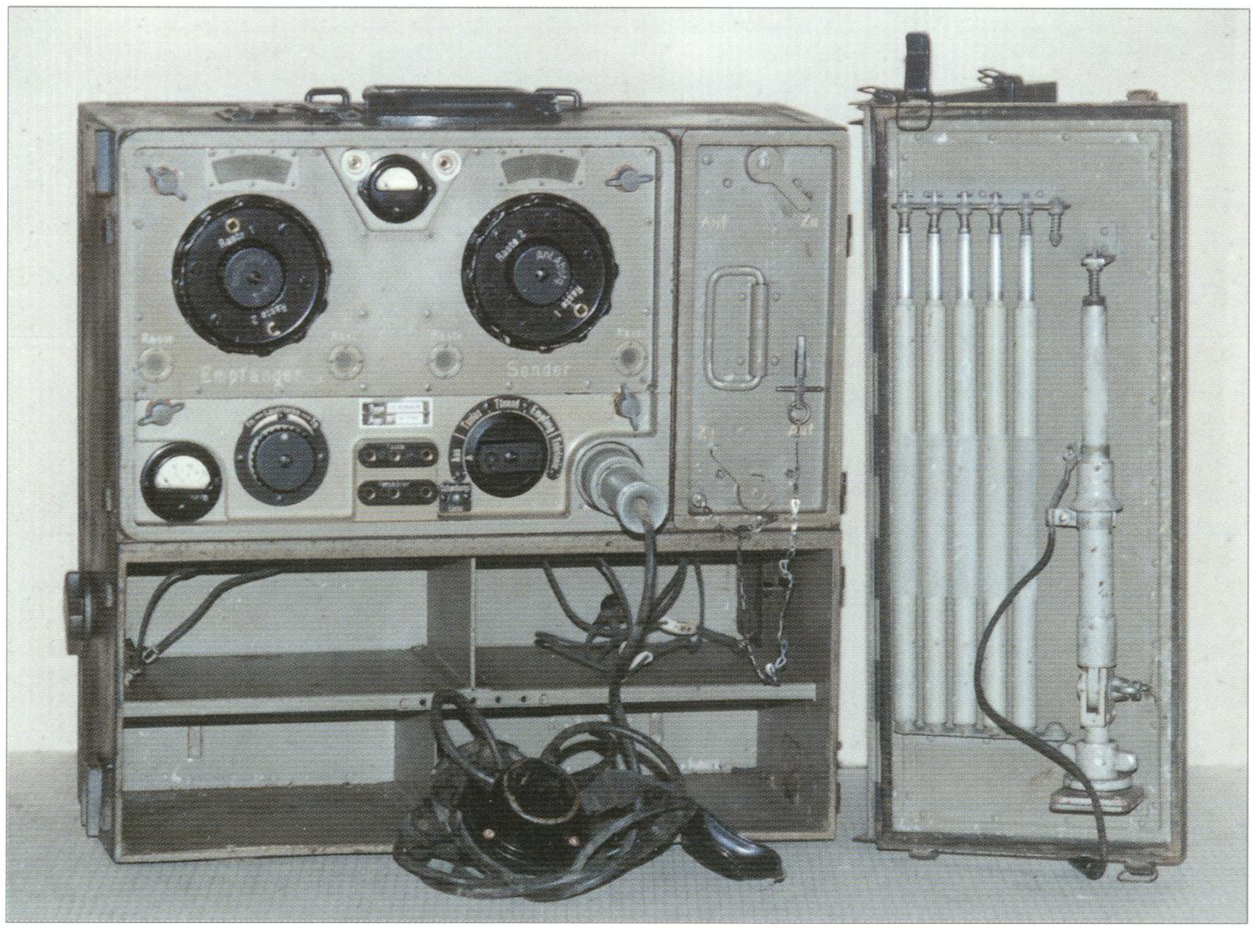
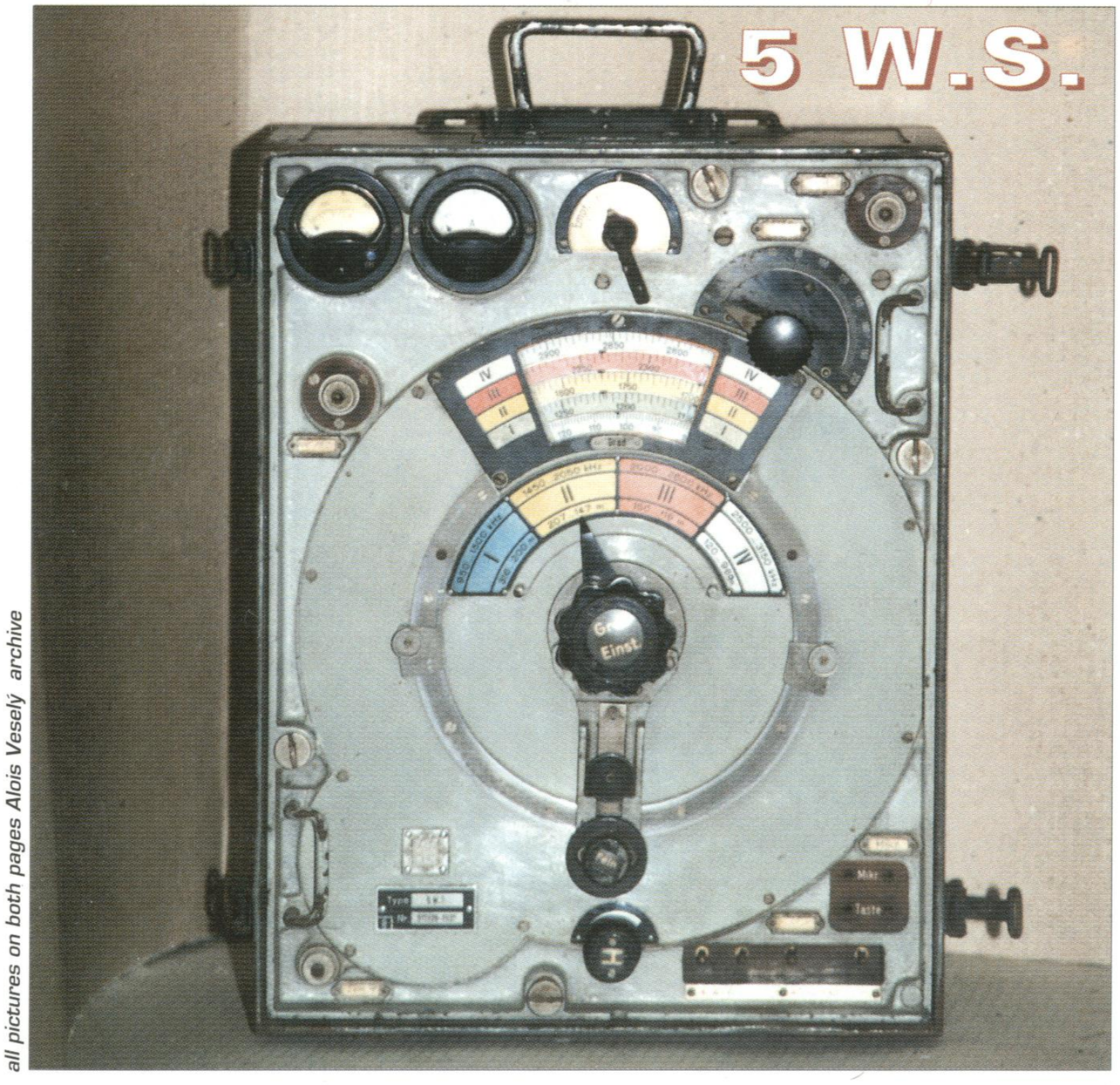
Lo 1 UK 35 Transceiver

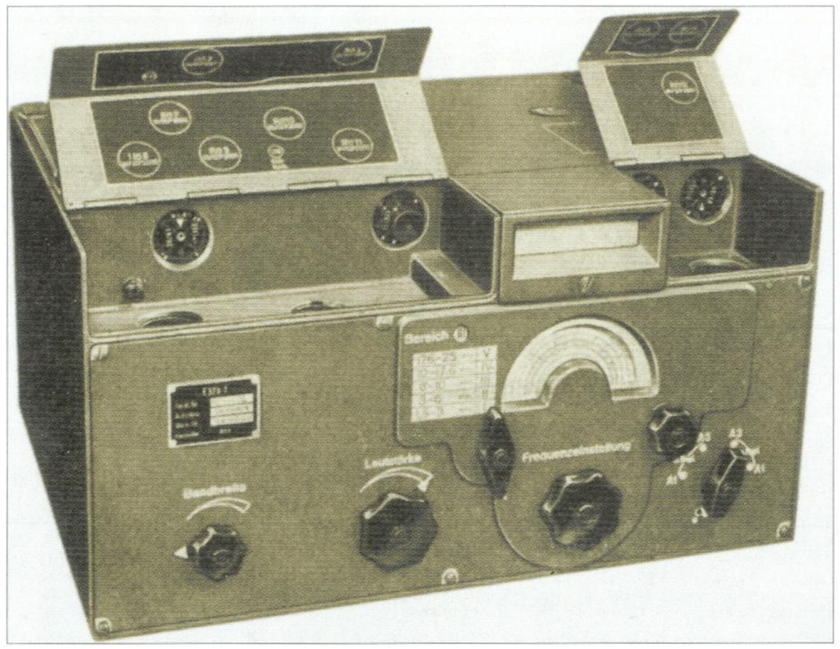


Feldfu

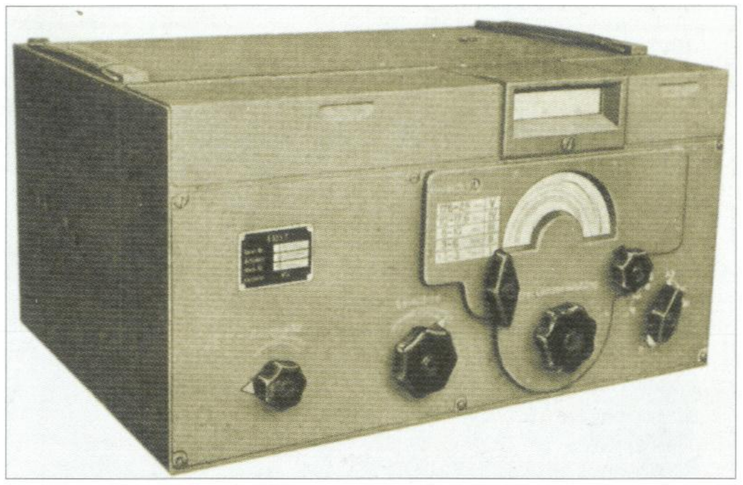


all pictures on both pages Alois Veselý archive

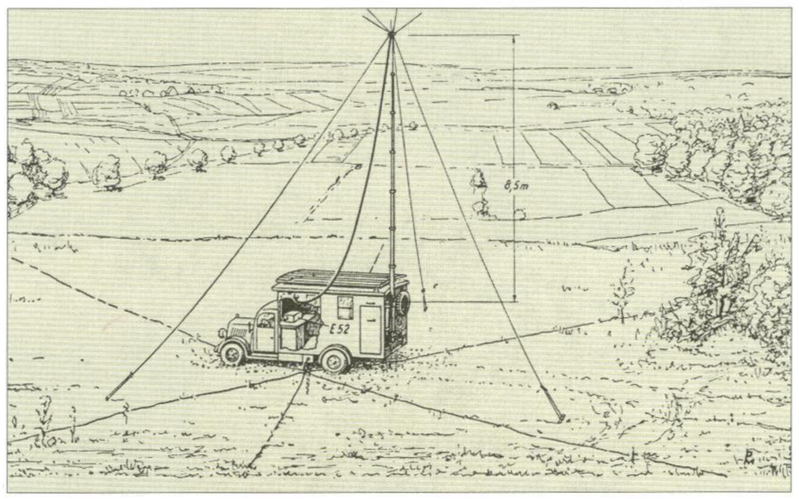
left top the Lo 1 UK 35 set, used for communication between a dinghy launched from a submarine and the mother ship during the dinghy's stay on surface. Left - the 5 W.S. transmitter is of older version than the one depicted on p. 22, the main apparent difference is colouring.
Above Feldfu. h was one of the field portable radios, whose utilisation is apparent from a photo on p. 4.



The frequency spectrum was monitored from long through medium to short and ultra-short wave band. This page shows the special surveillance receivers, also known as peacock eye due to the look of its tuning dial, they have been designated Fu.H.E.a-b-c-d-e-f . There were 6 receivers with the 270i scale from 75 kHz to 300 MHz. Their size was 46 x 35 x 26 cm. MEFA IV. designated receiver was also used for the diversity receiving. Receiver with 180i scale was designated Fu.H.E.v.

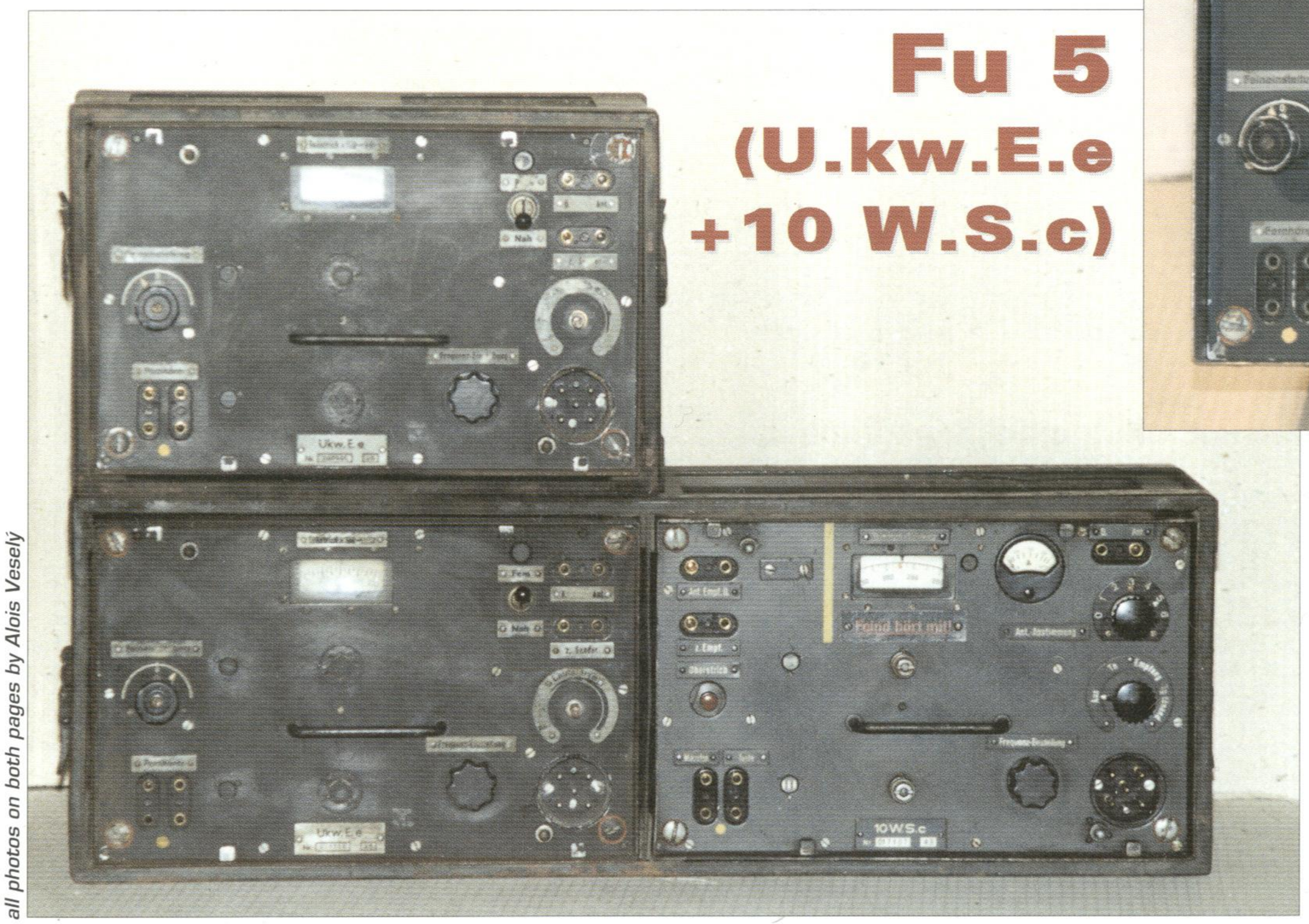


Three pictures above show the E 52, receiver whose technical features were 20 years ahead of the state of art.
German armed forces devoted a considerable attention to radio reconnaissance. Each communications regiment had a special listening (eavesdropping) group. Its equipment was listed in 1944/45 standard as a Fu 14.



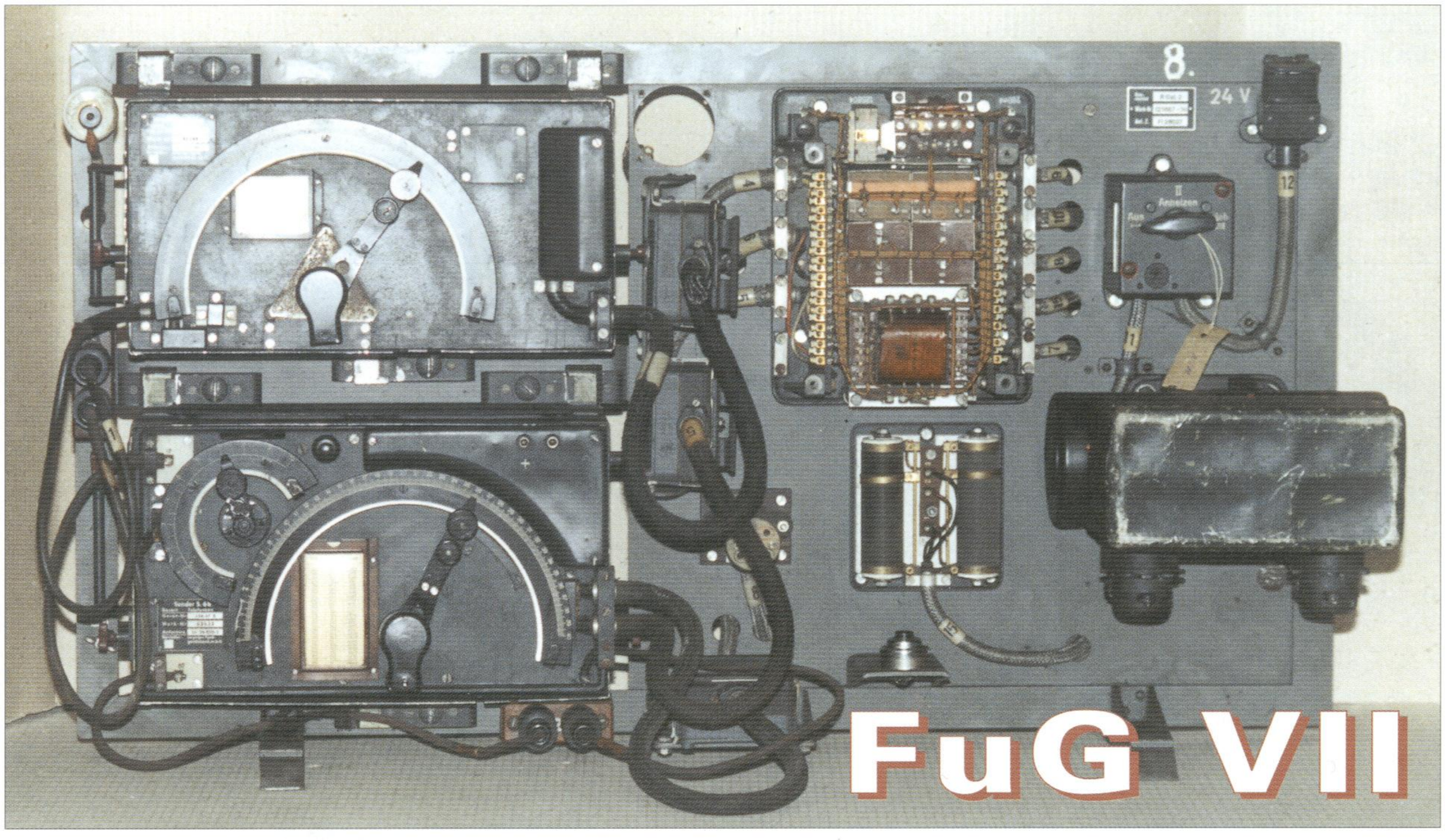
Fusprech of the a, d or f variants was placed in every AFV. Below Fu 5, a unified radio set for tanks, Ukw.E.e receiver, 10 W.S.c transmitter

U.kw.E.e

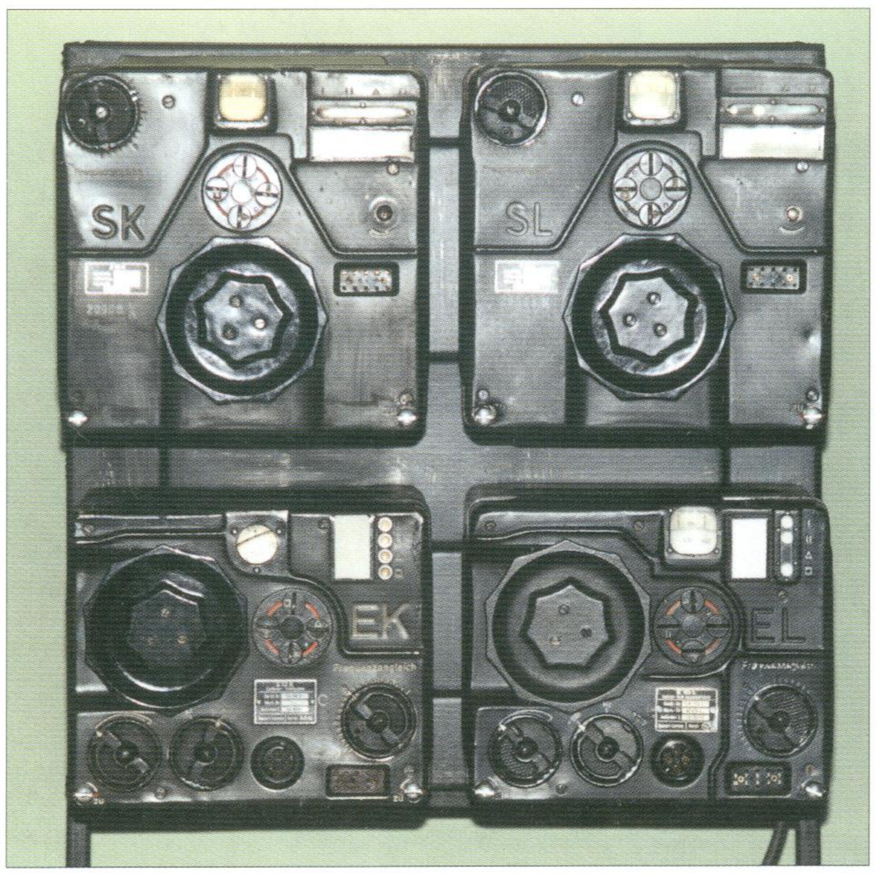


all photos on both pages by Alois Veselý

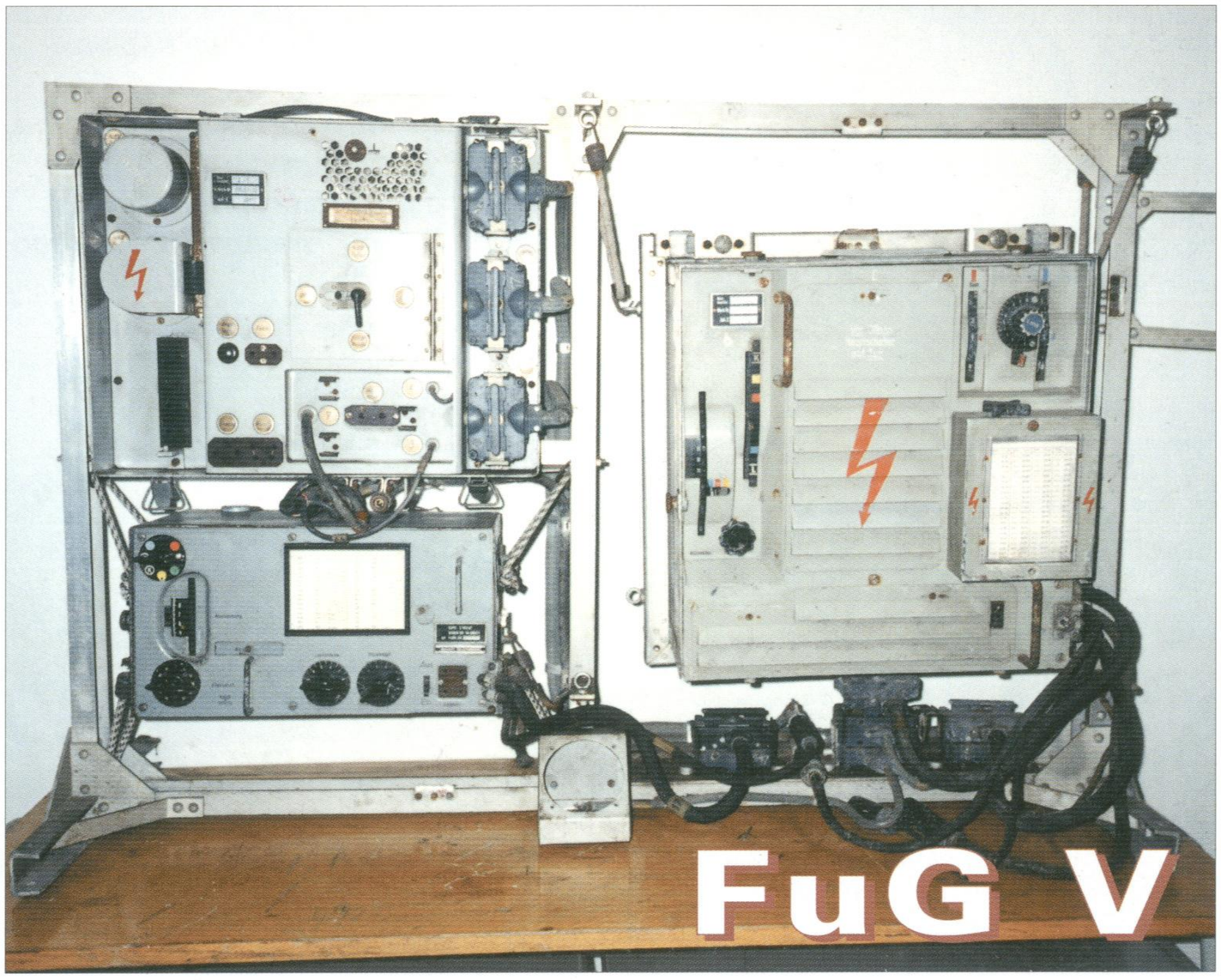
Right a FuG VII ground set for forward air control of Ju 87 Stuka and older Bf 109's - these aircraft had the same type of transceiver set on board.
Left under the unified FuG X aircraft set for bombers. It consisted of a SW EK 10 receiver, LW EL 10 receiver, SW SK 10 transmitter and a SL 10 LW transmitter.

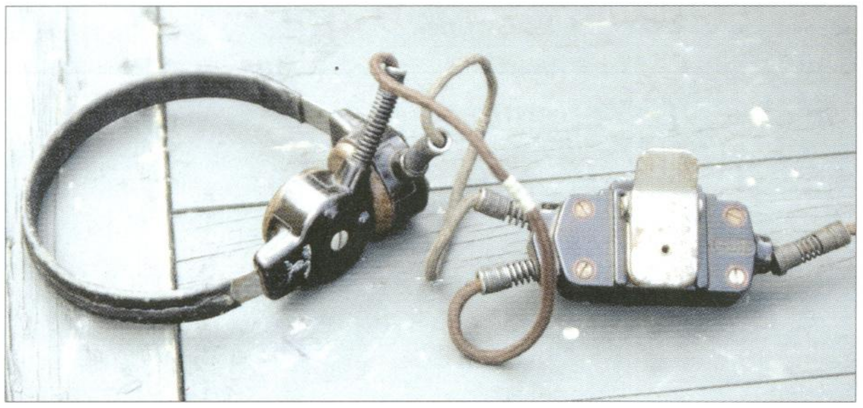


FuG X



Right FuG V aircraft set was also used by the Kriegsmarine.





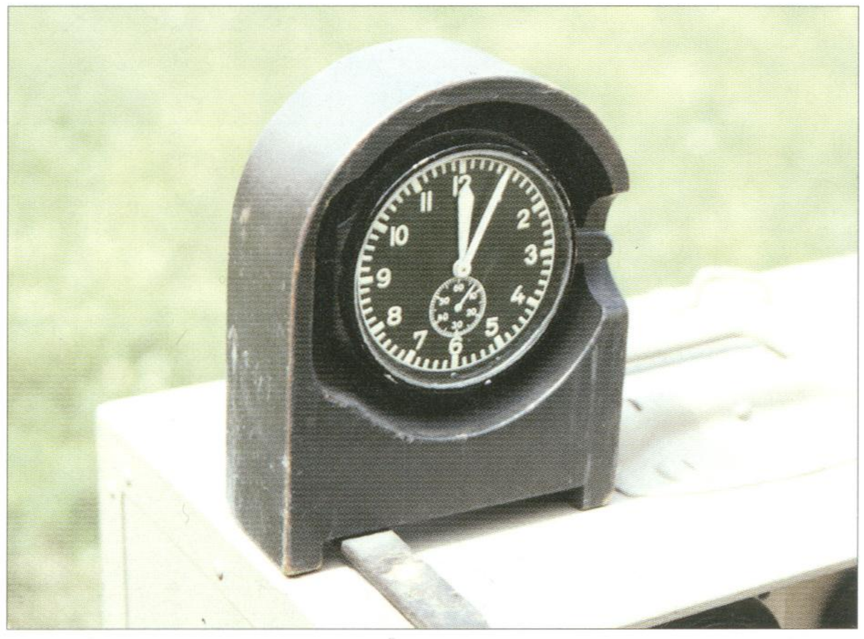
Top antenna and jumper cables.

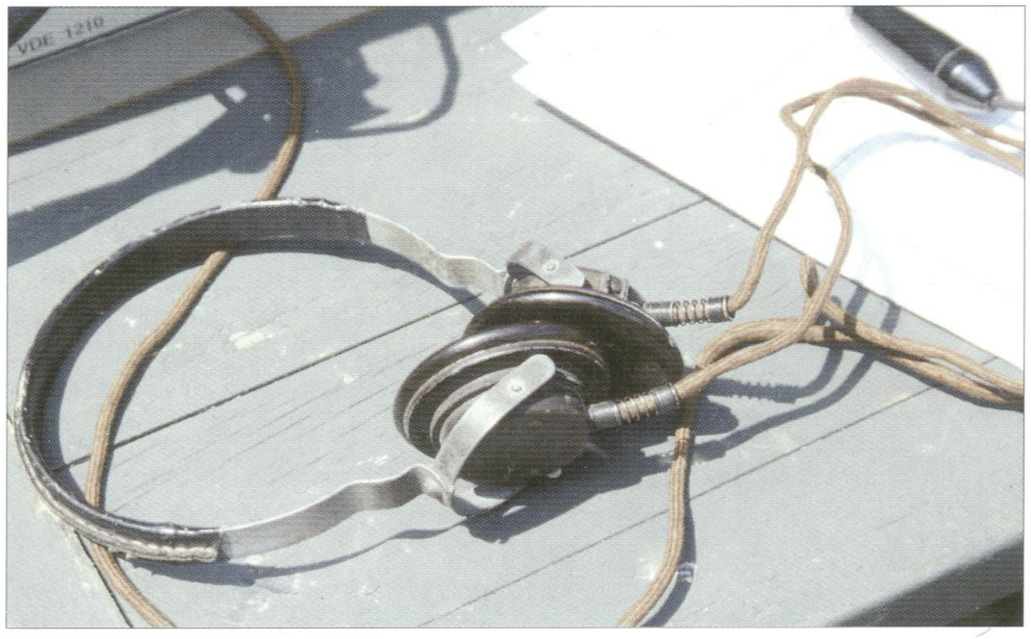
Top right Kmf.b throat microphone.

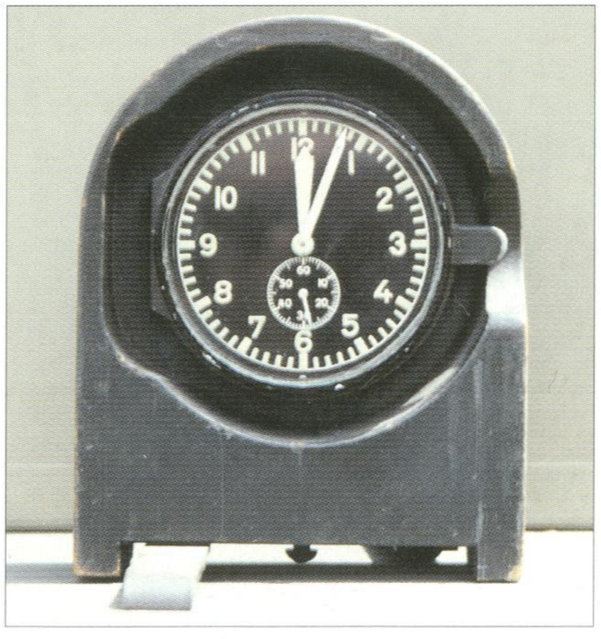
Left hand-held microphone with "Enemy listens" warning inscription.

Left under Dfh.a headphones.

Right station clock.







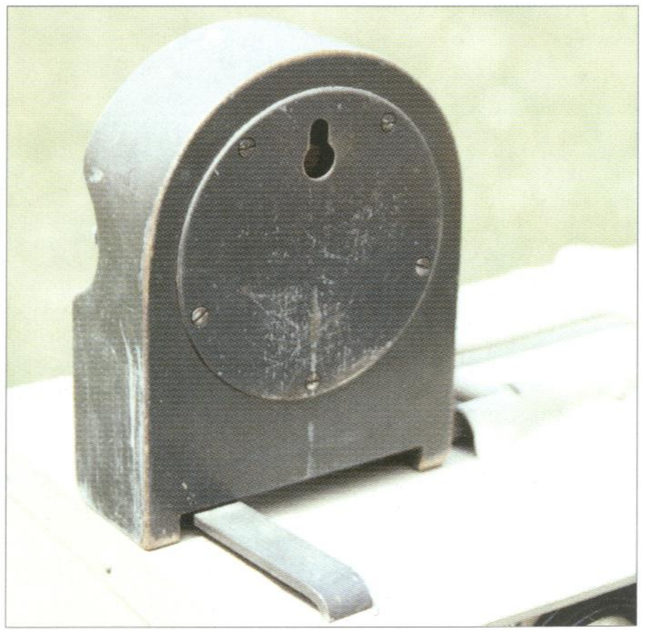
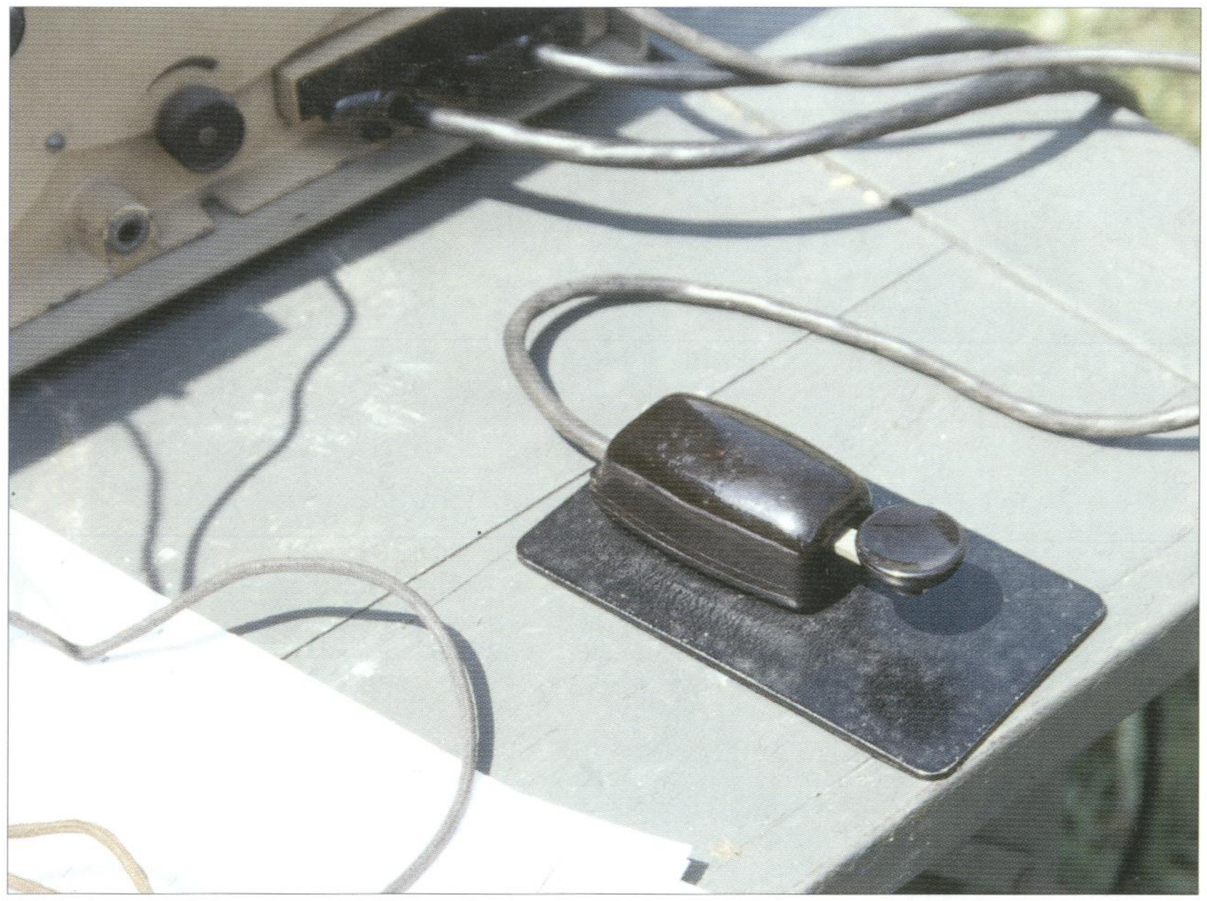


photo by Alois Veselý

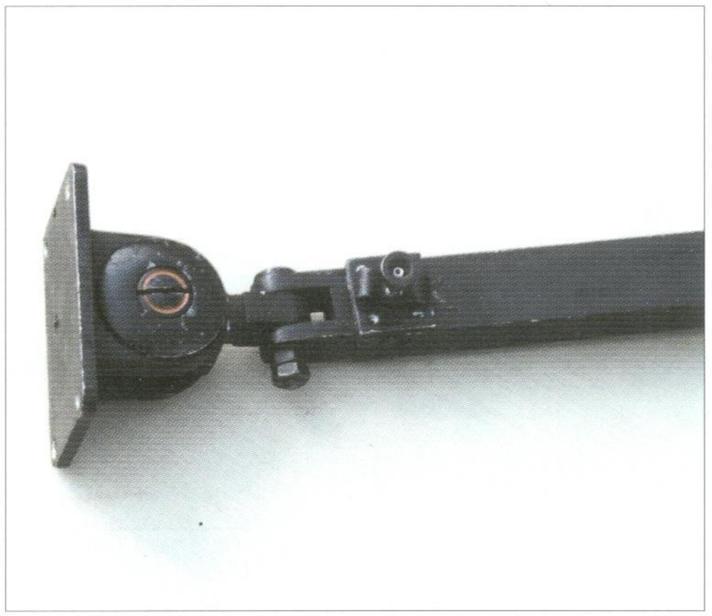


Left top sundry types of antenna winches and insulators.

Left a lumbar padding and webbing for field transport of receiver, transmitter and transceiver sets and accessories.

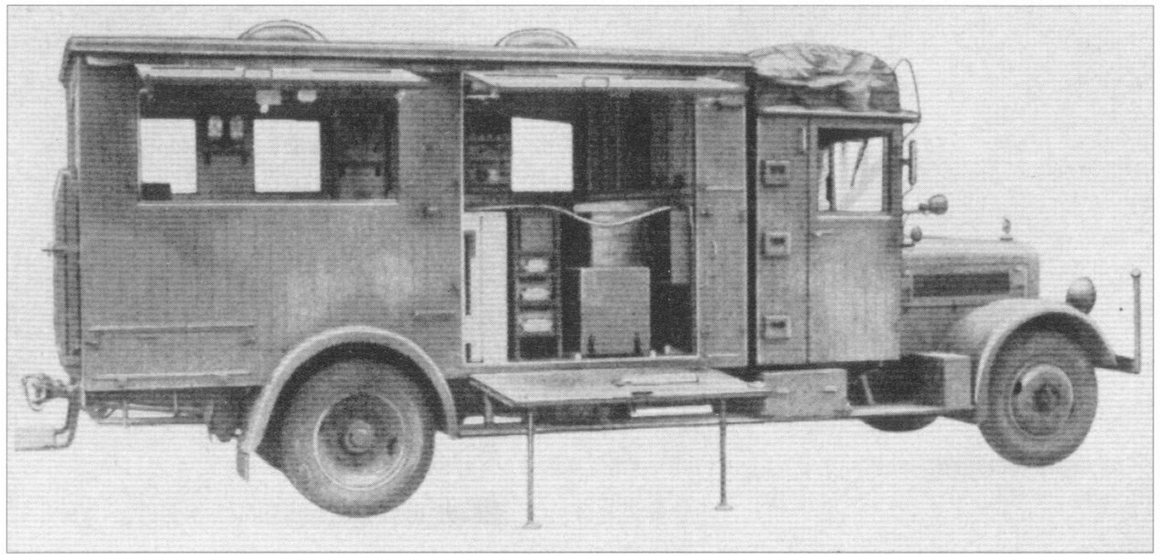
Left under a detail of lumbar pad.
Top right and bottom right the most often-used telegraph keys.

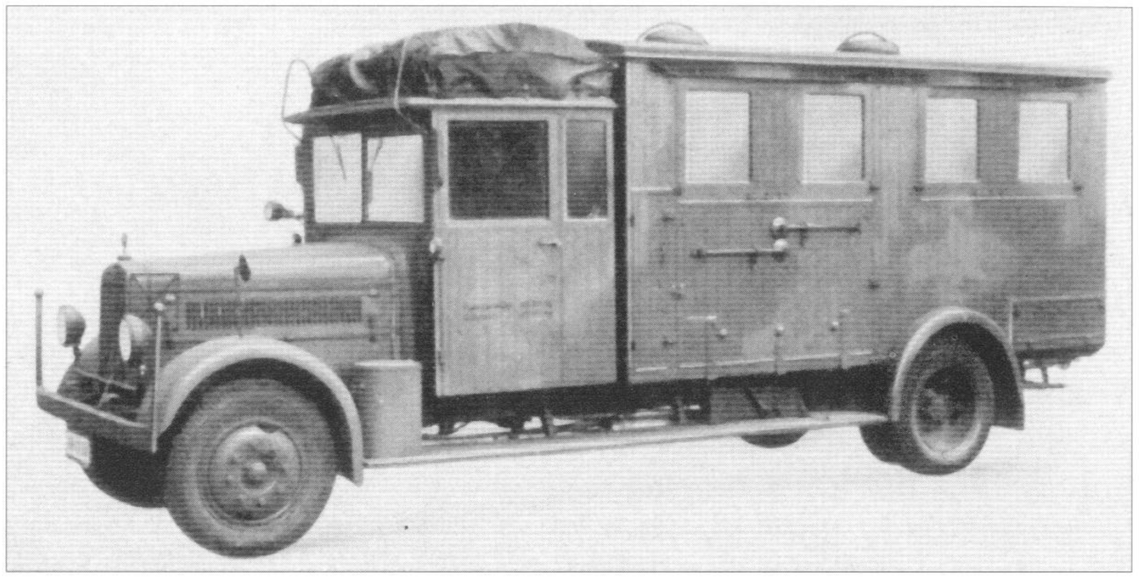
Lights Details



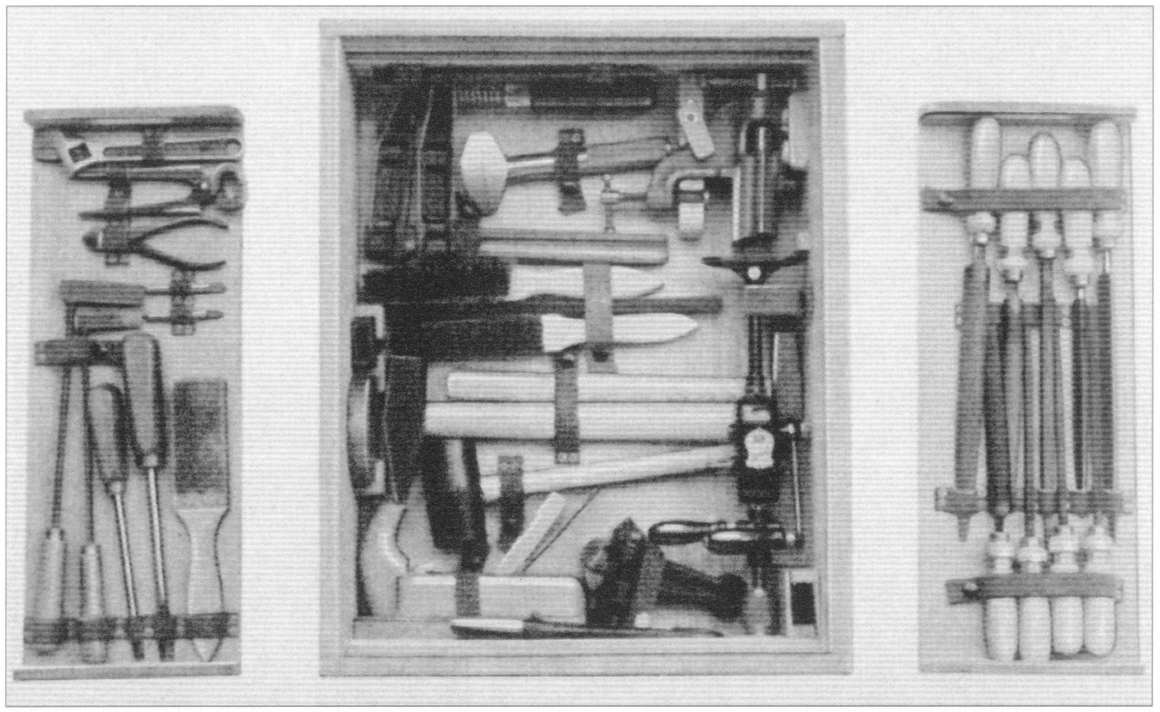
Various interior lights used in radio vans and aircraft.
They were for 12 and 24V according to the type of vehicle.

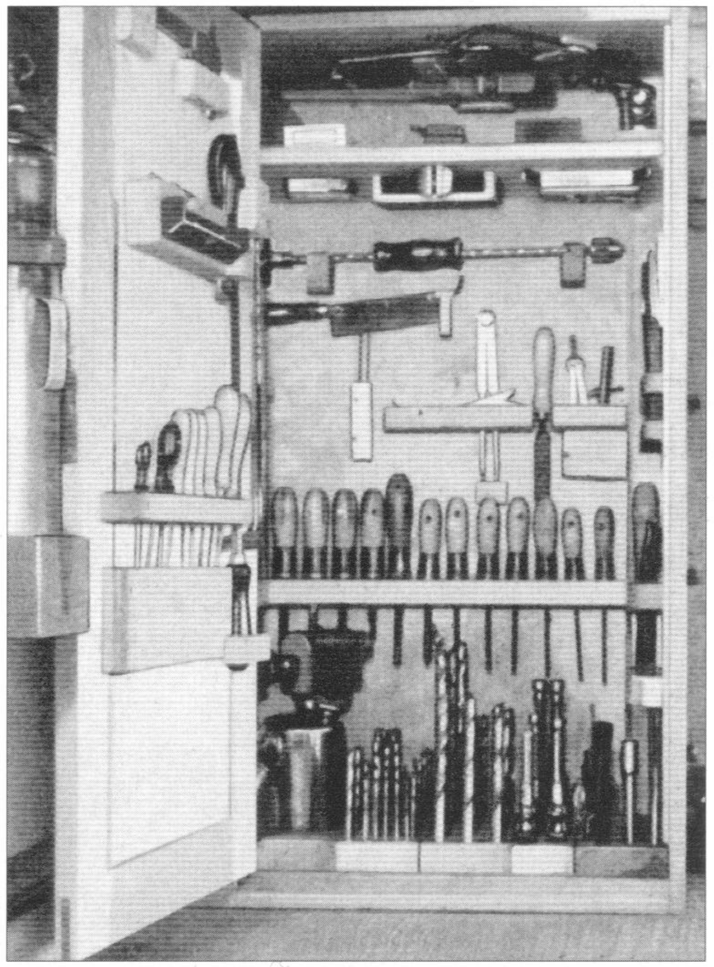
Kfz. 42

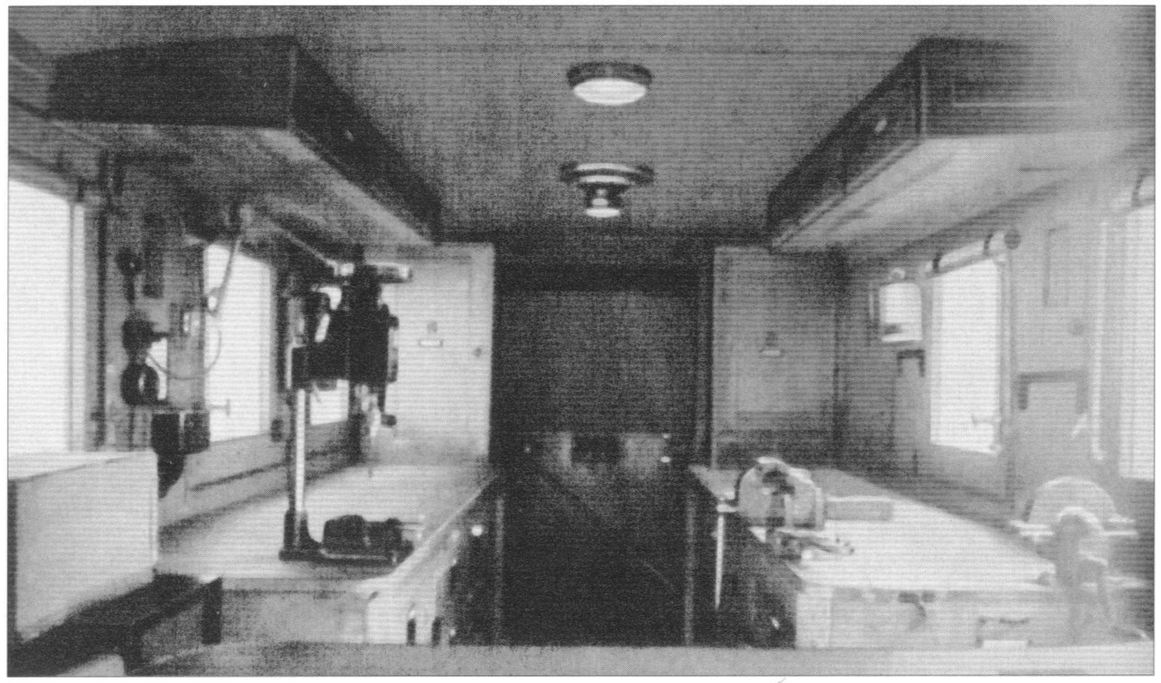


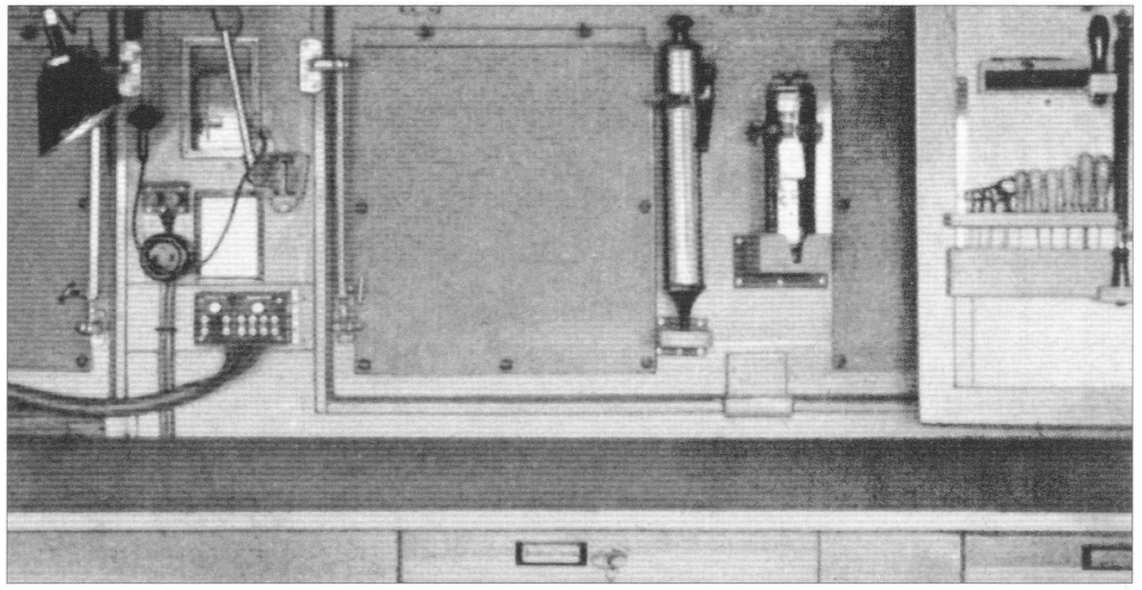


Radio workshop of a communications battalion. (continued from page 20)

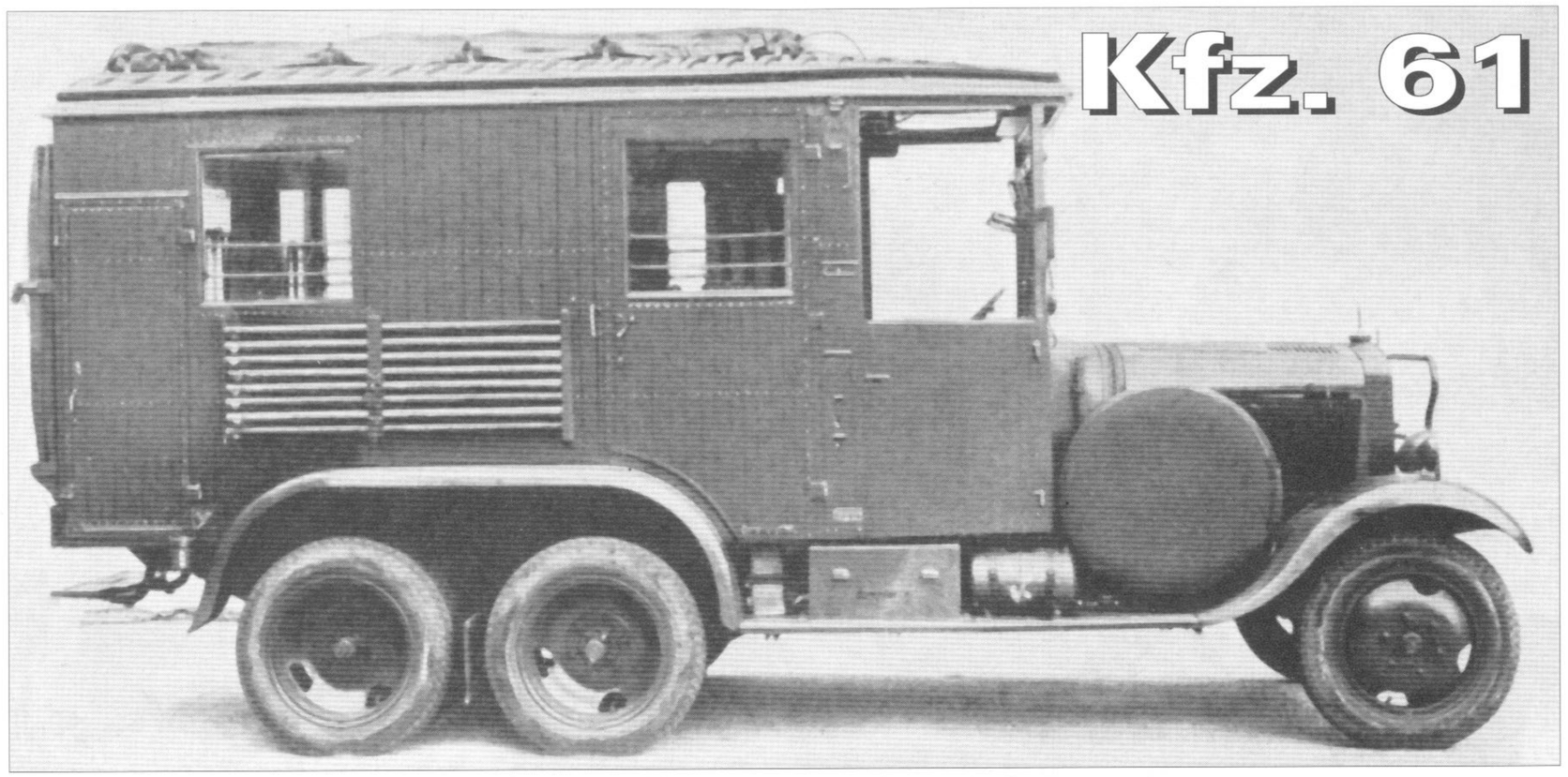


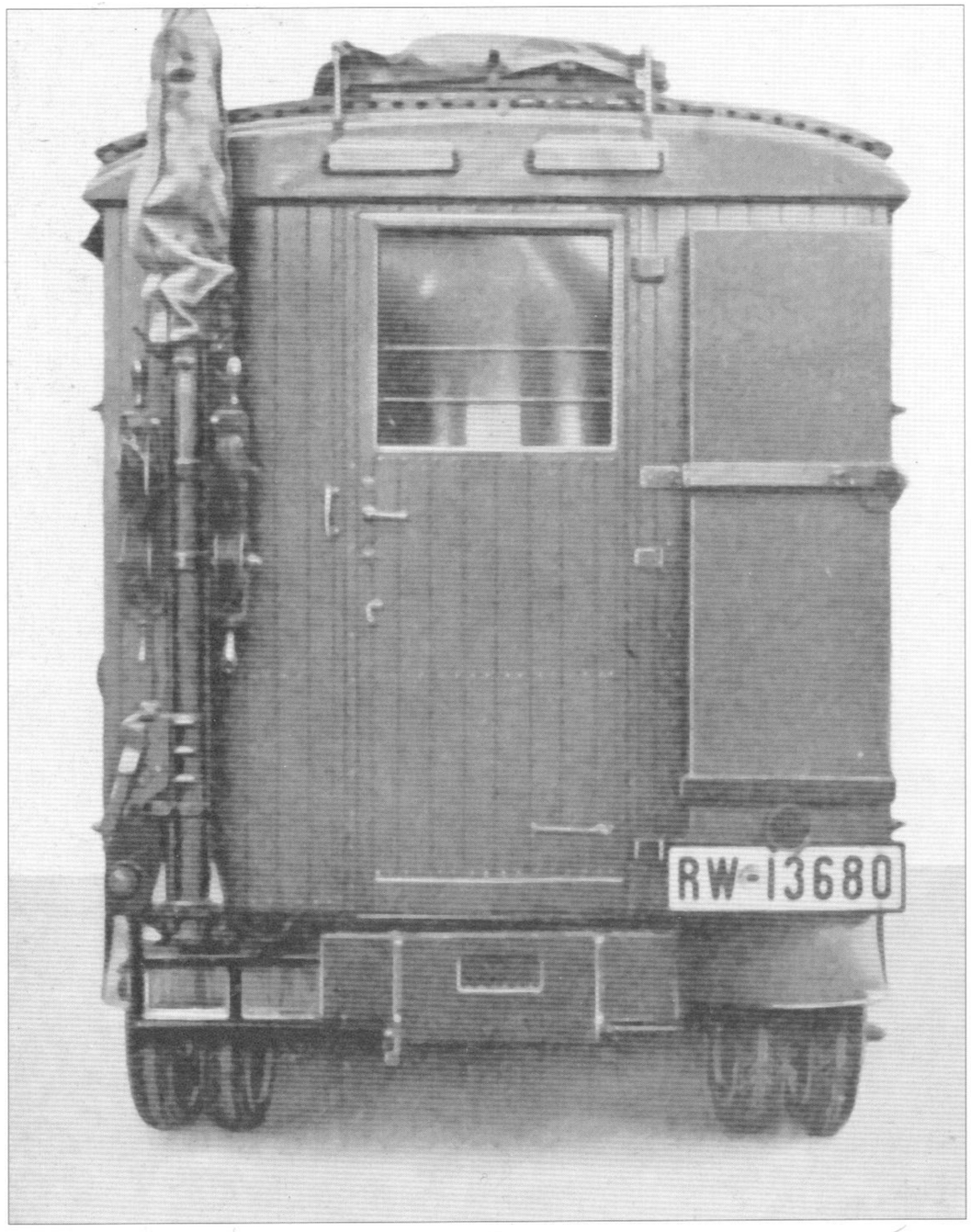


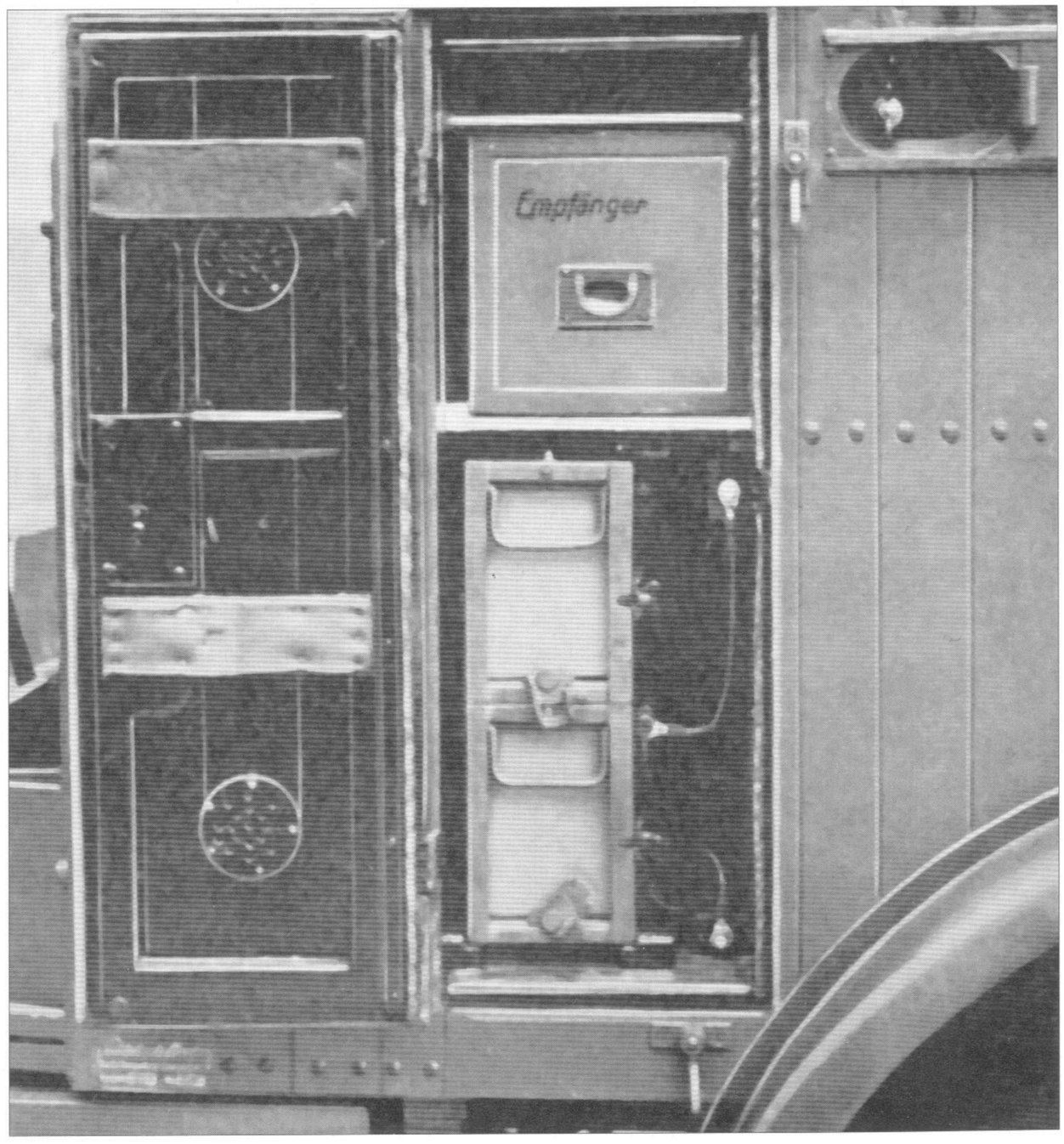


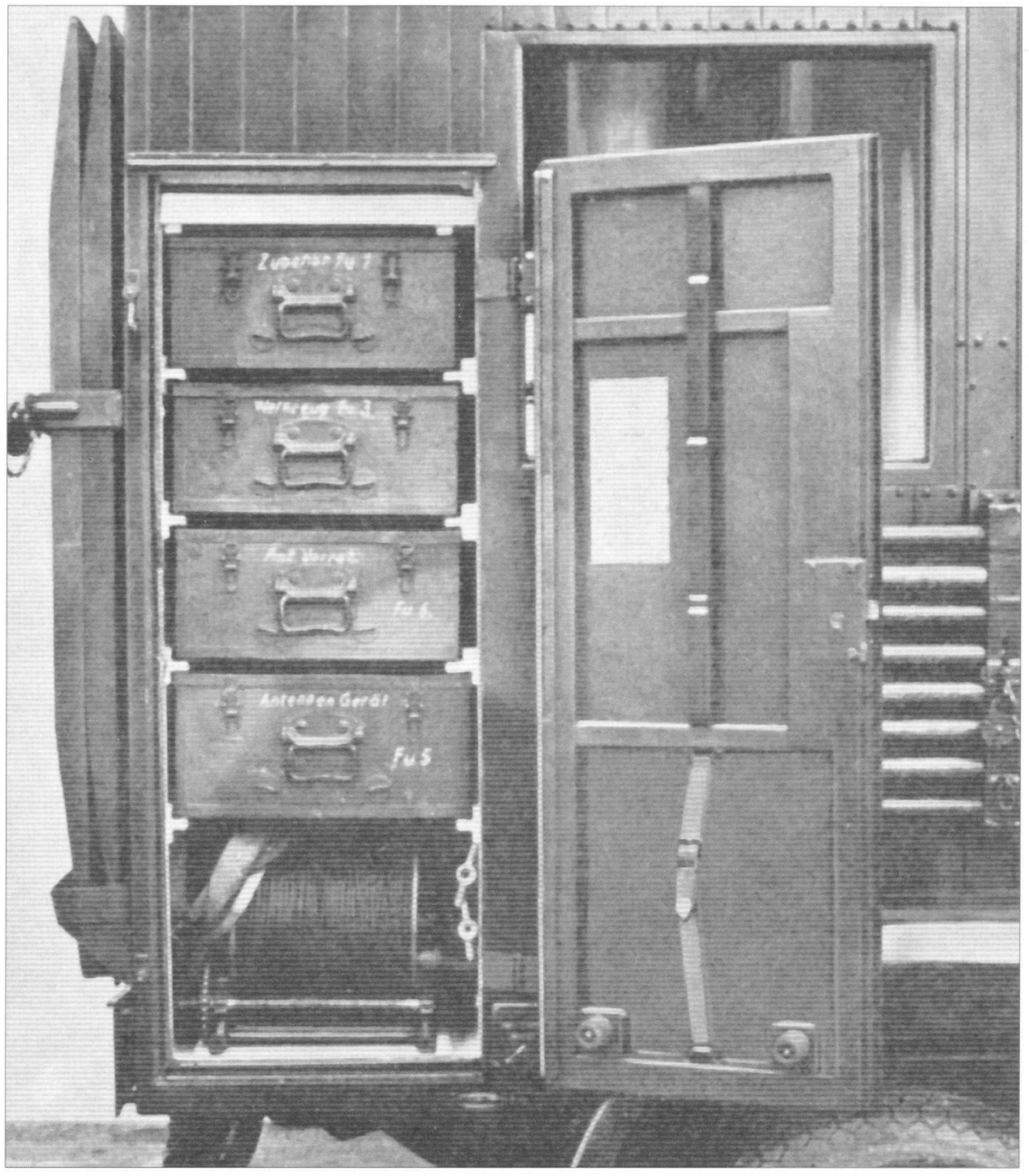


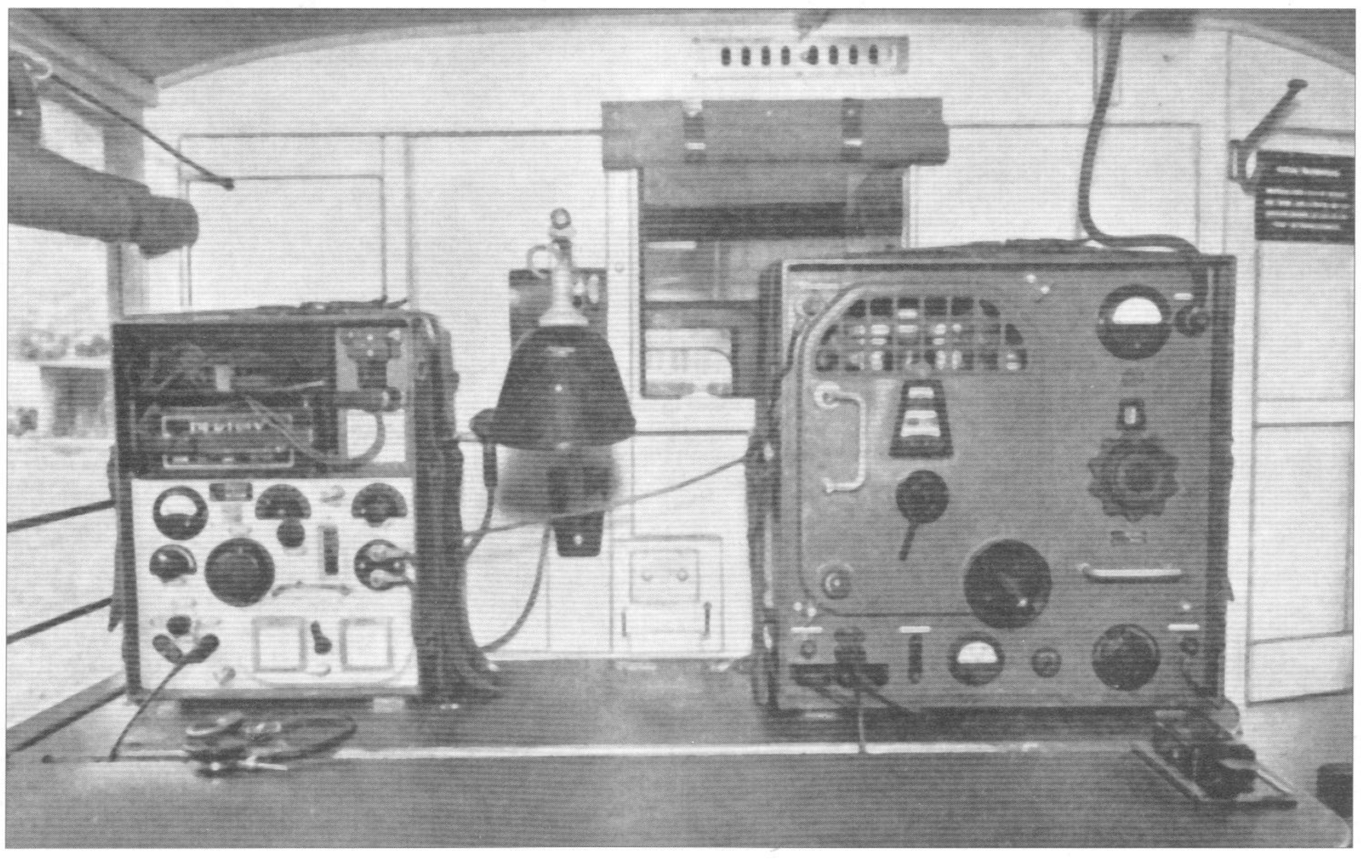
Kfz. 61 radio van with older-standard Fu 11. Mostly these vehicles were modified for use with communications units. Mercedes-Benz G 3 and a BŁssing-NAG G 31, Magirus M 206 a Einheist–Diesel. Right bottom open side doors of the van box with well visible equipment compartments. Opposite page right above a view to interior of a van looking to the rear. A Fu 11 equipment to the rear. According to the standard of 1936. The other two photos show both rear side compartments open.

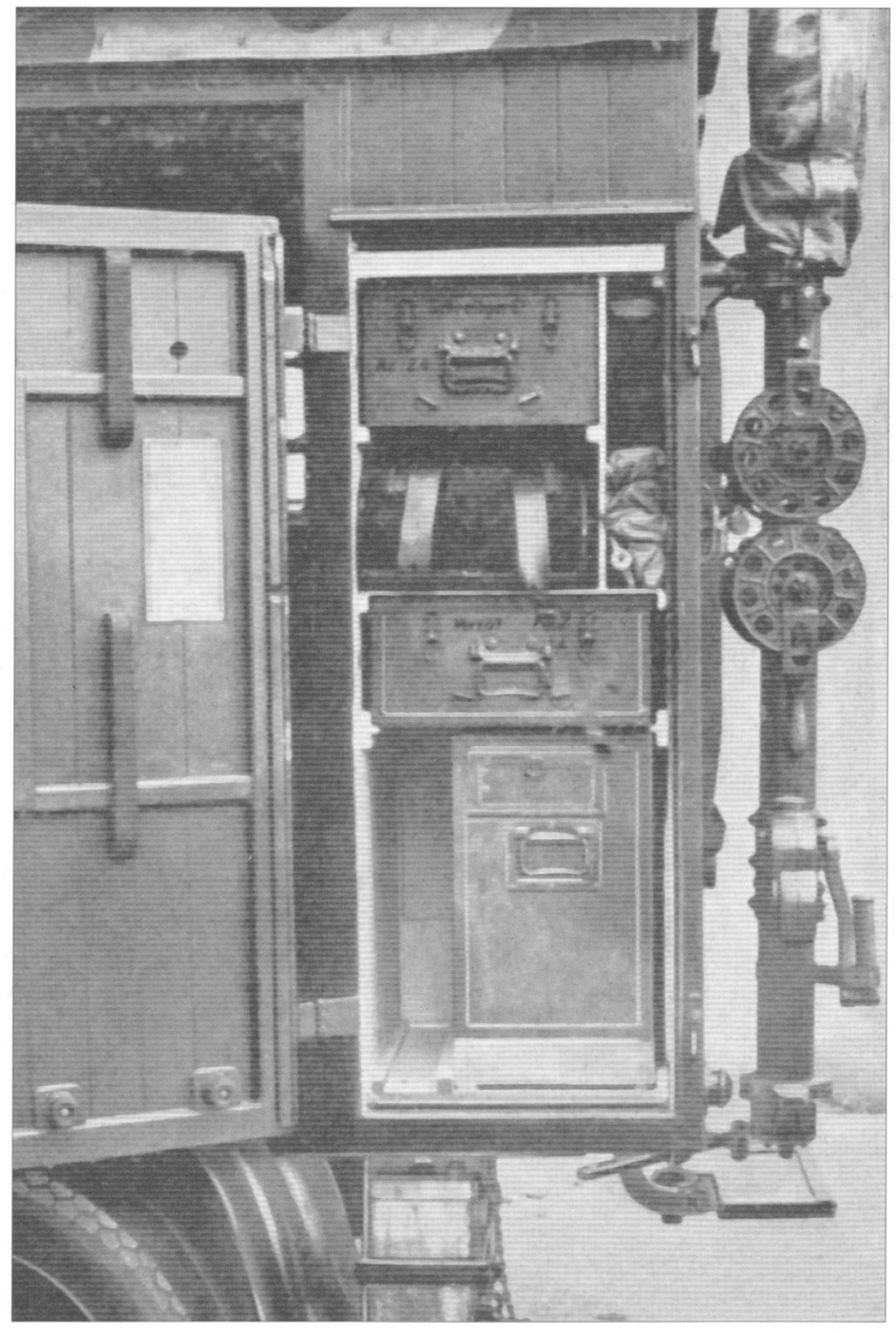




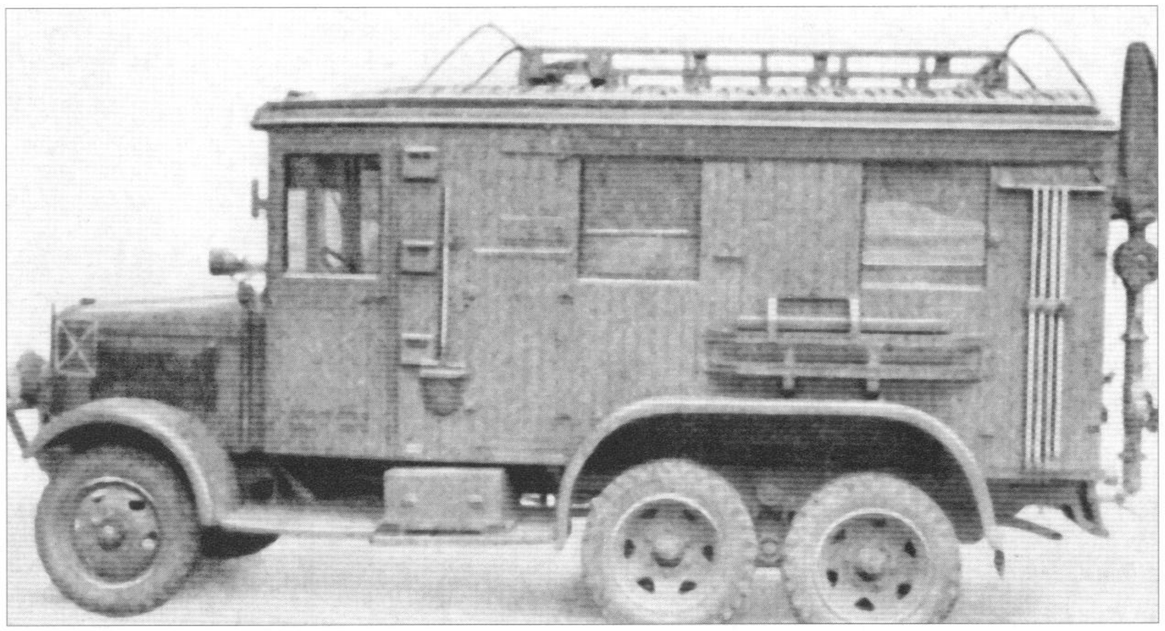


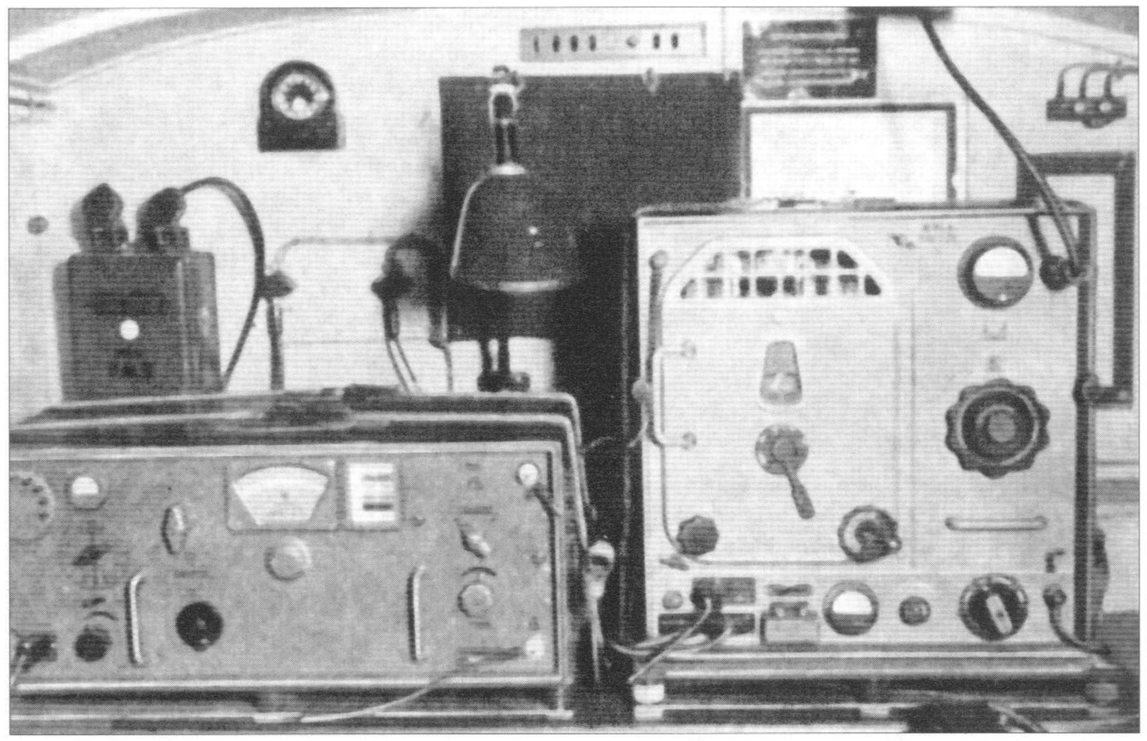

Zubehör Fu 7
Werkzeug Fu 7
Fu 6
Antennen Gerät
Fu 5

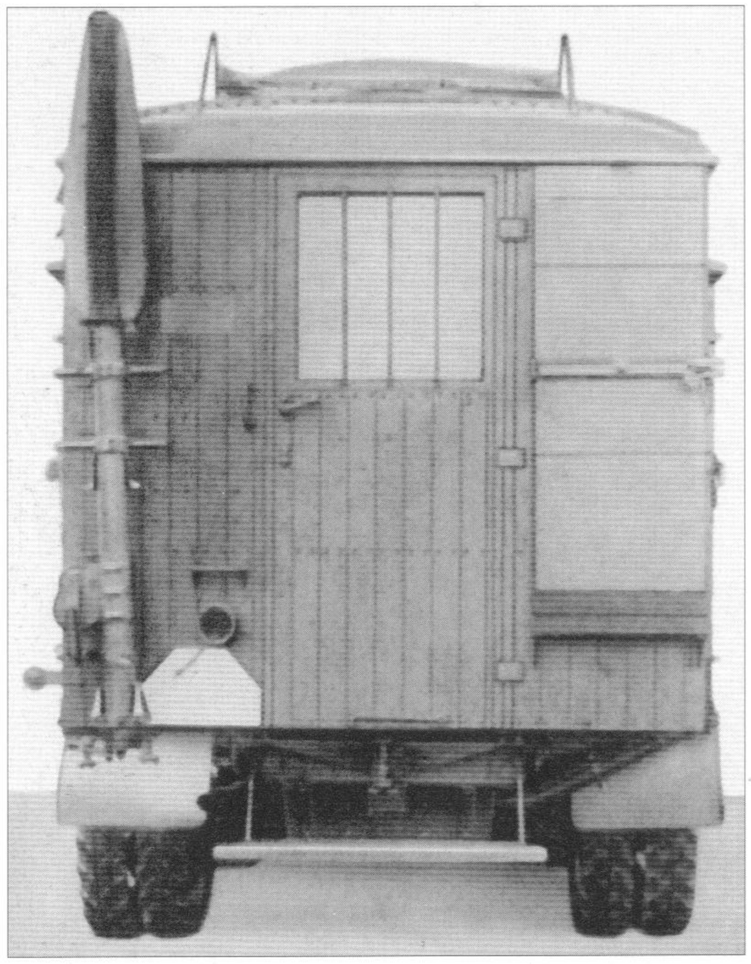


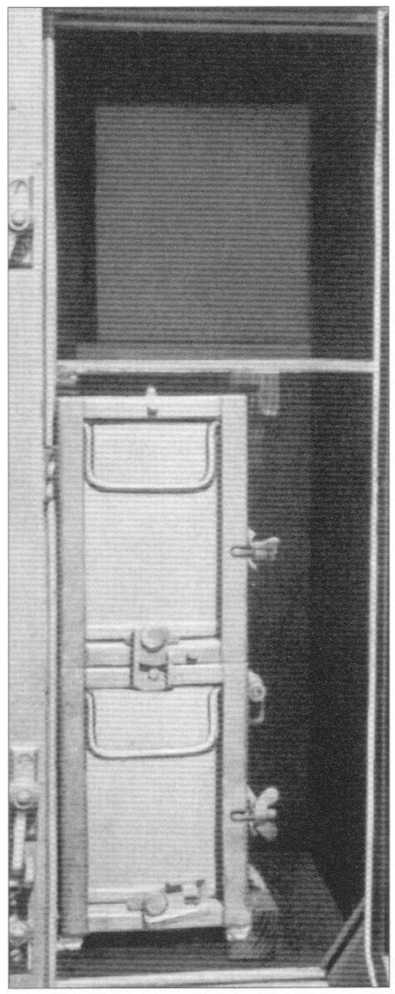


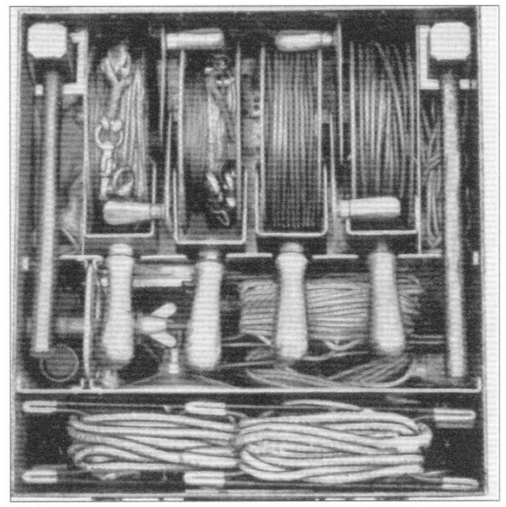
Bottom and right a radio van with 100 W.S. transmitter and Lw.E.a receiver.

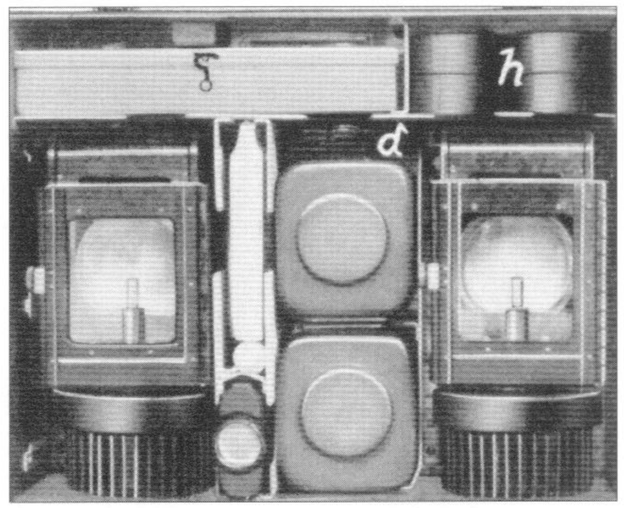




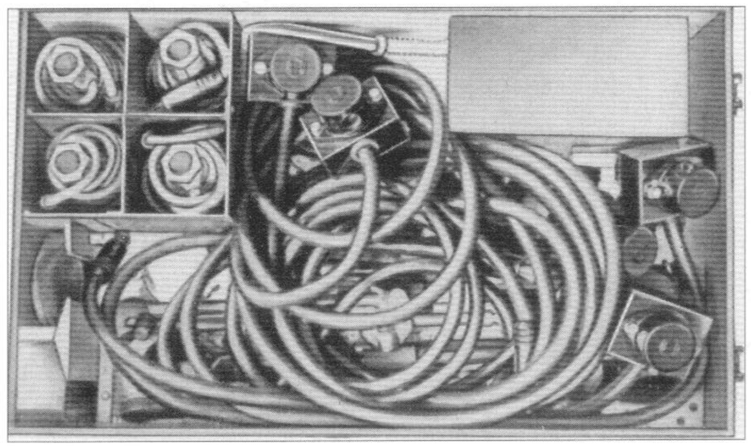


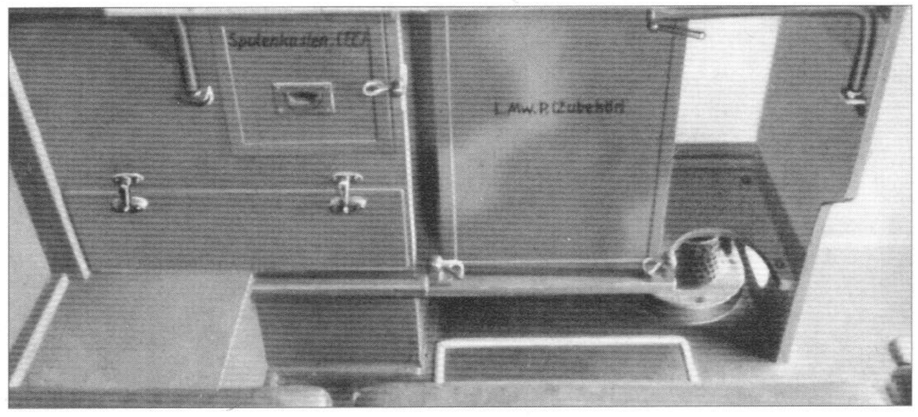


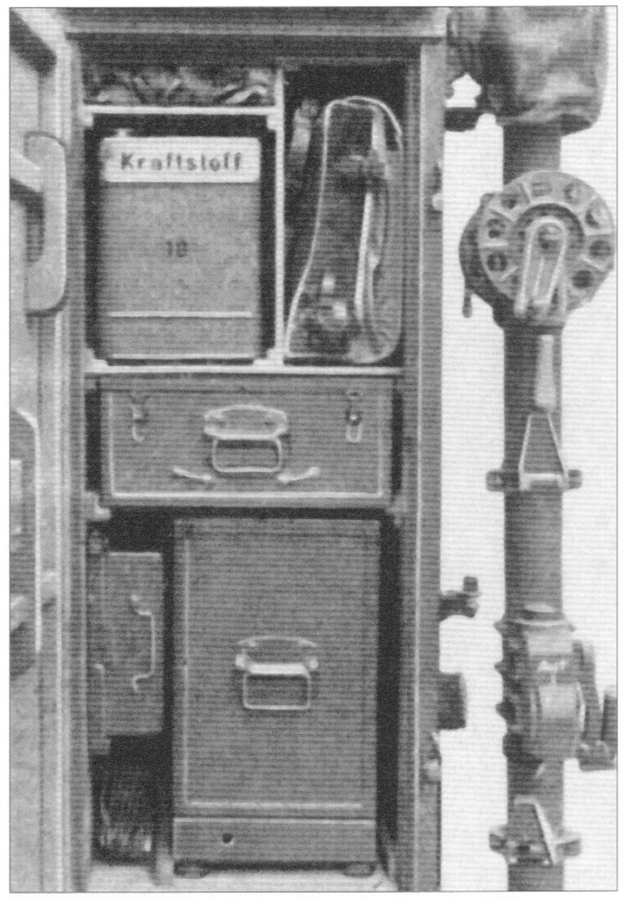




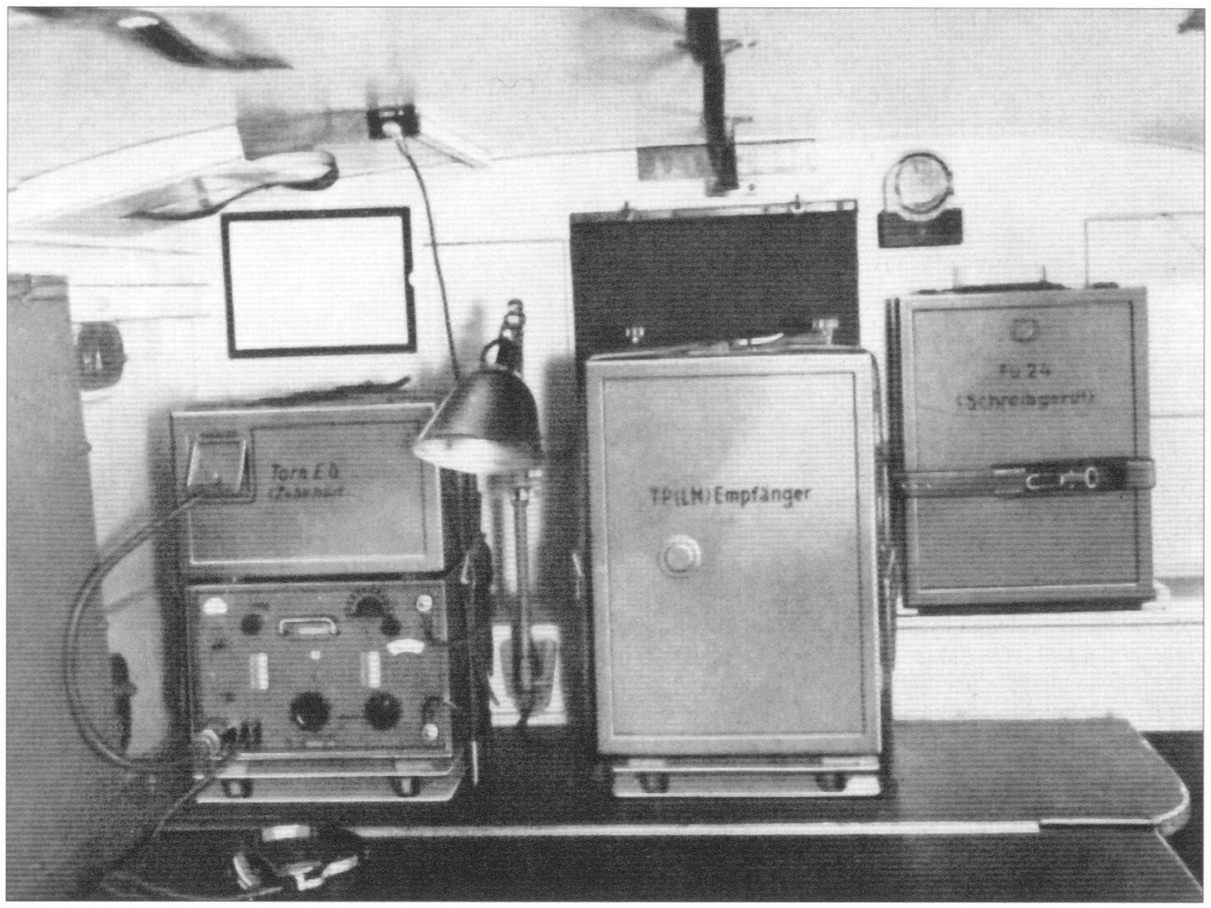
Pictures at the bottom of page show details of a radio van depicted on the opposite page. Above drawers with portable bobbins and two carbide lamps. Left bottom a drawer with jumpers, right a detail of a telescopic antennamast.

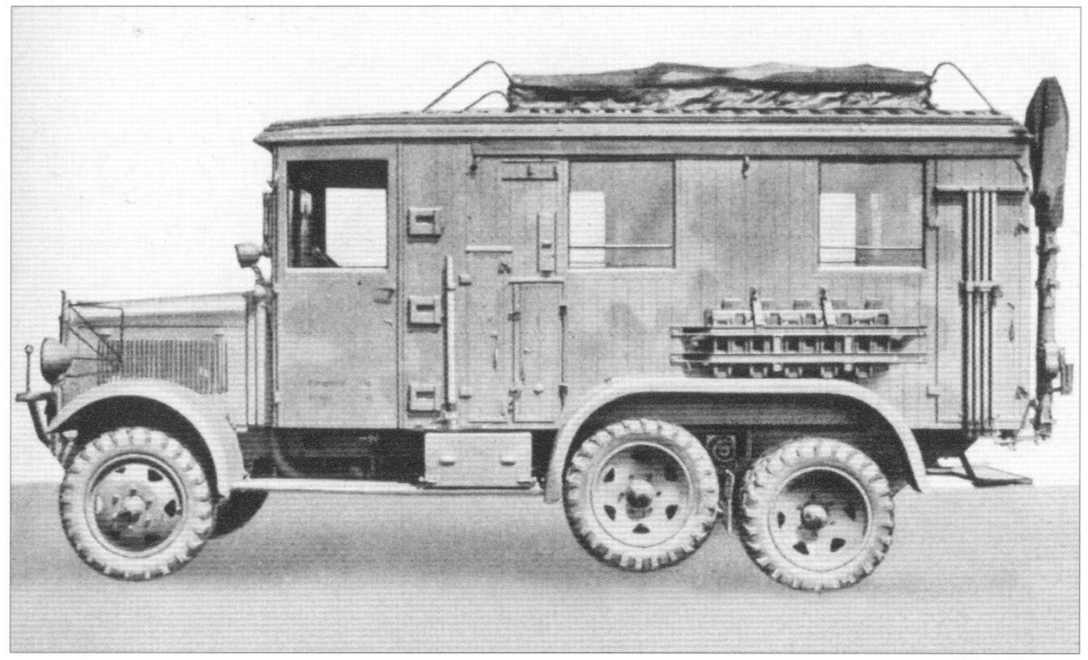




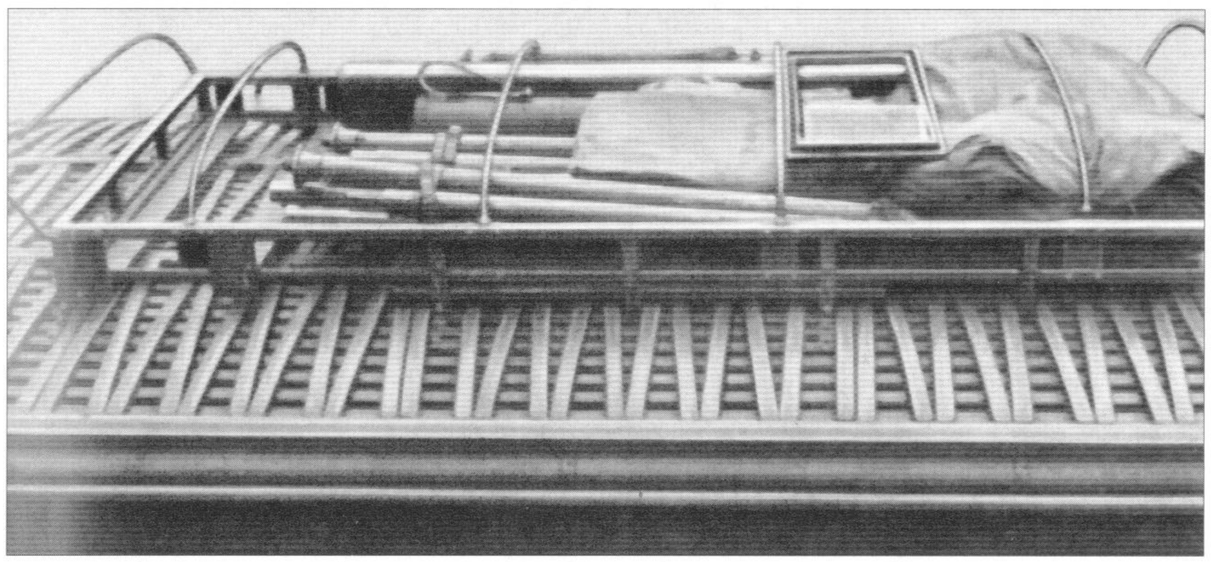


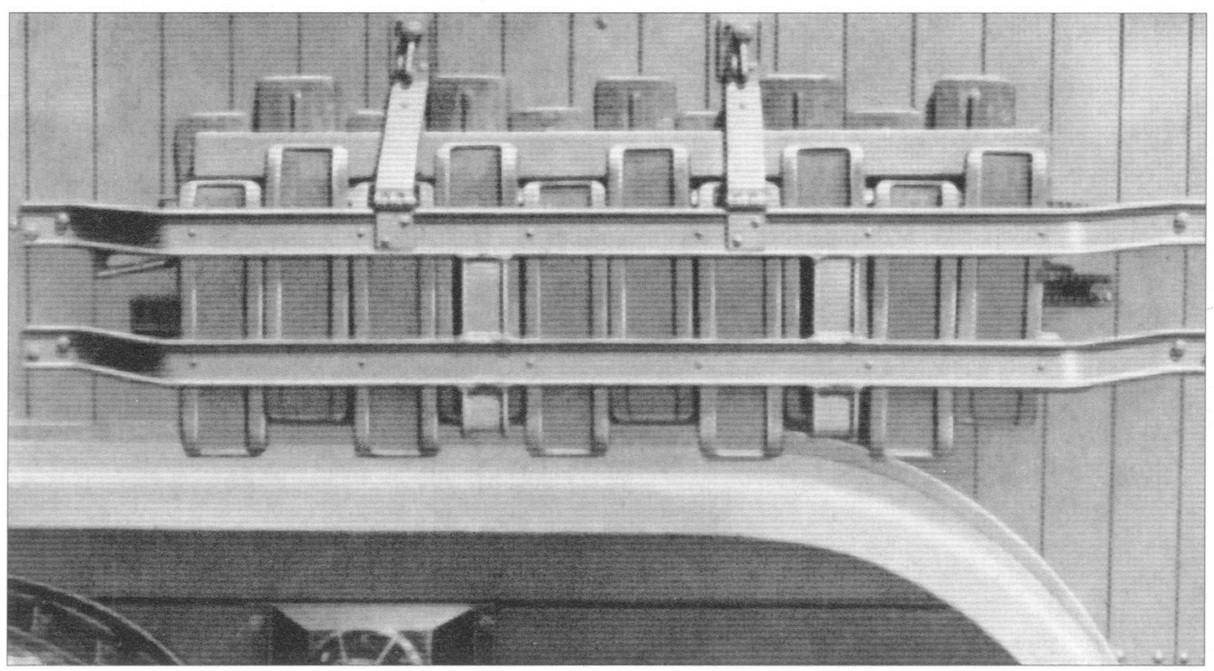
Kfz. 61

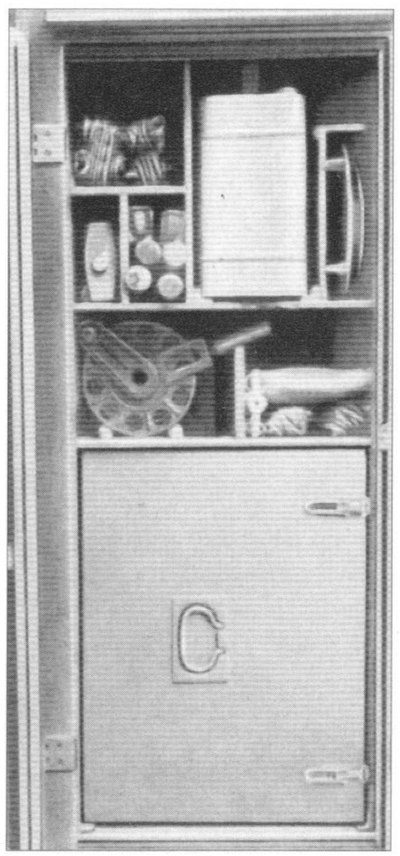


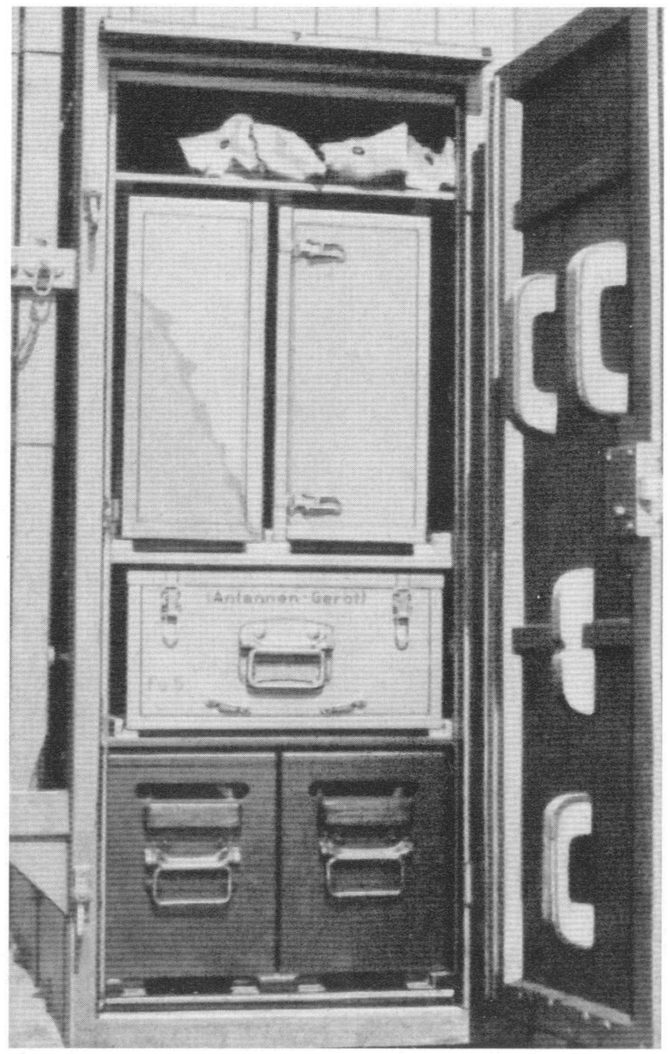


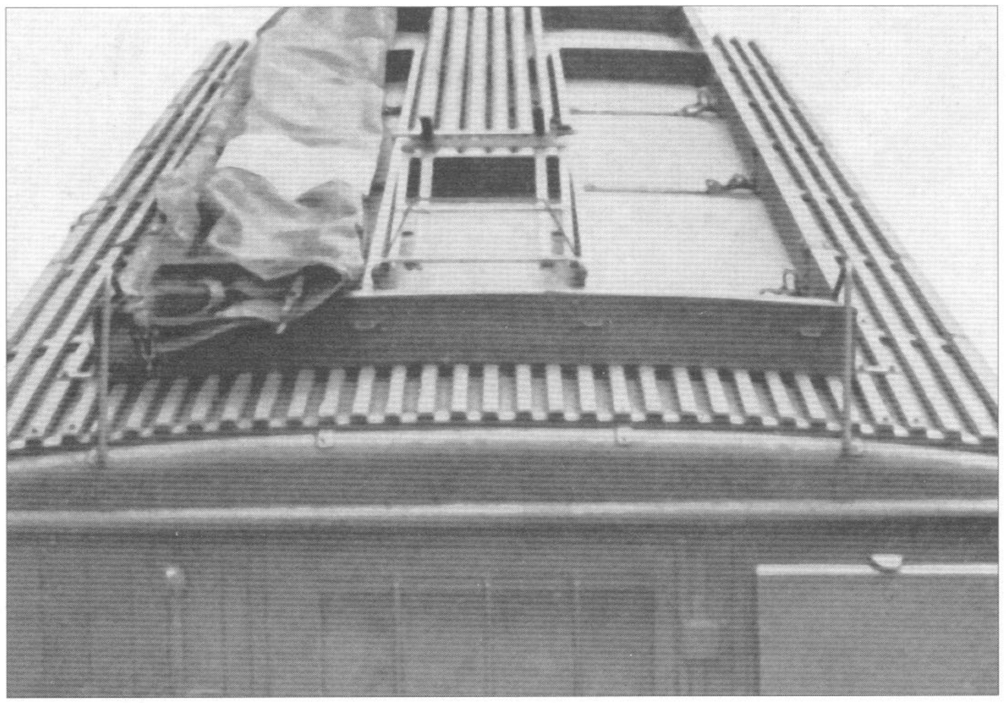
Top letf interior of the Kfz. 61 listening van. The same vehicles were used as those described on p. 46. Two pictures below show details of roof antenna and accessories for masts.

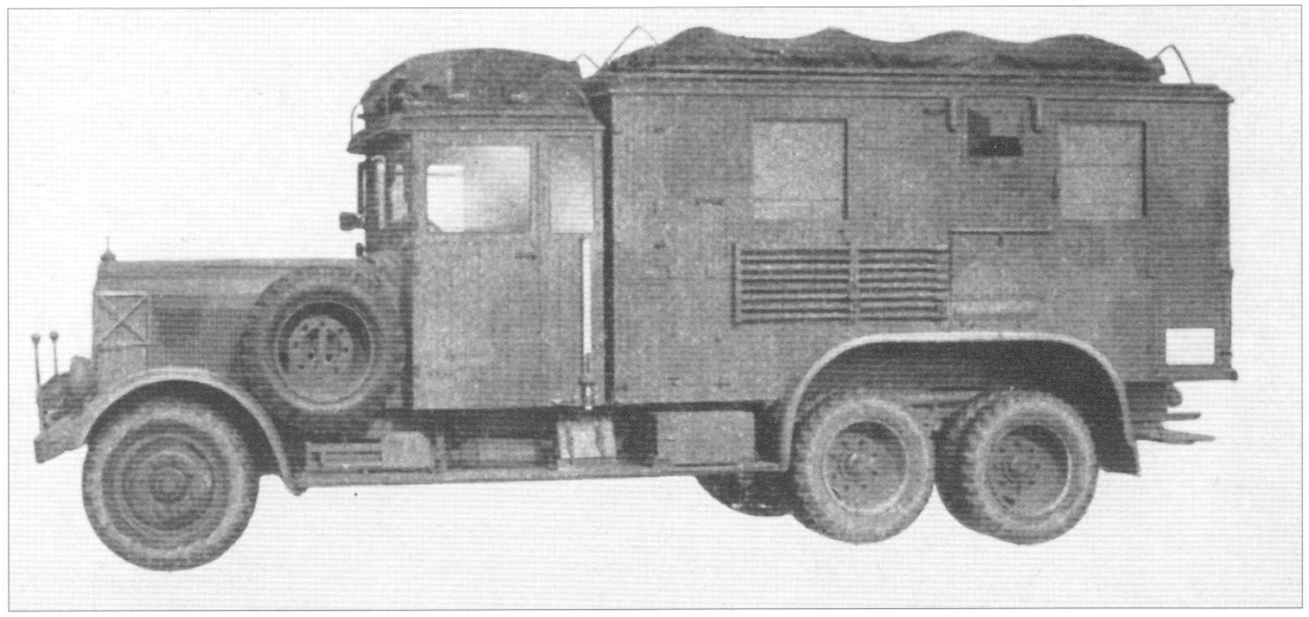




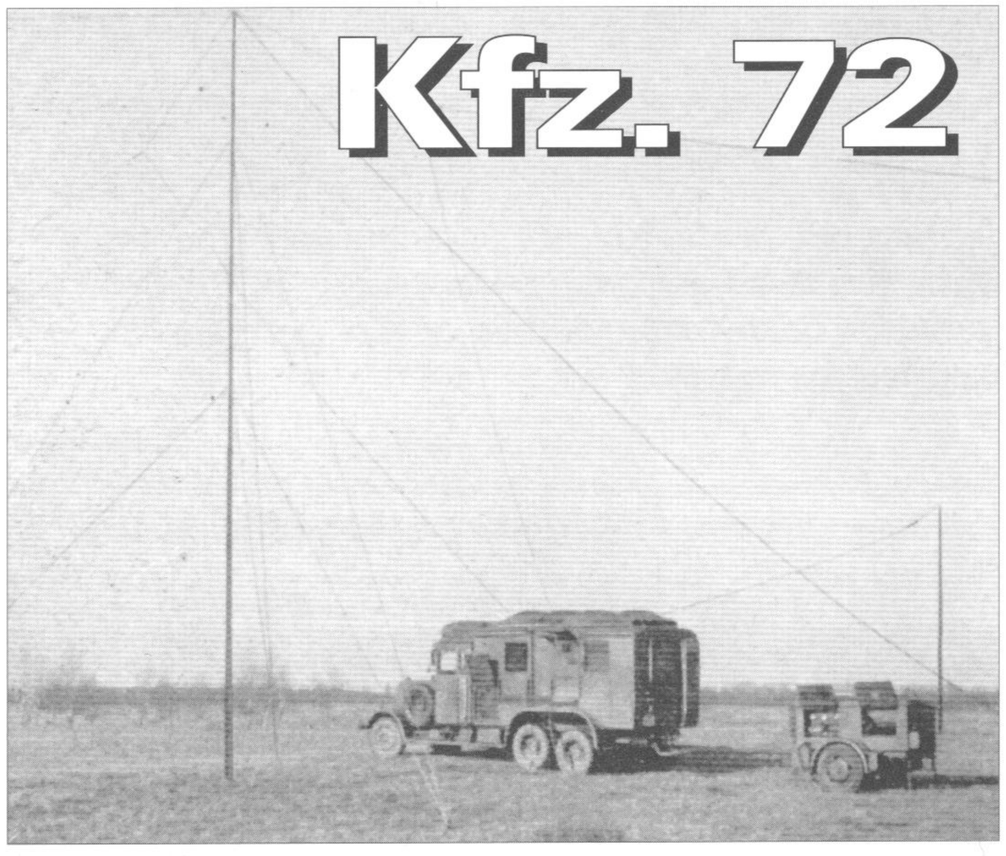




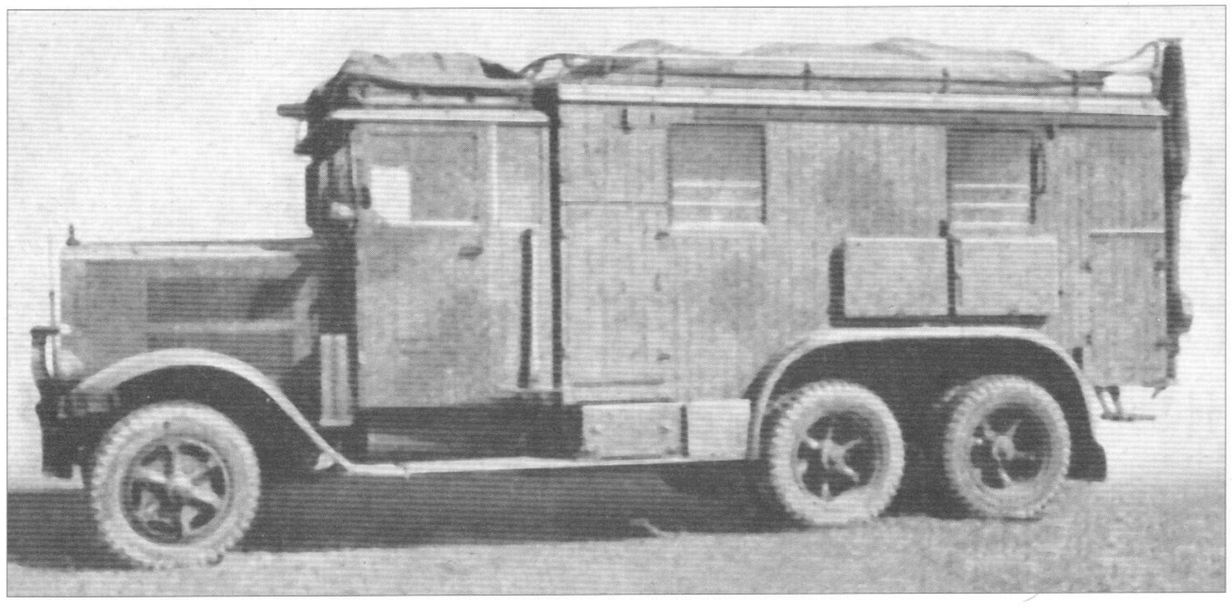


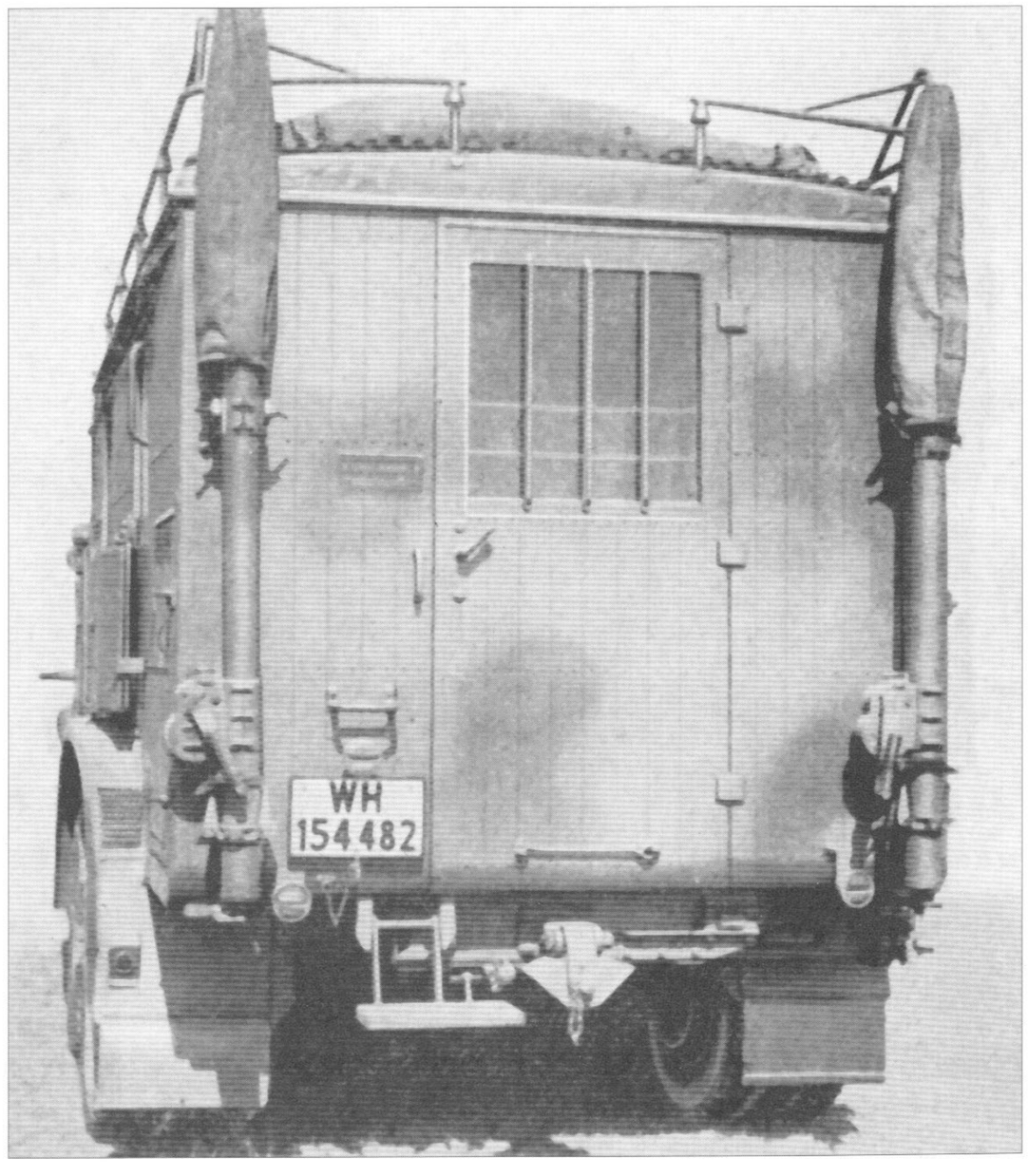


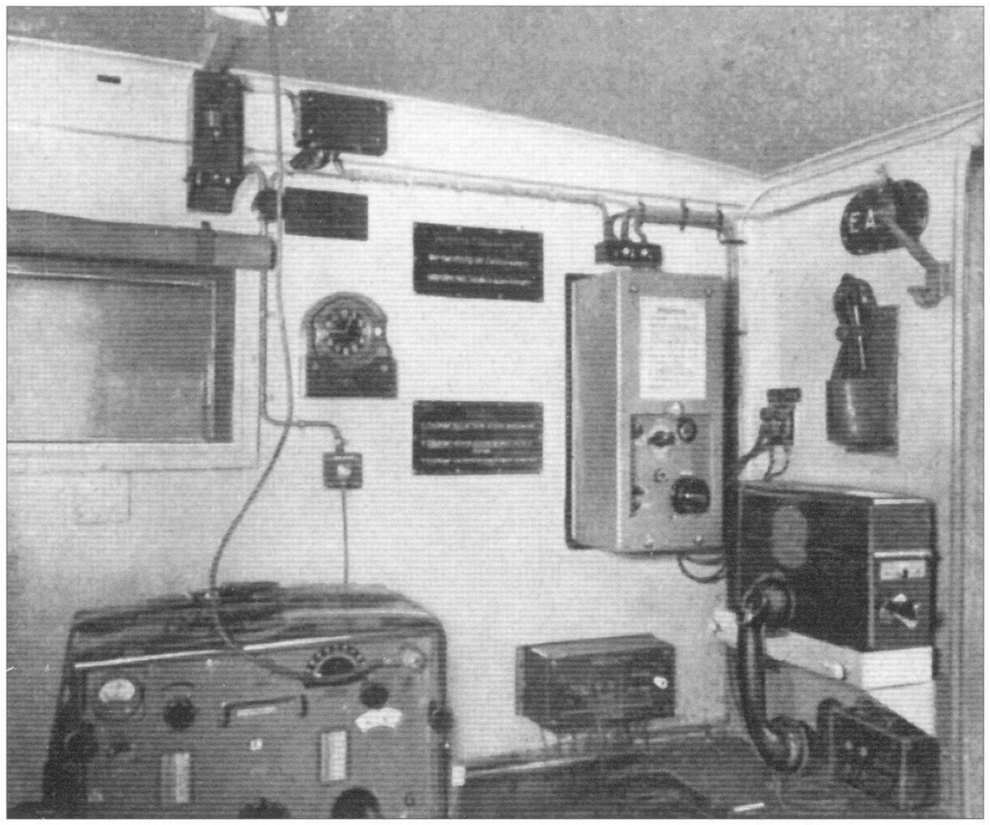
Kfz. 72

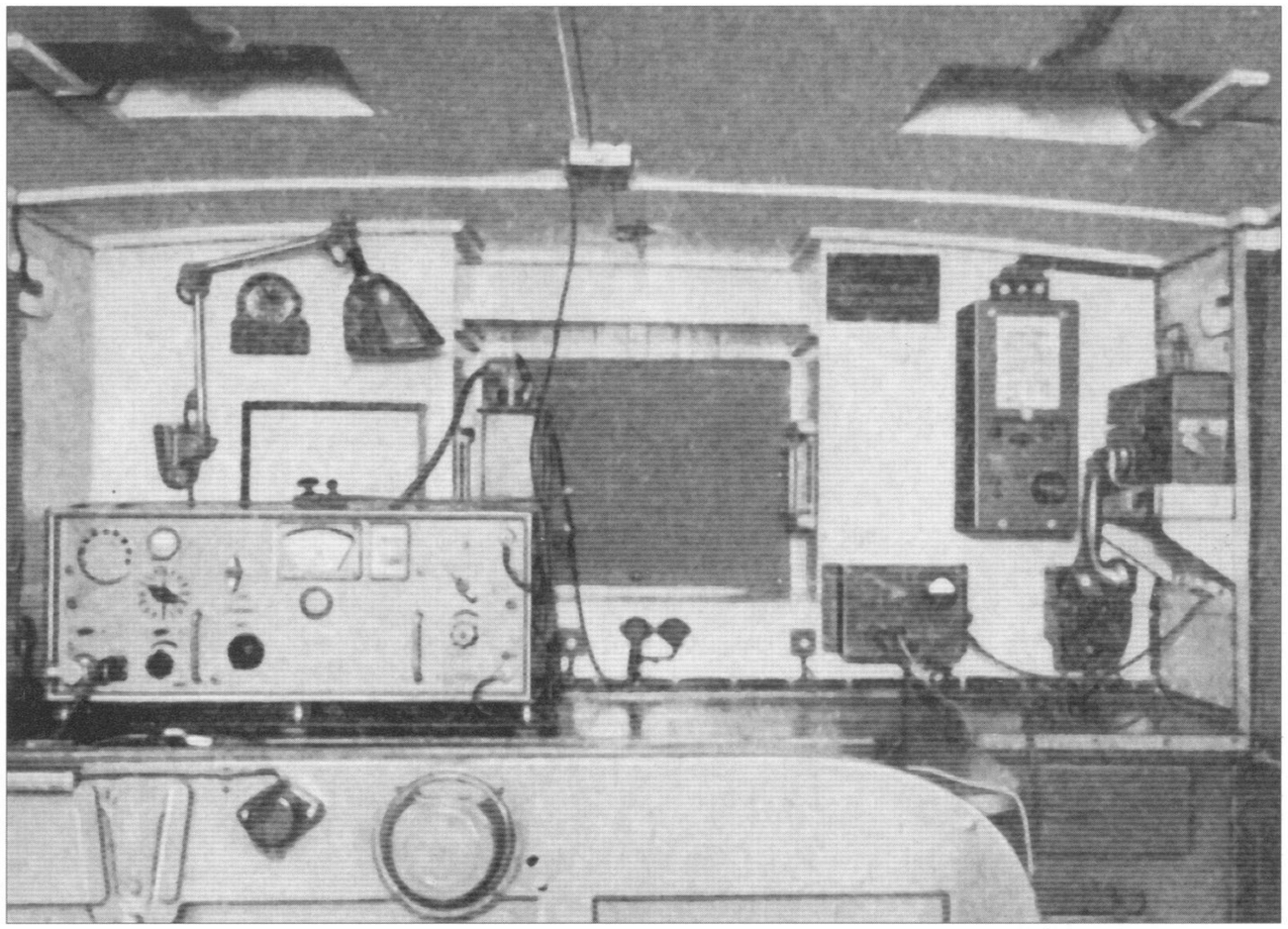


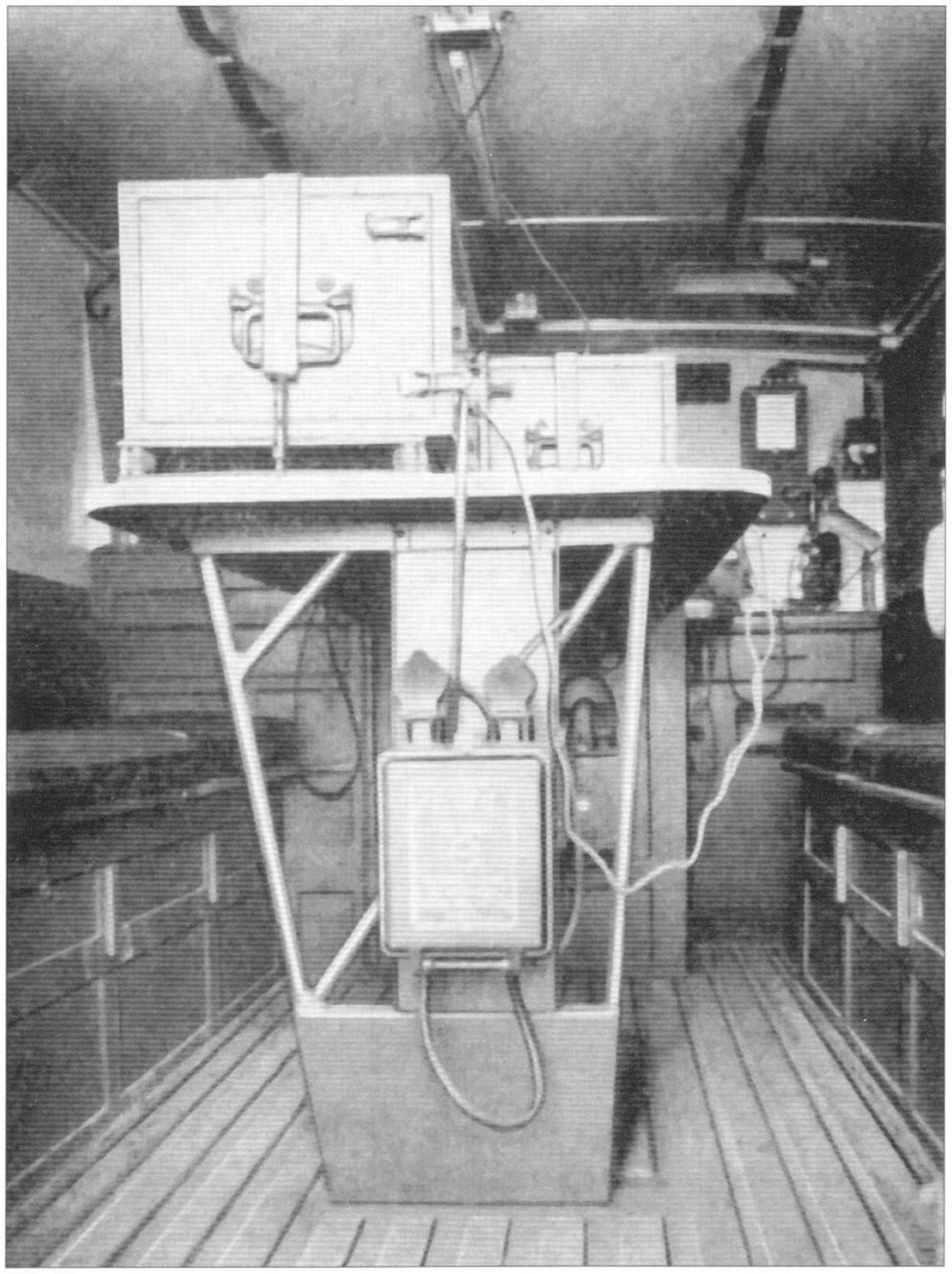
For purposes of the communications troops especially these machines were utilised - Henschel 33 D 1, Henschel or Magirus 33 G 1, Krupp L 3 H 63 or. 163, BŁssing-NAG 3 GL 6. These lorries with van superstructures were utilised under designation Kfz. 62 or 63. In the picture left of centre shows the auxiliary power unit (generator) standing behind the lorry.
On the opposite page the interior of Kfz. 72 receiving van.

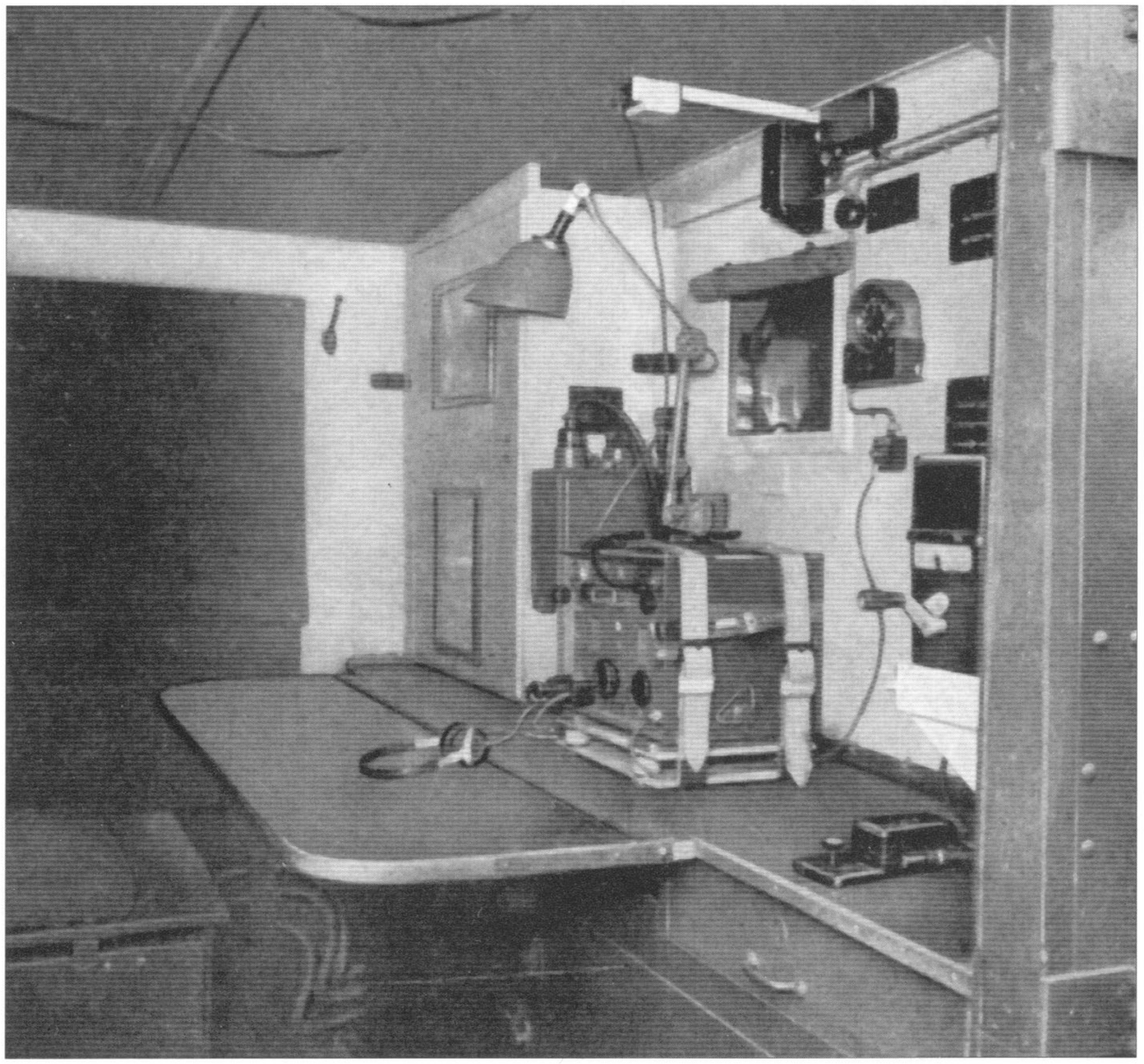


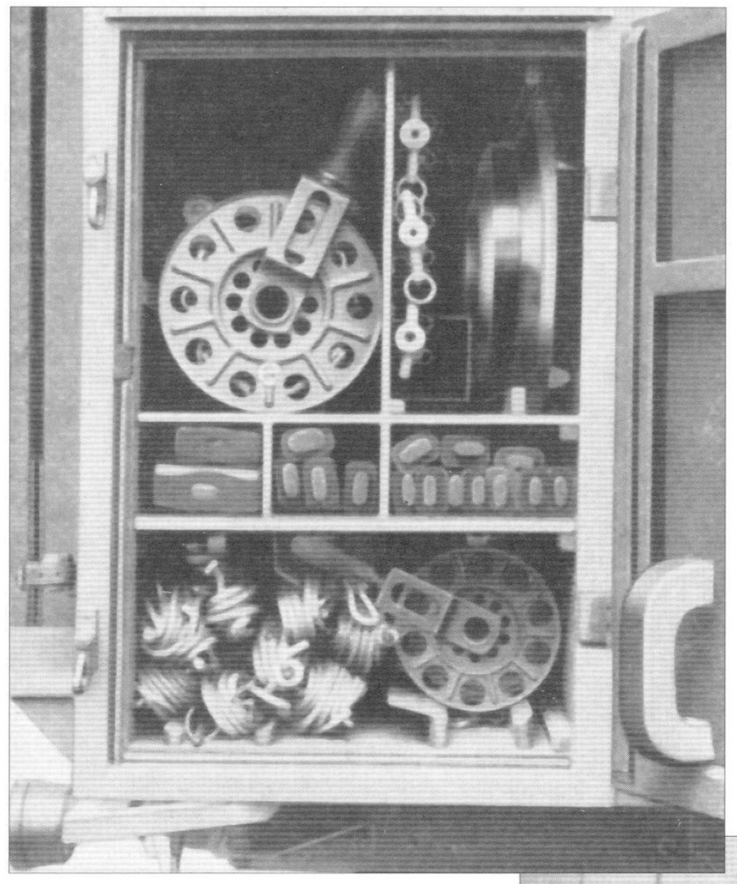


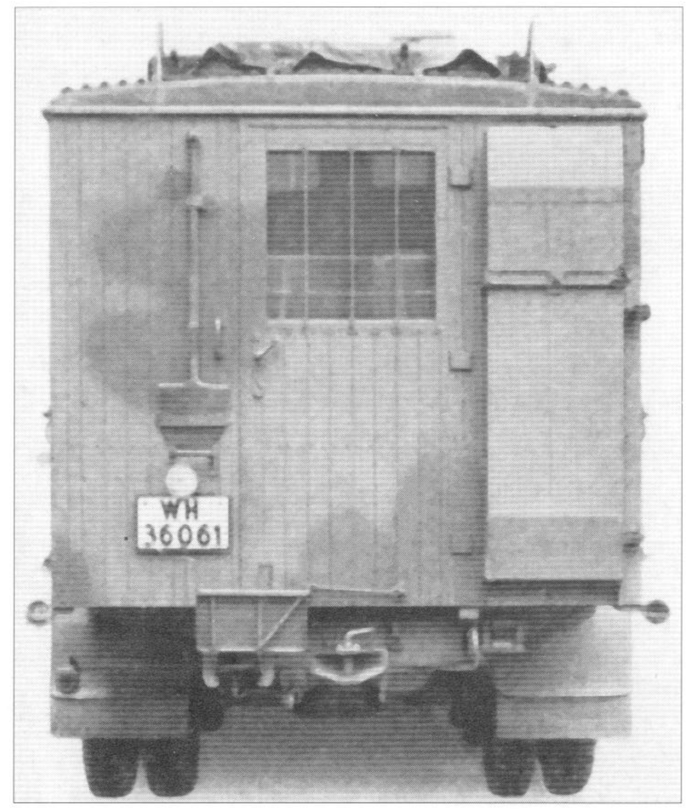


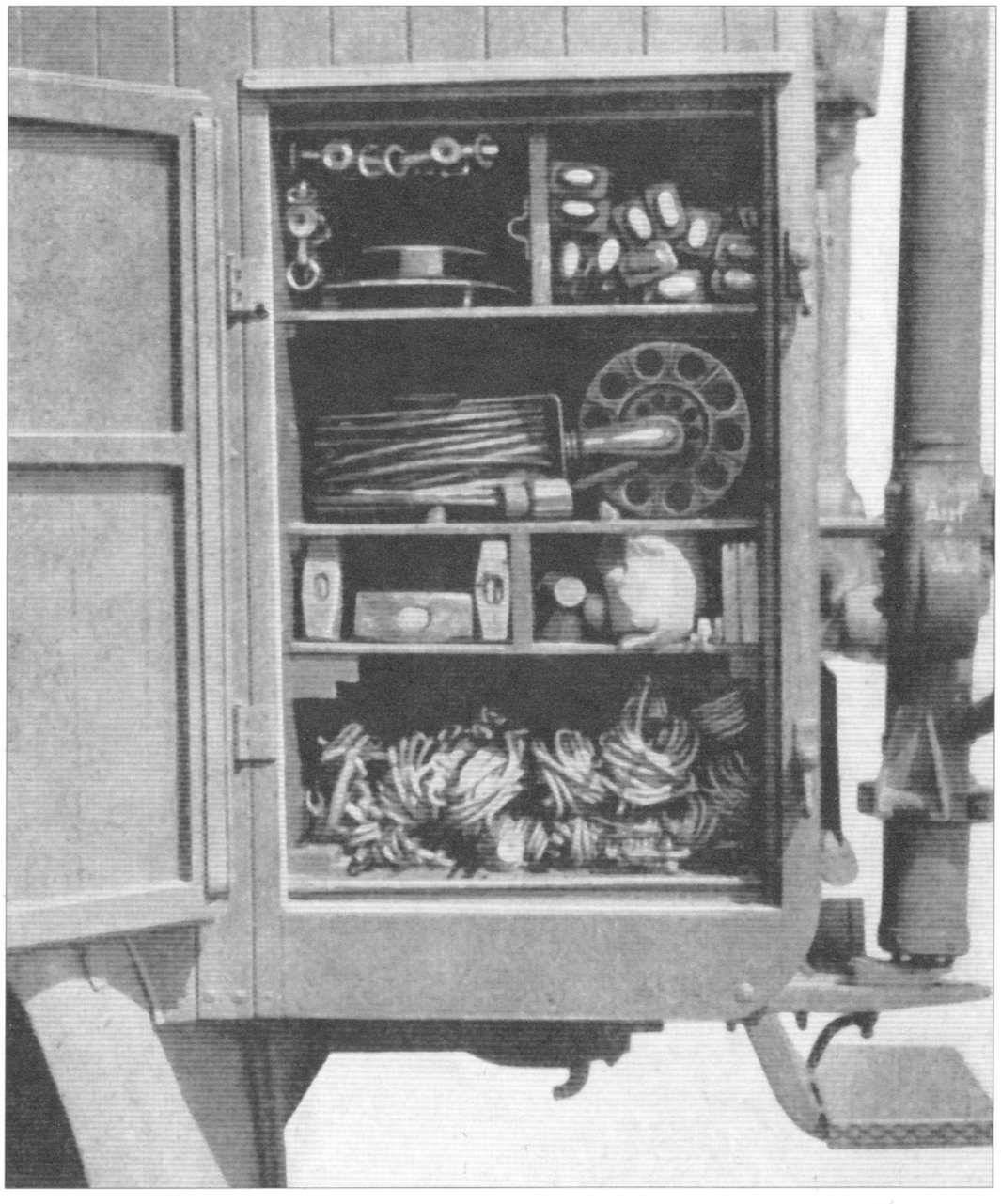




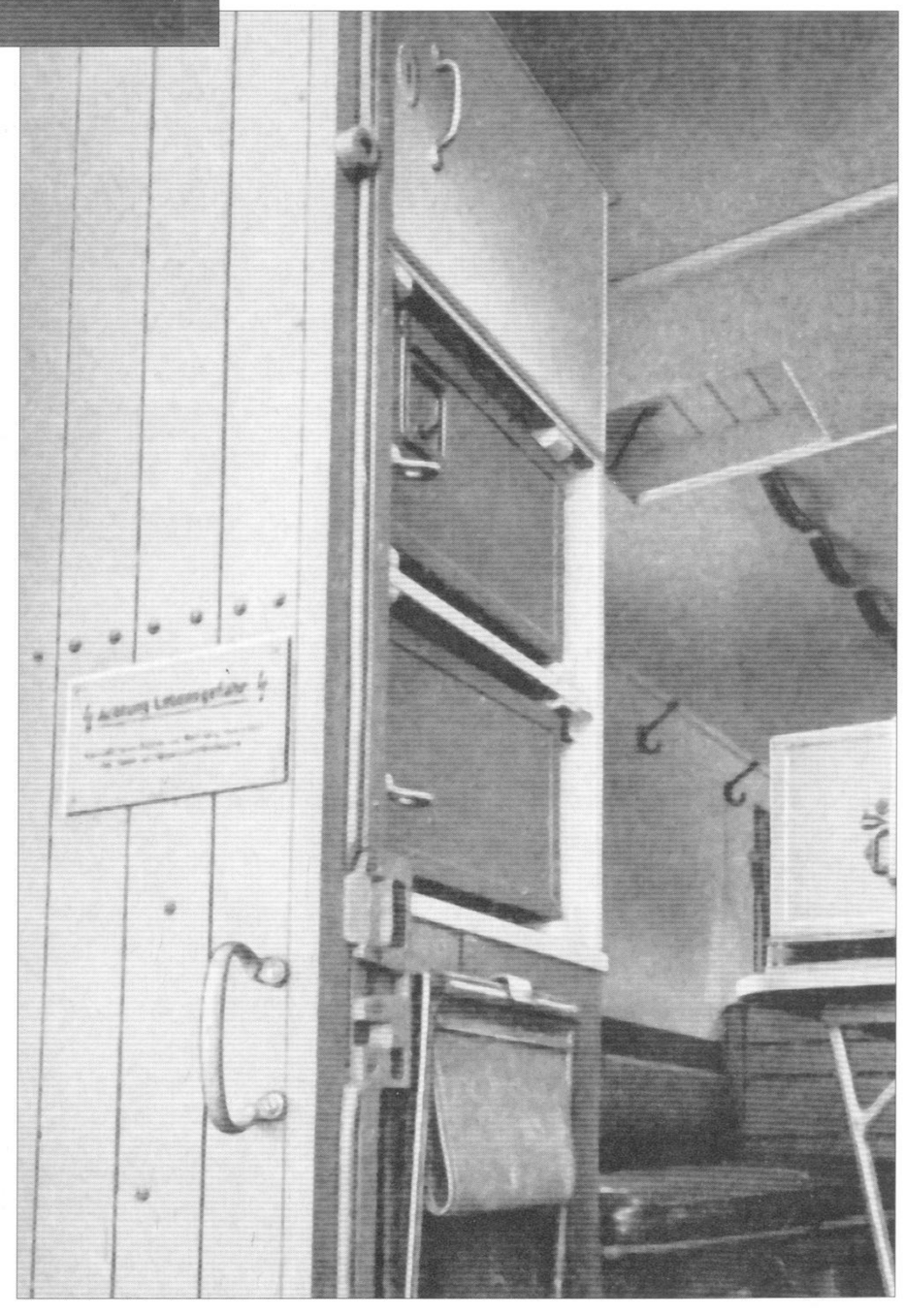


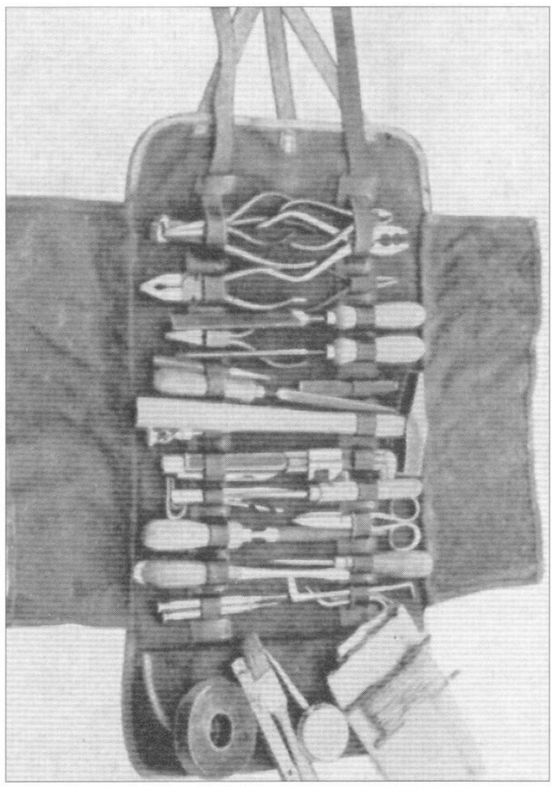


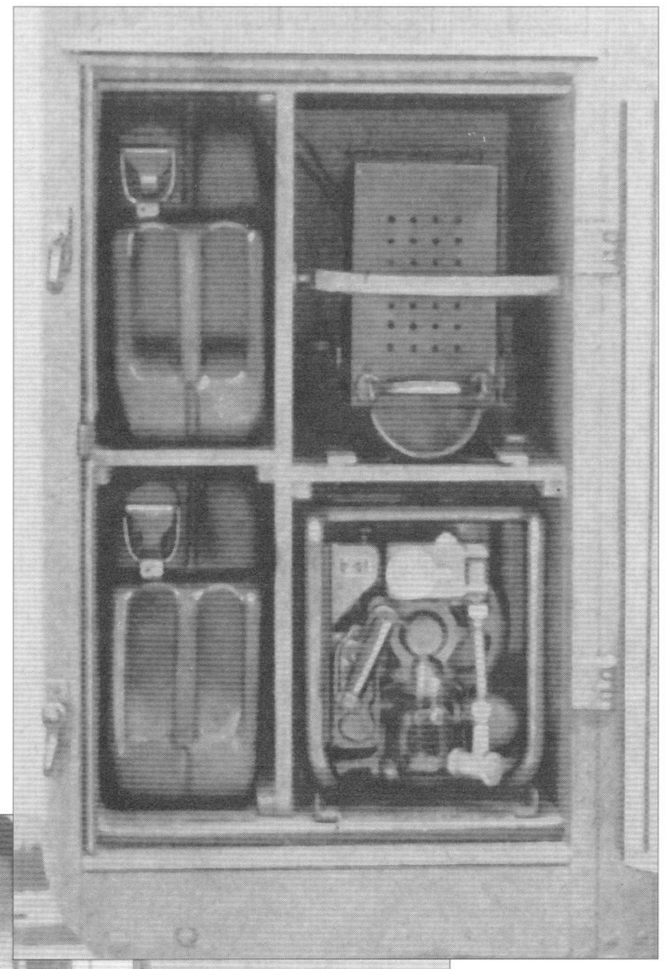


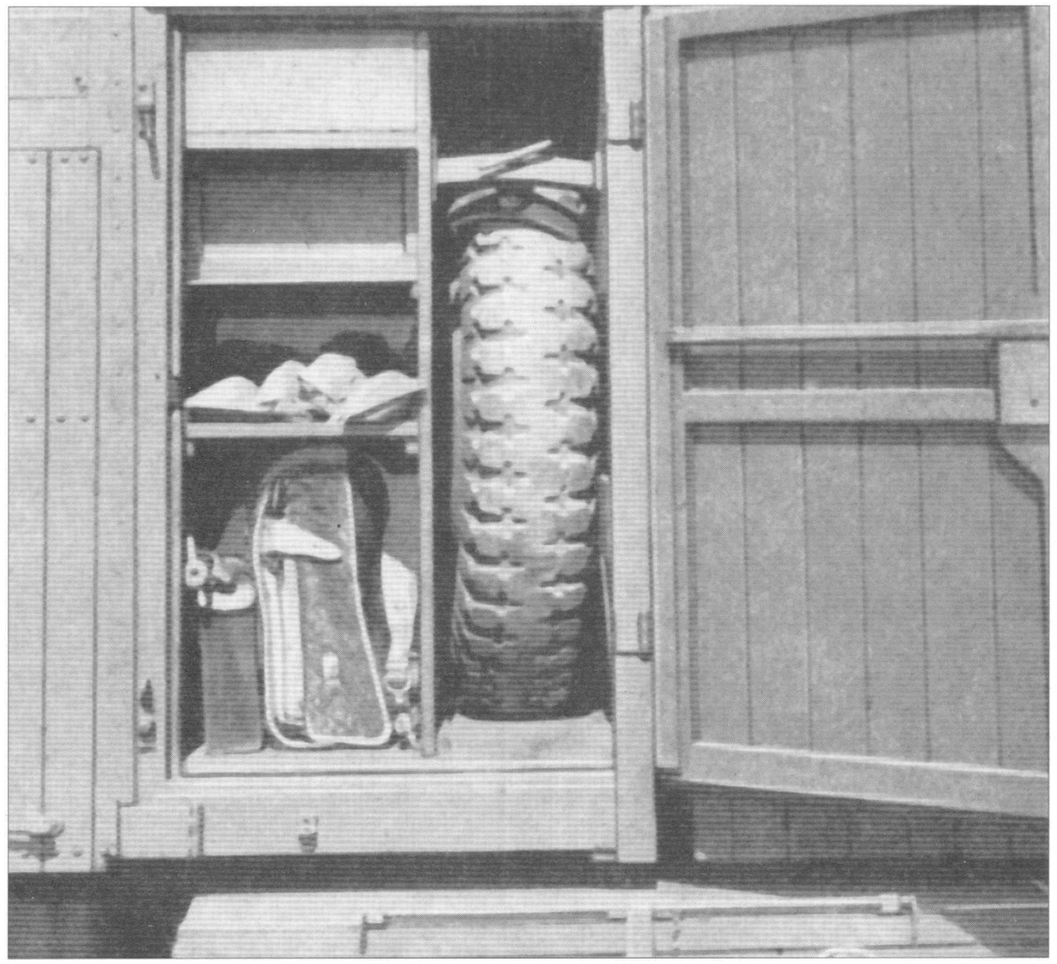


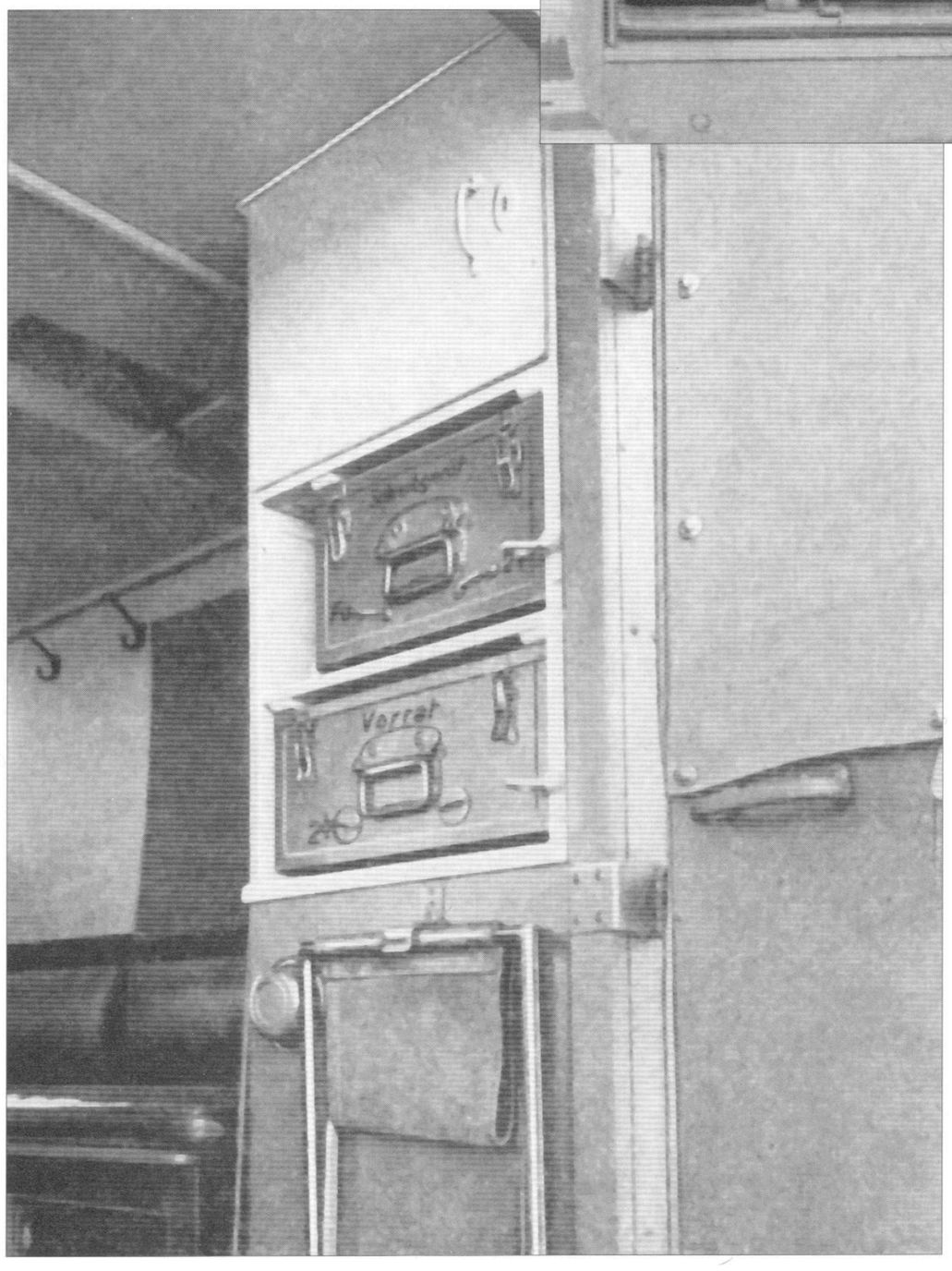
Accessories of the Kfz. 72 receiving van. The on-board equipment differed from the Kfz. 61 according to radio sets utilised. Compared to Kfz. 61 the 72's had also a different layout of doors on the van box sides. Compare to pp. 46 to 49.

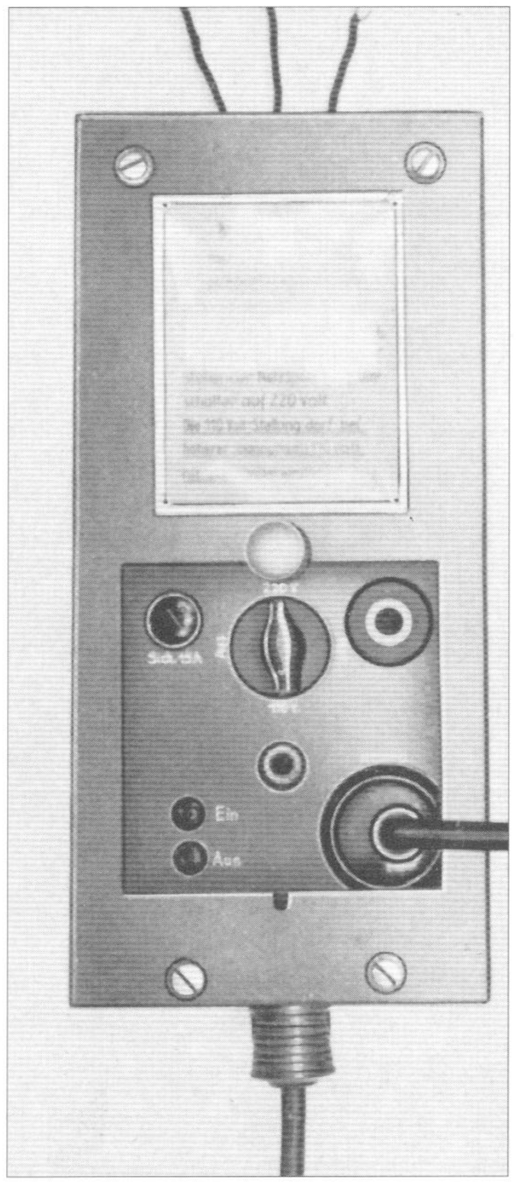




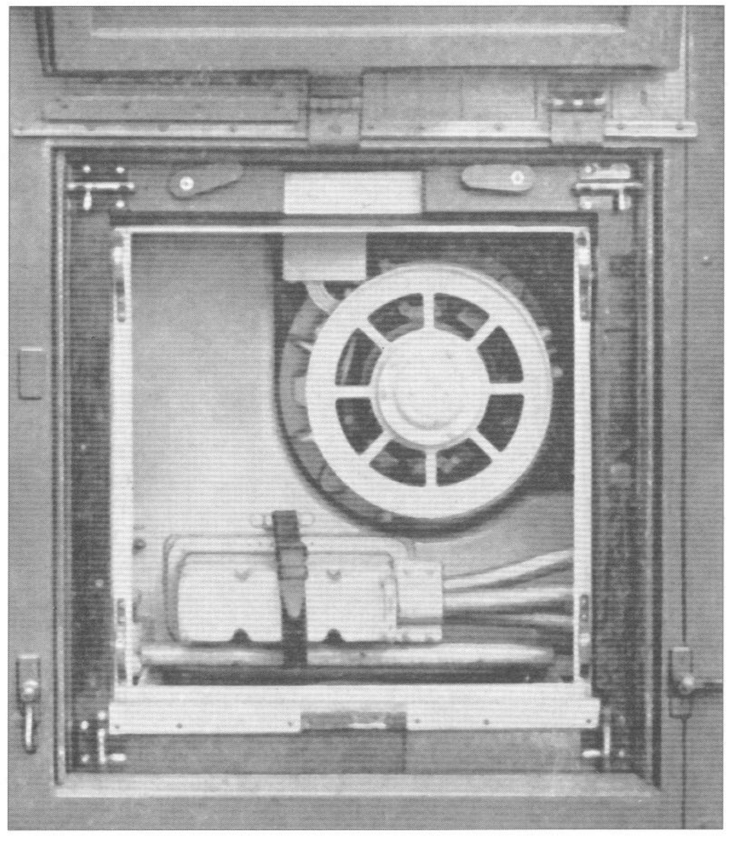


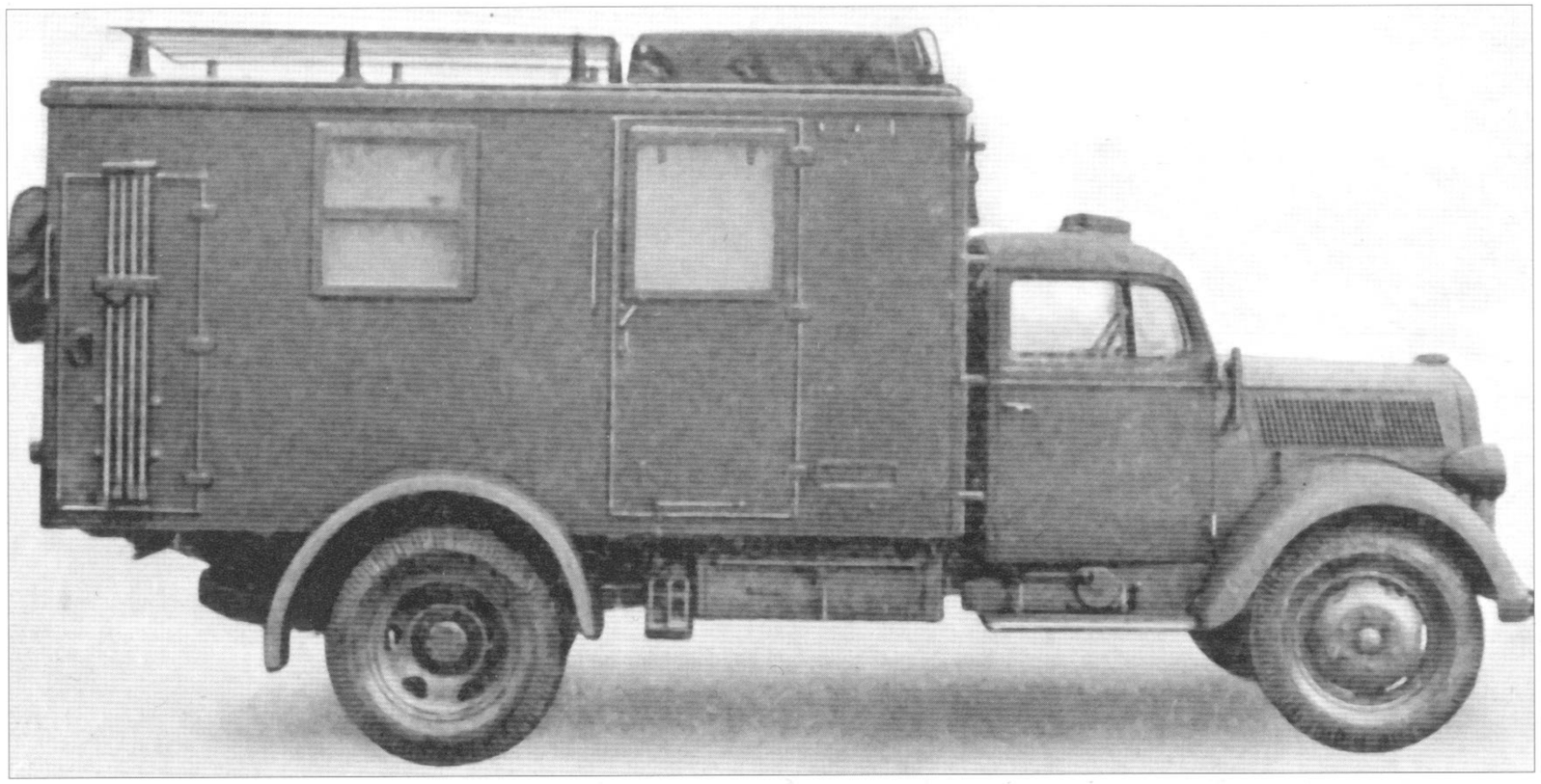


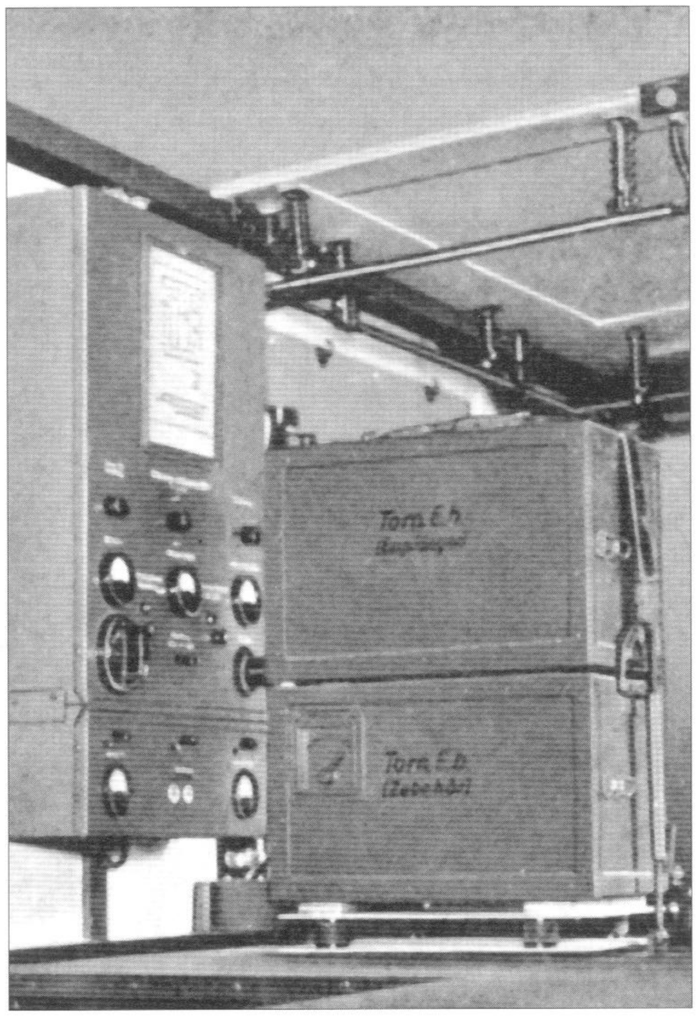




Top left picture shows the canvas wrap-up cover for tools necessary for most urgent repairs. Bottom/below centre shows a detail of a 220V/110V switch; its position is apparent from pictures on p. 51 above.

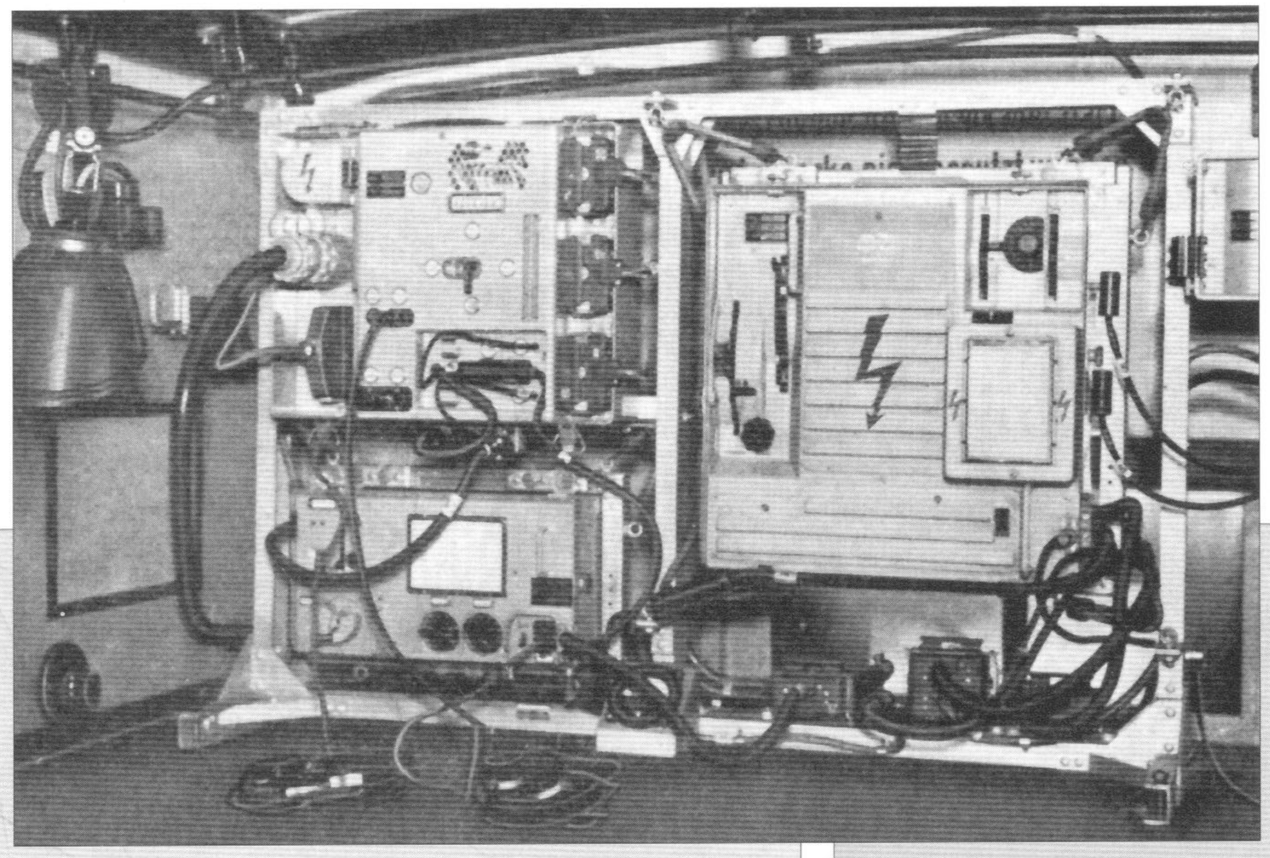


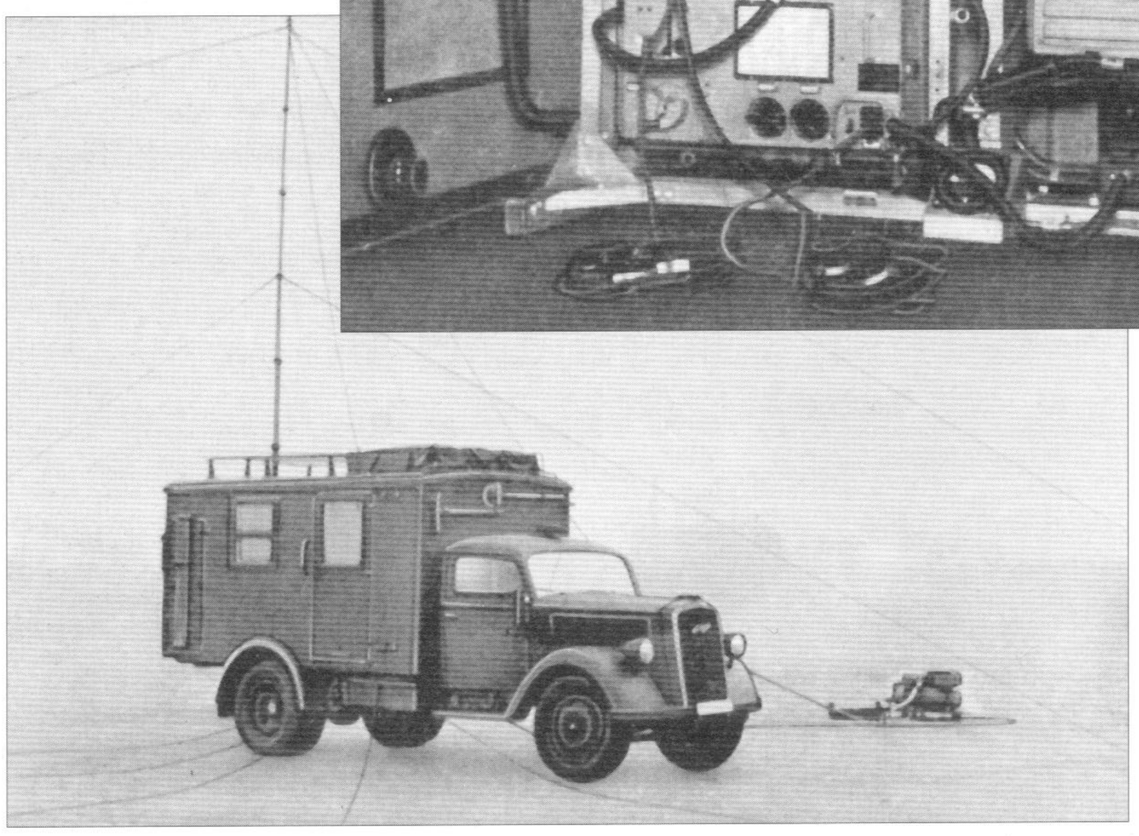


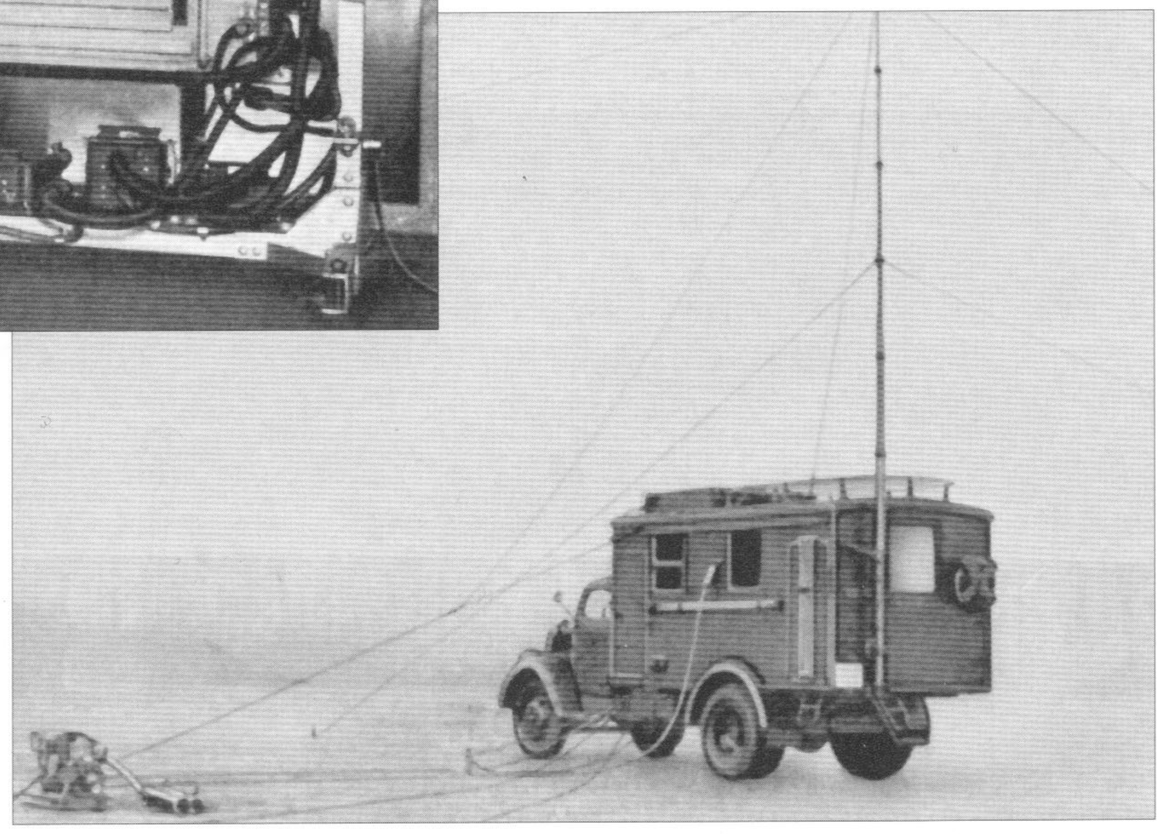


Kfz. 305/18

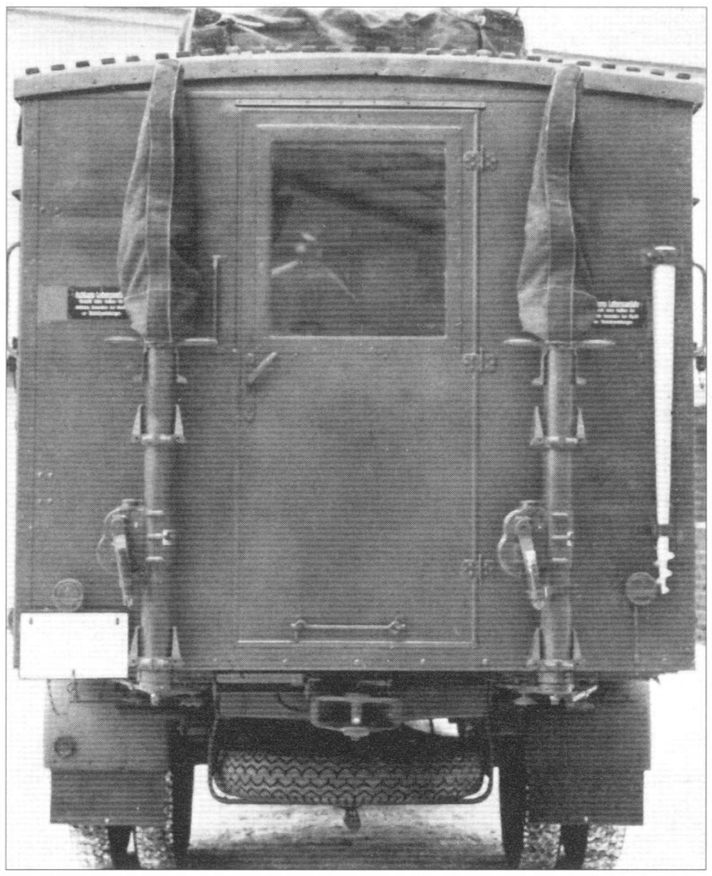
Opel Blitz Kfz. 305/18 radio van with a 70 Watt FuG V set for communication with aircraft, the on-board radio of Ju 52 was of the same type.



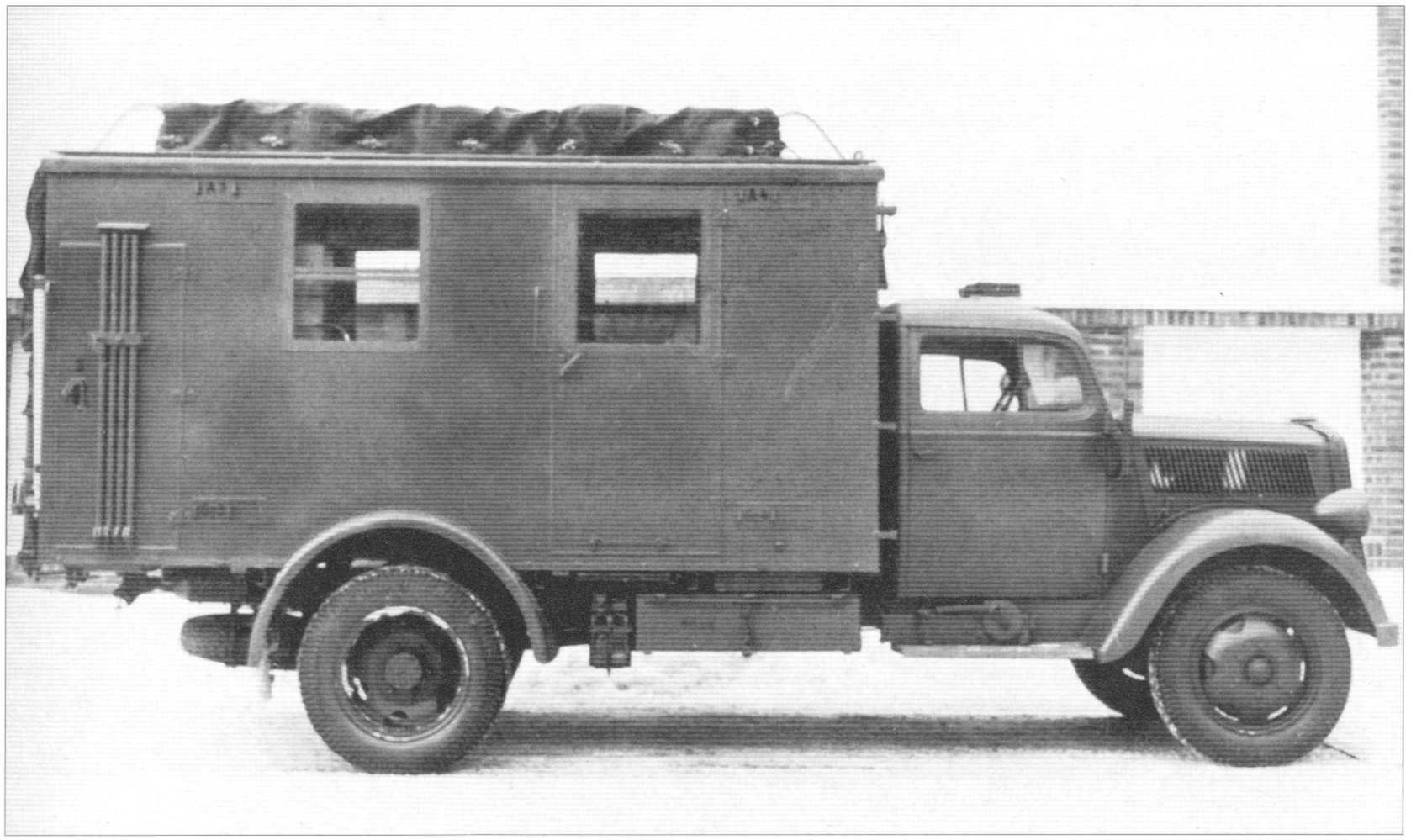


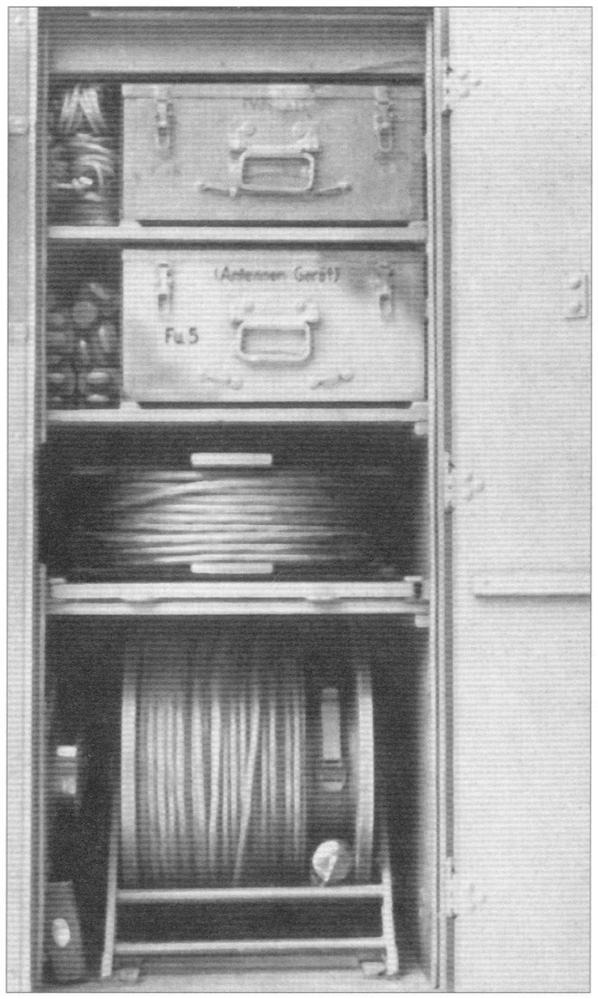


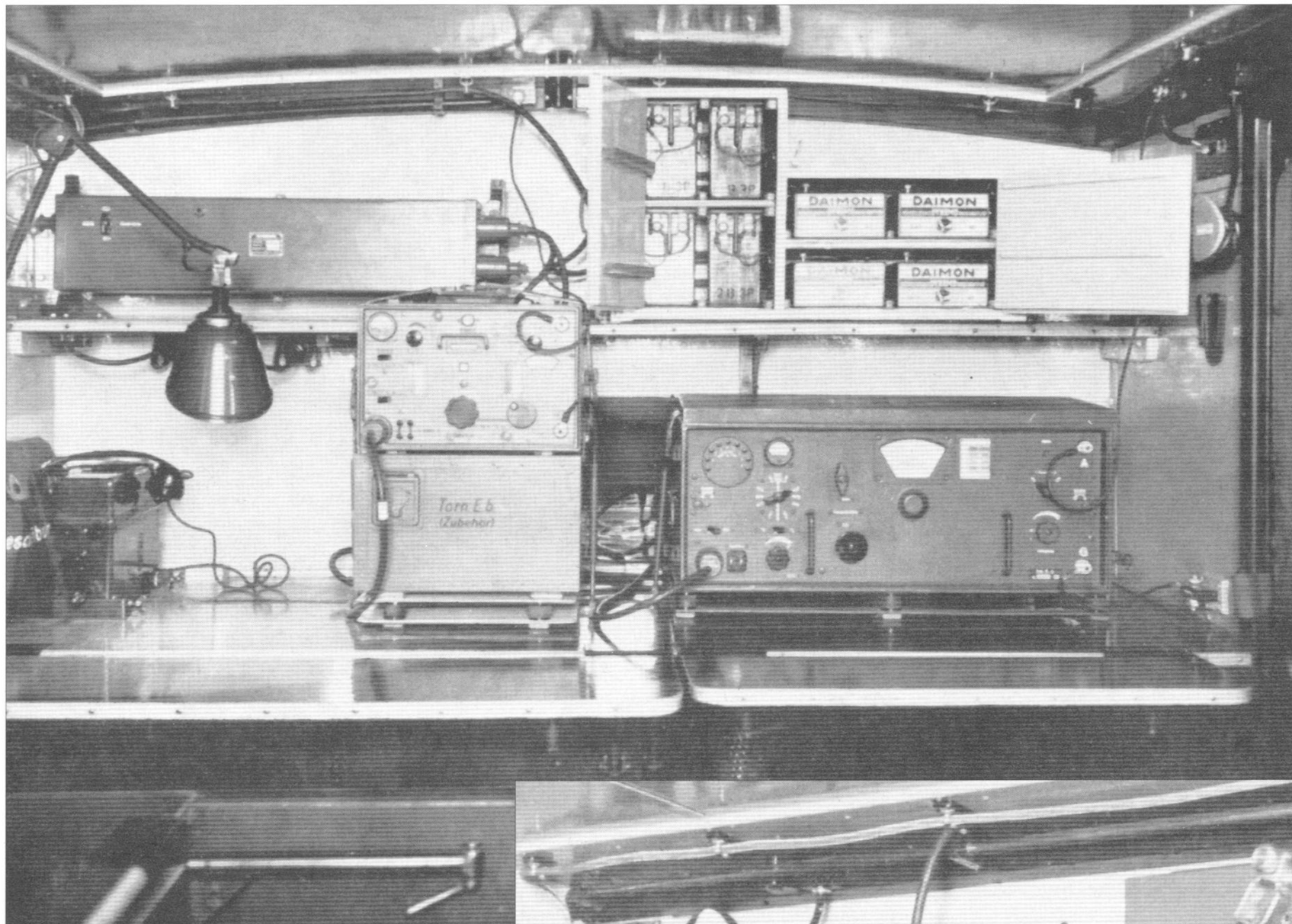
Kfz. 305/22



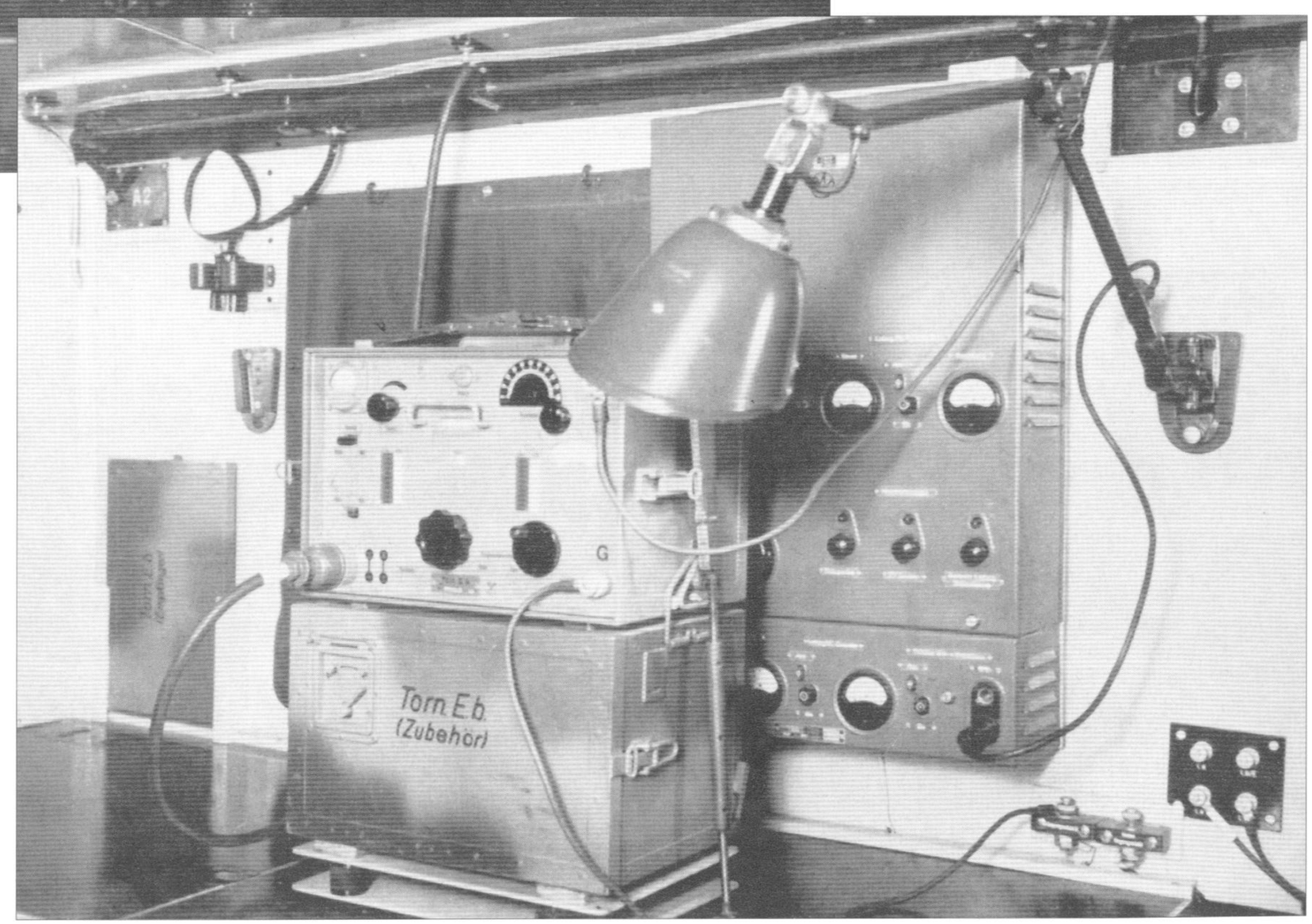
Opel Blitz Kfz. 305/22 receiving van. Note how the two telescopic antennae differ from the layout of version 18 depicted on opposite page.

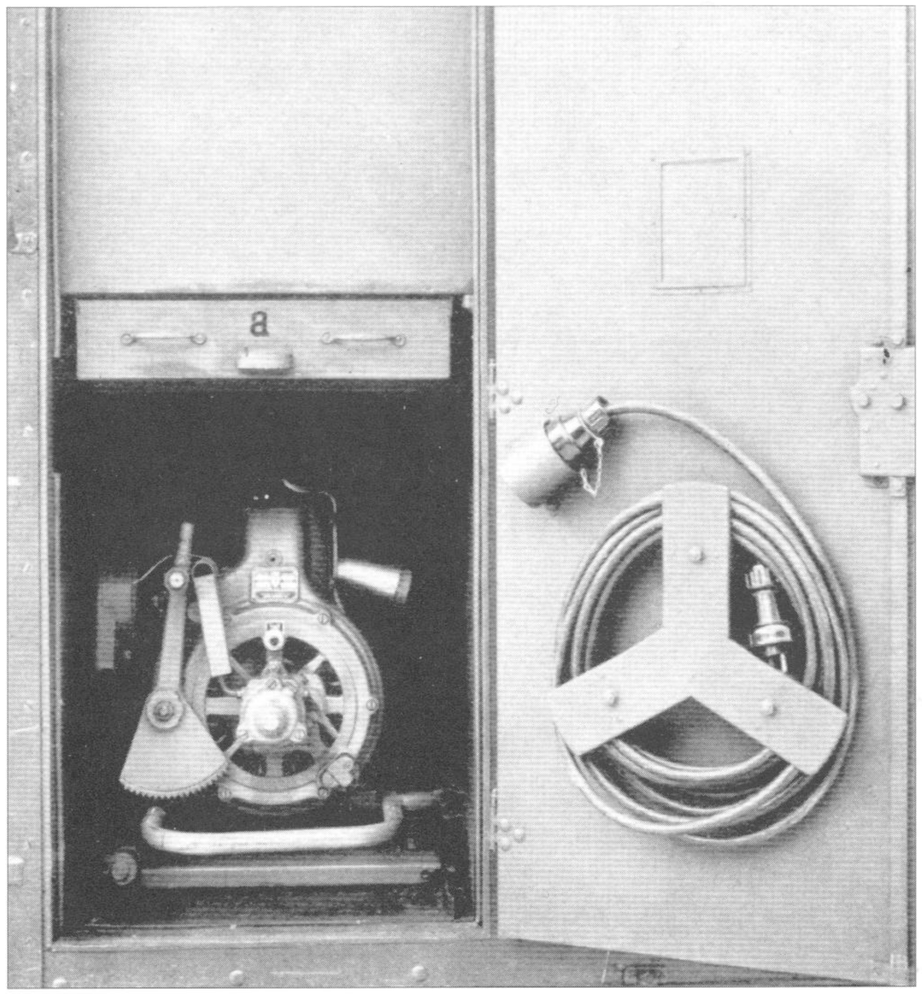


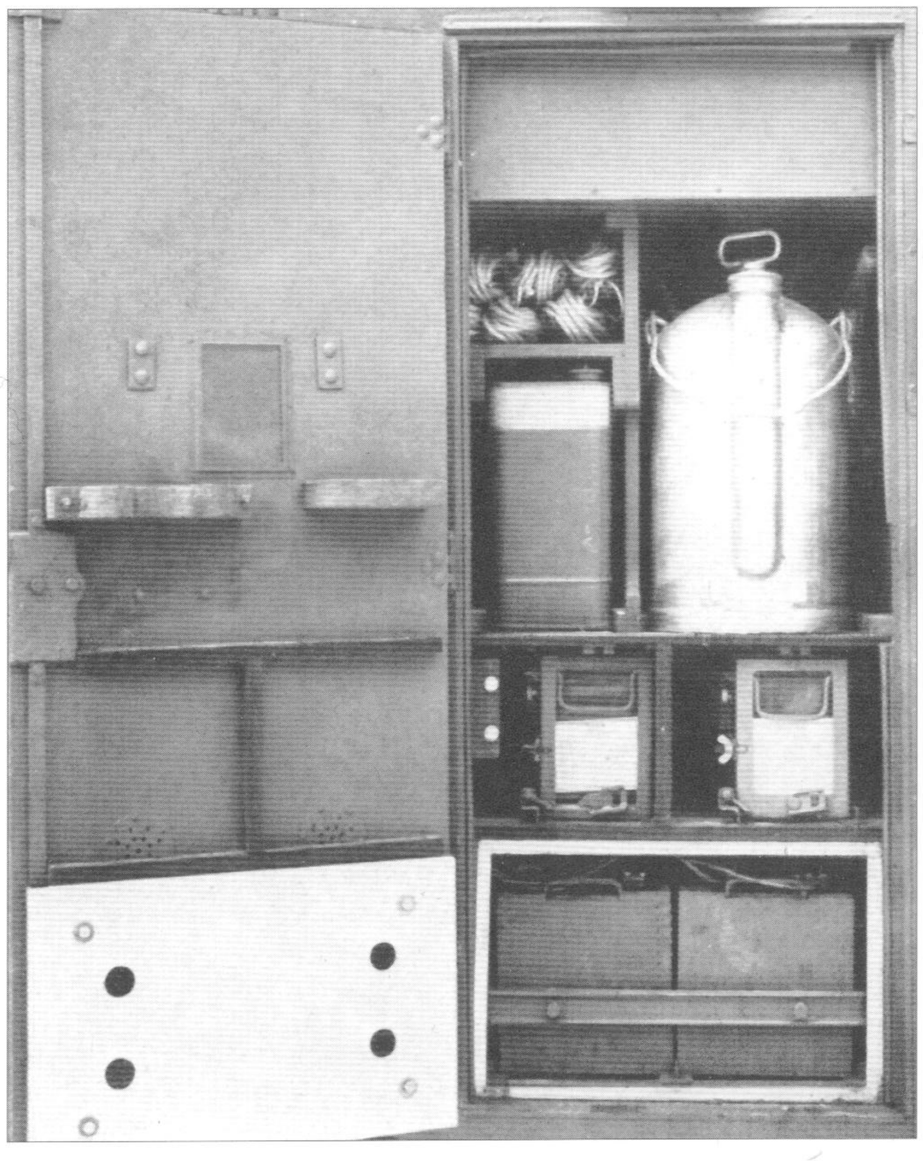


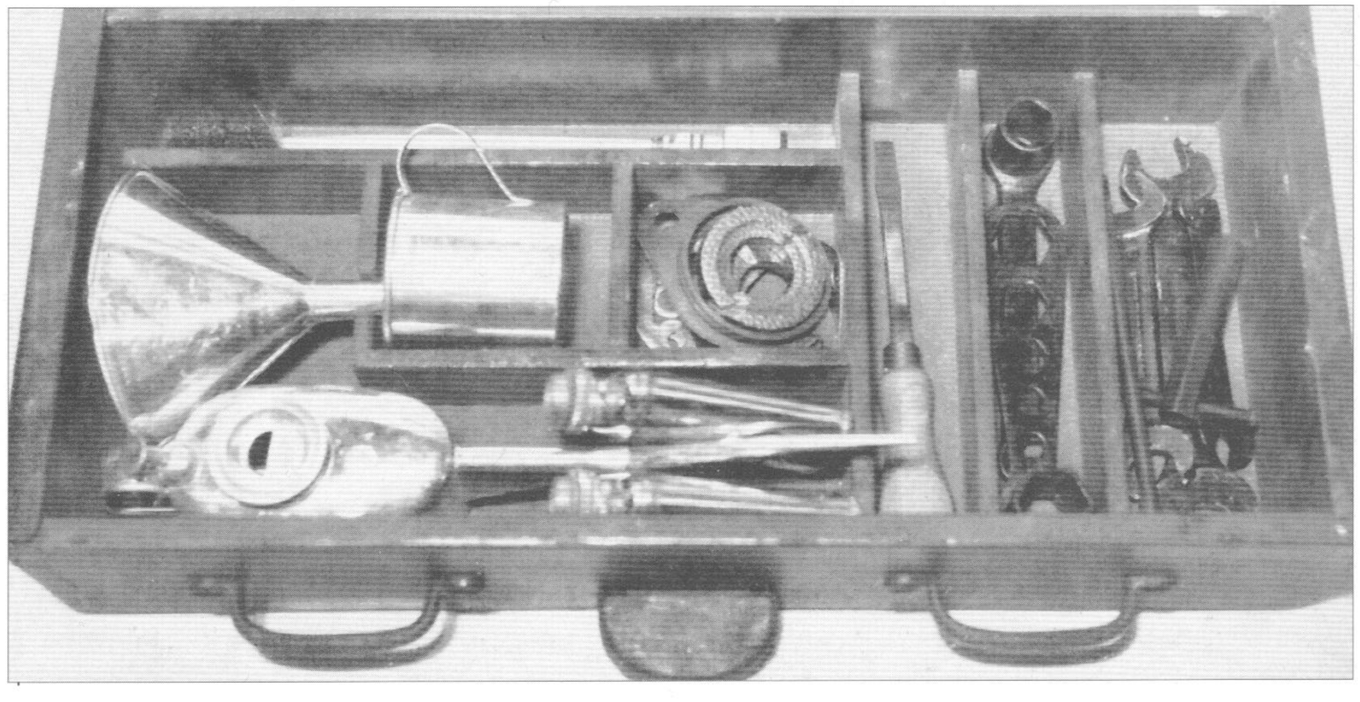


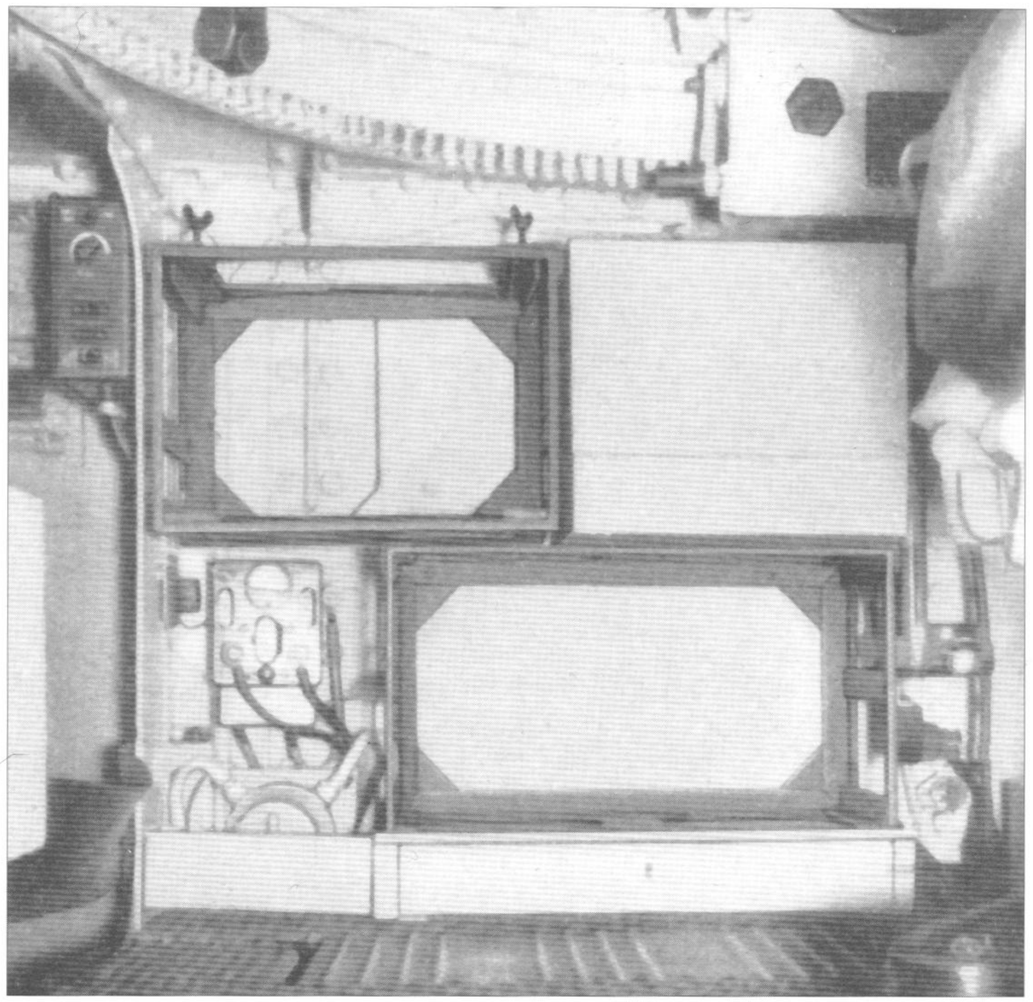
The receiving van equipped with Torn.E.b. and Lw.E.a. receivers.
The same van boxes as shown on these and preceding pages were also fitted to Mercedes-Benz Typ L 3000S lorries.
Below left the storage space under the seat lid is visible.
The folding work tables of radio operator are readily apparent, similar to those in the Kfz. 17, 61 and 72 shown on preceding pages of this book.
Accessories to the Kfz. 305/22 receiving van.
Opposite page bottom right shows the tool drawer.
Some of the side cupboards were accessible from both inside and outside.

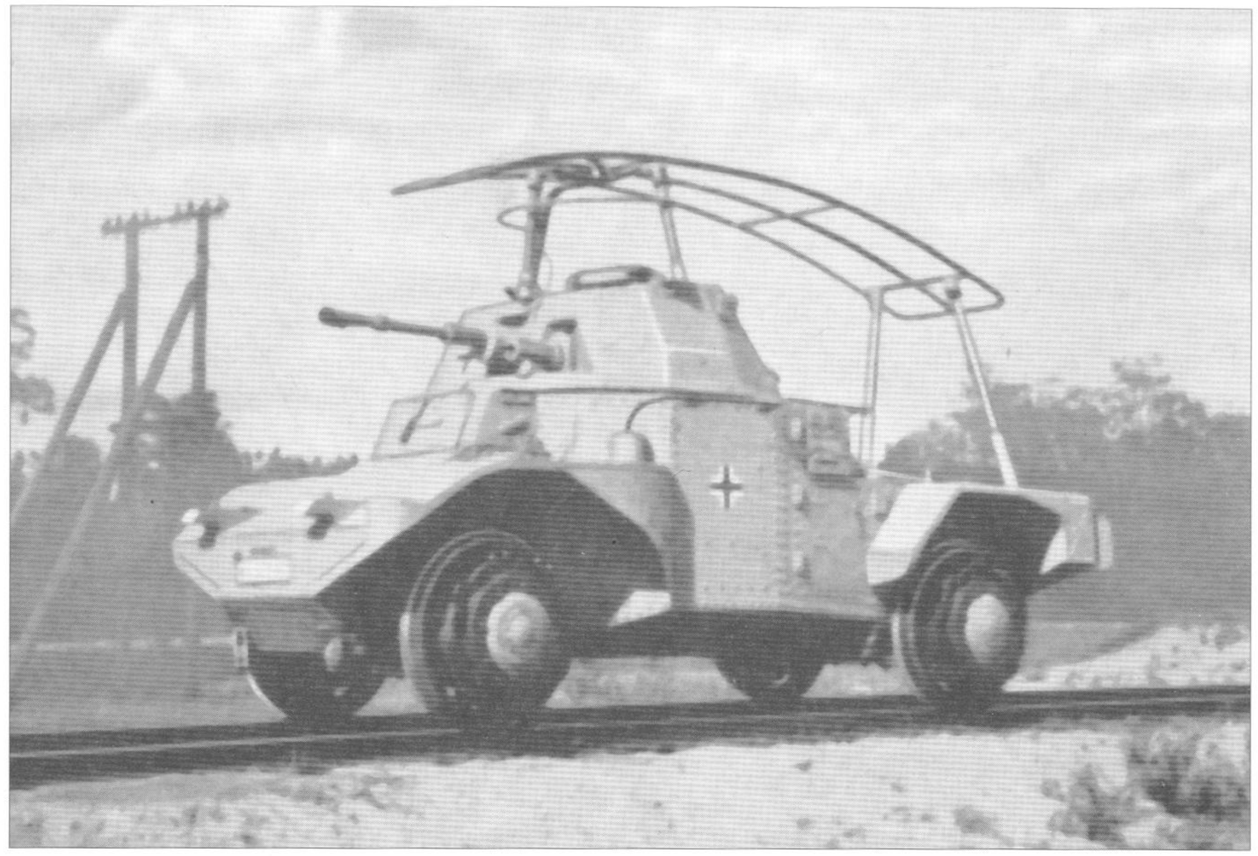






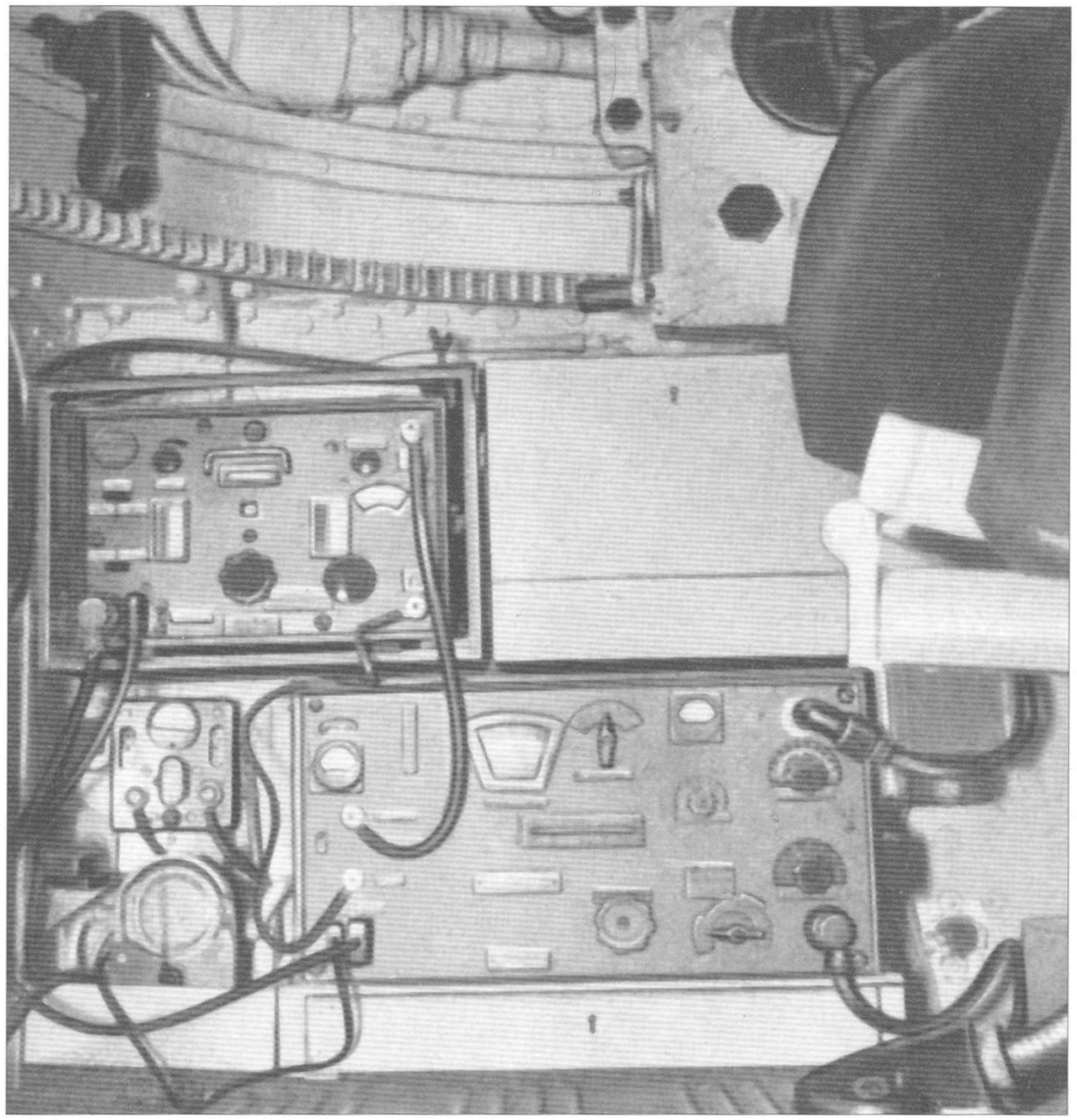




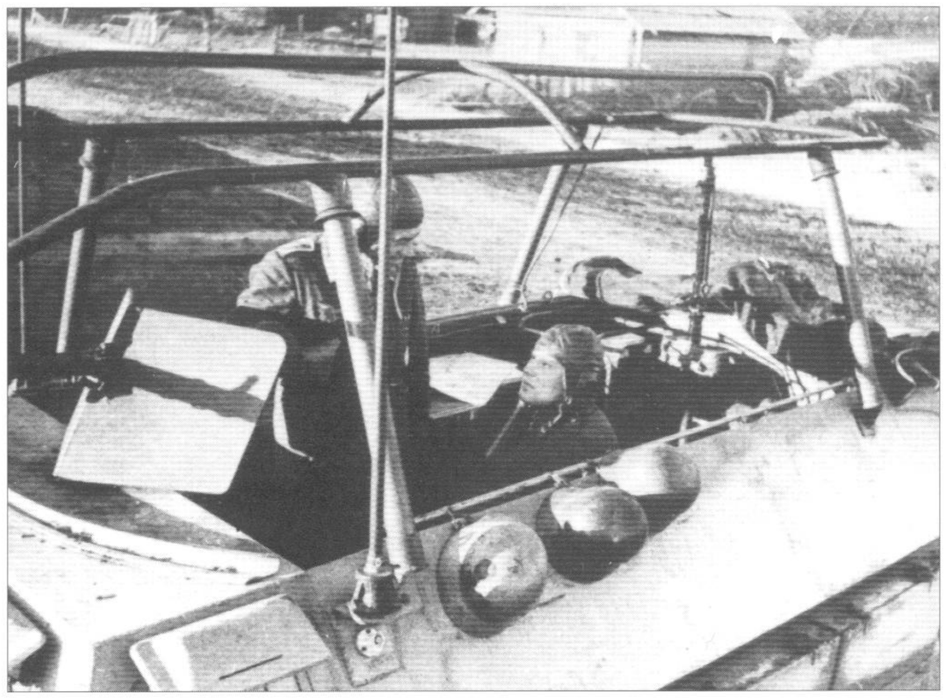


Panhard

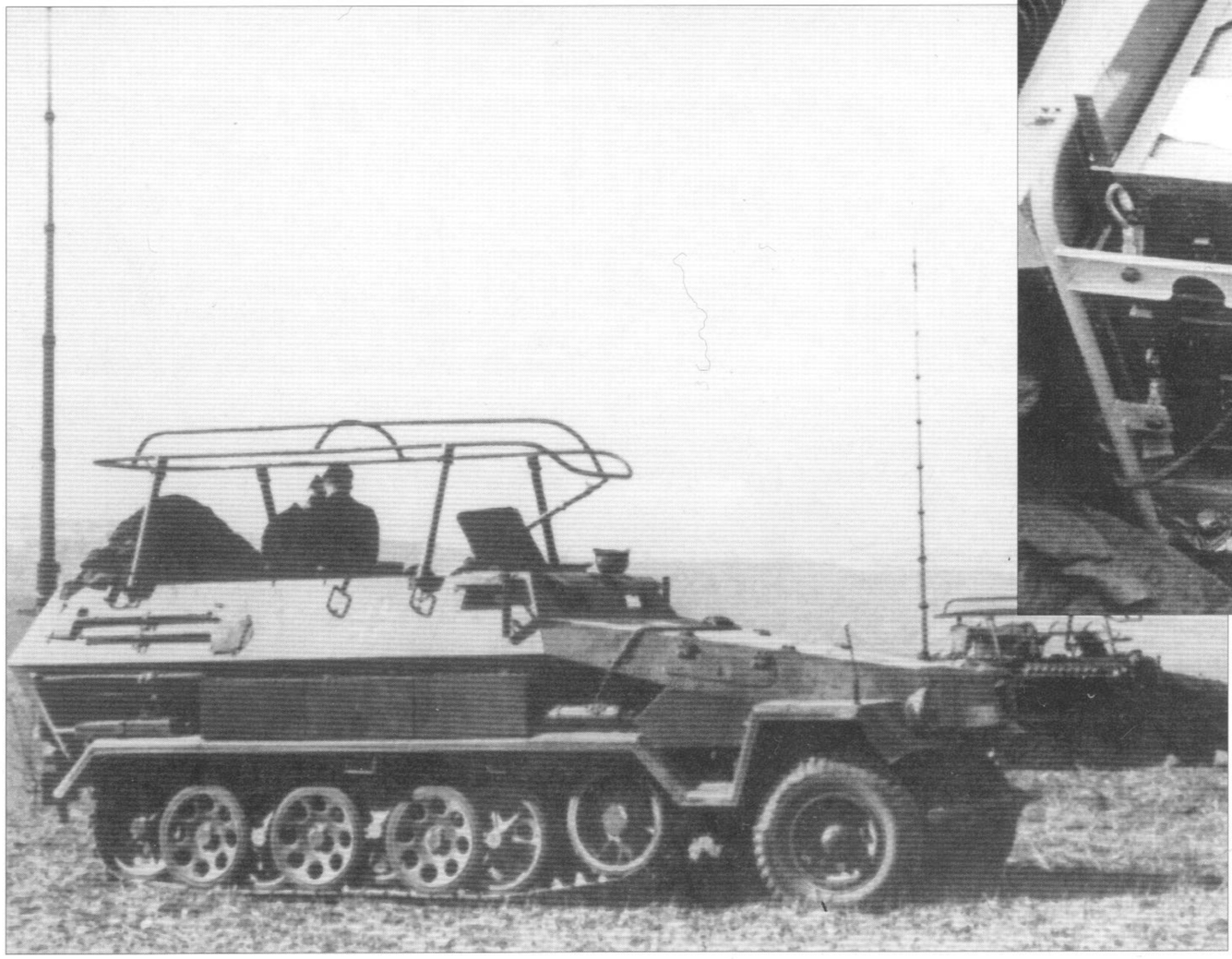
Sd.Kfz. 221



Sd.Kfz. 250, 251



Above left a modified command Sd.kfz. 251/7, above right a Sd.kfz. 250/3, Eastern Front. Bottom left command Sd.kfz. 251/3 IV, with FuG 11 and FuG 12 transmitters of 80 W output. A command and communications Sd.kfz. 250/3 with a Fu 8 radio set.

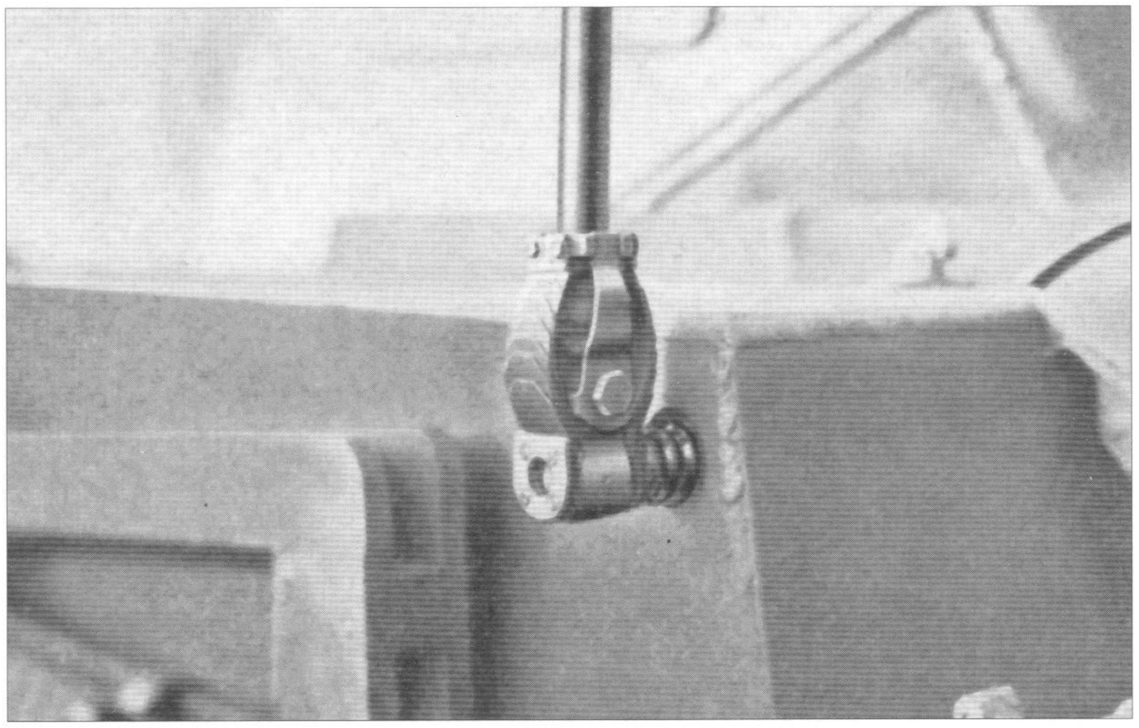


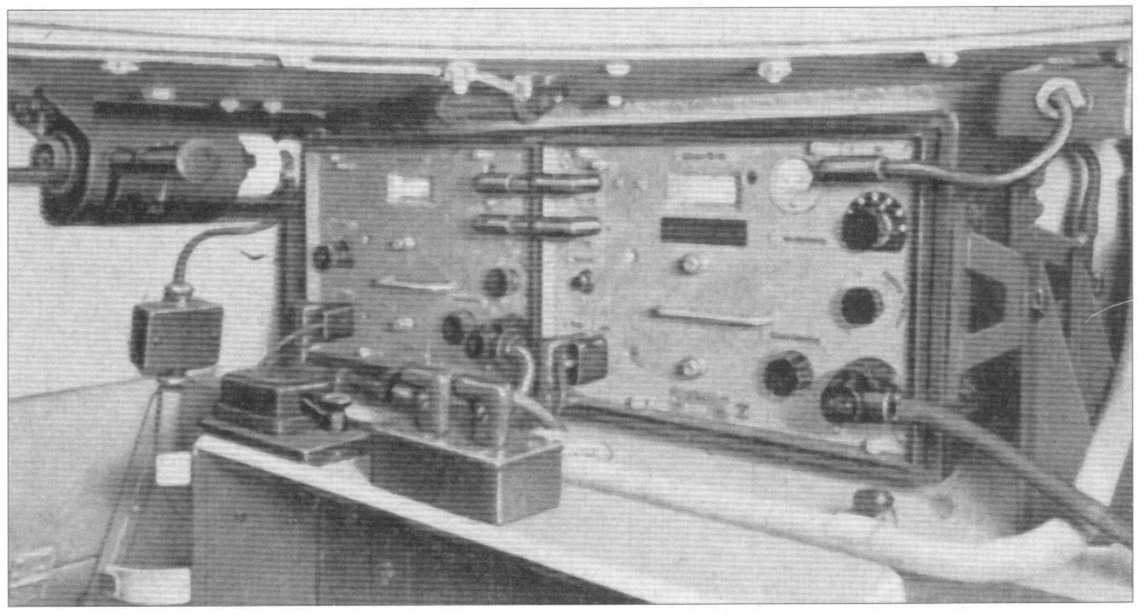
Fu 20 radio set in a Panhard scout (reconnaissance) car. The empty frames for radio sets are finely visible above. Bottom right a Sd.kfz. 223 during a German counterattack near Krivoy Rog. Eastern Front, 1943.

Kpfz. II

Tip right column older attachment of a tank antenna, radio set accessory kit and a Fu 5 unified tank radio set.

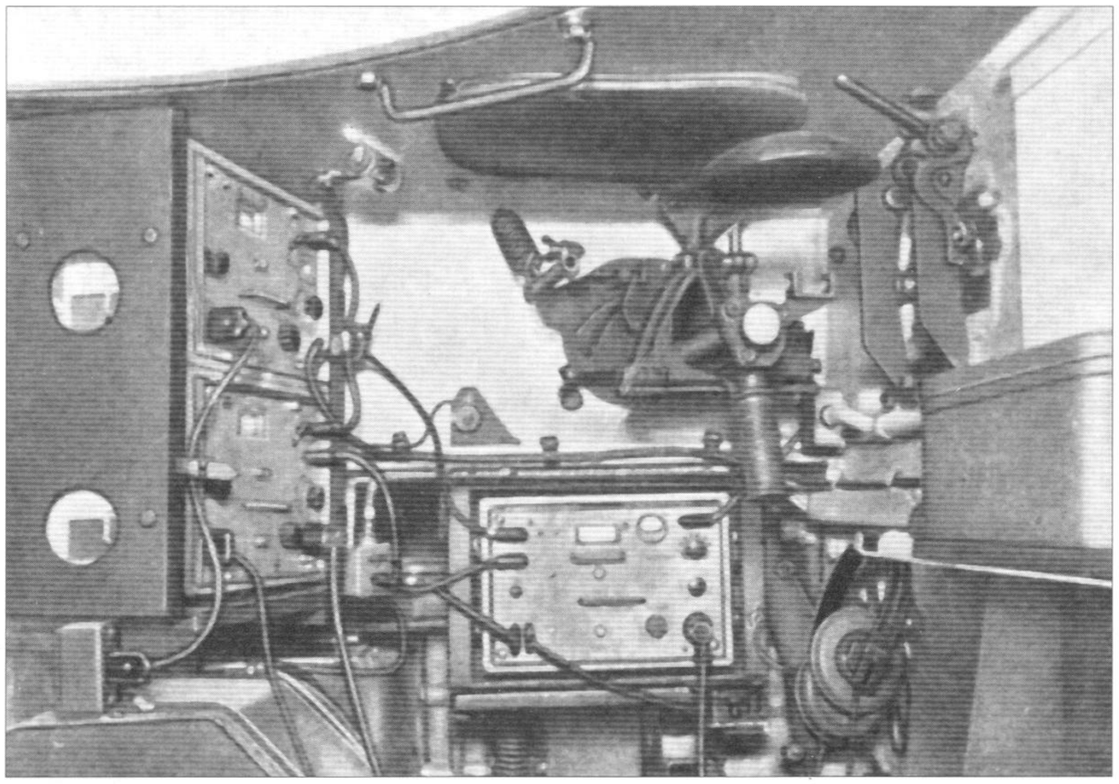
General Heinz Guderian in his command Sd.kfz. 250/6 during French campaign, May 1940. In the foreground radio operators with their Fu 8 and a ciphering machine Enigma.

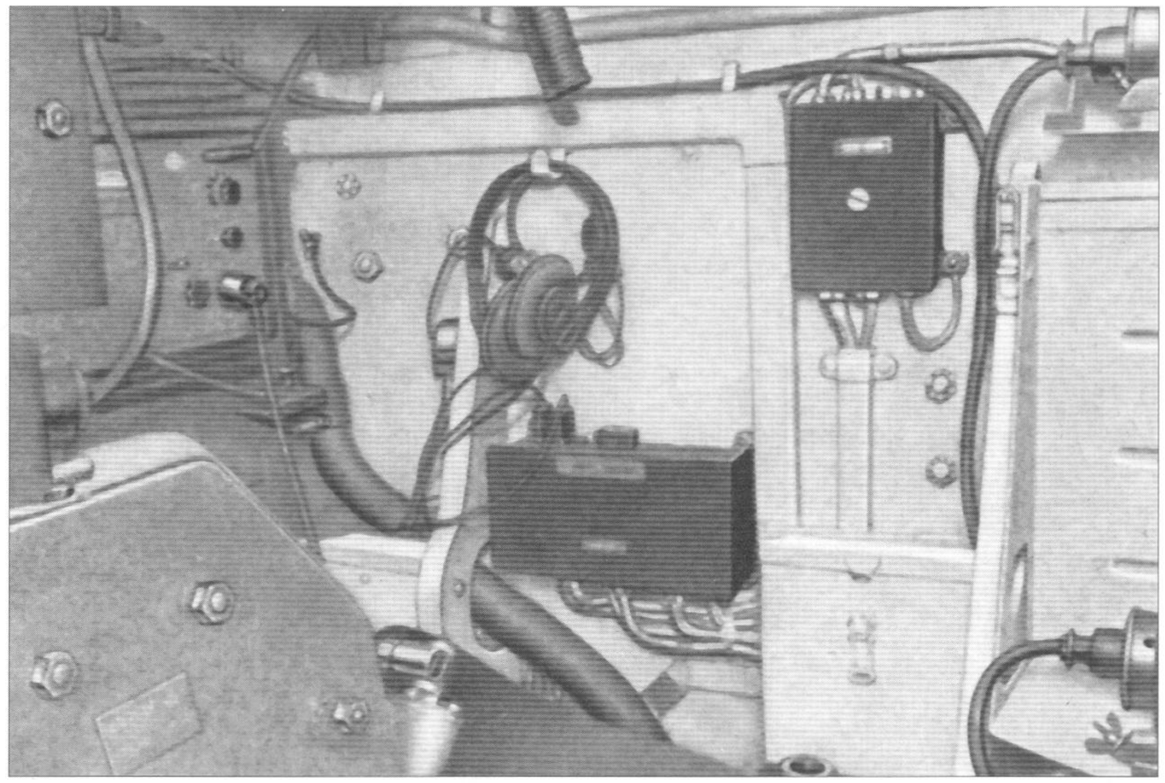


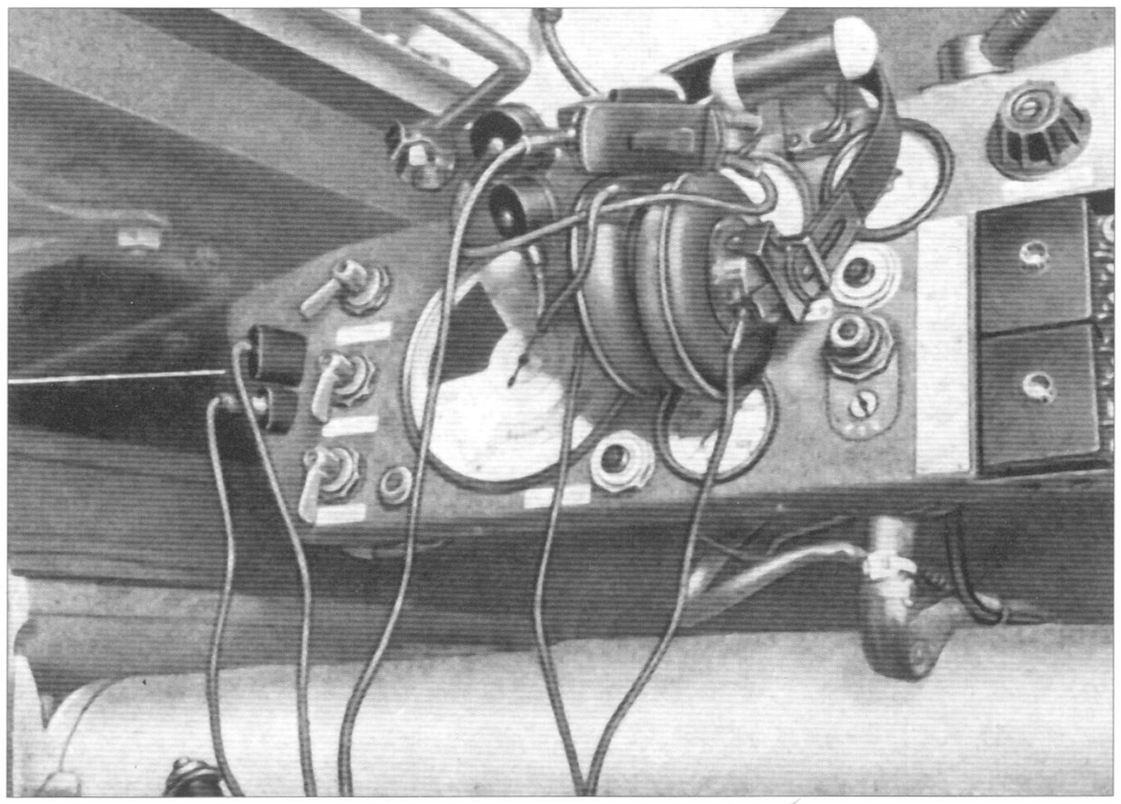


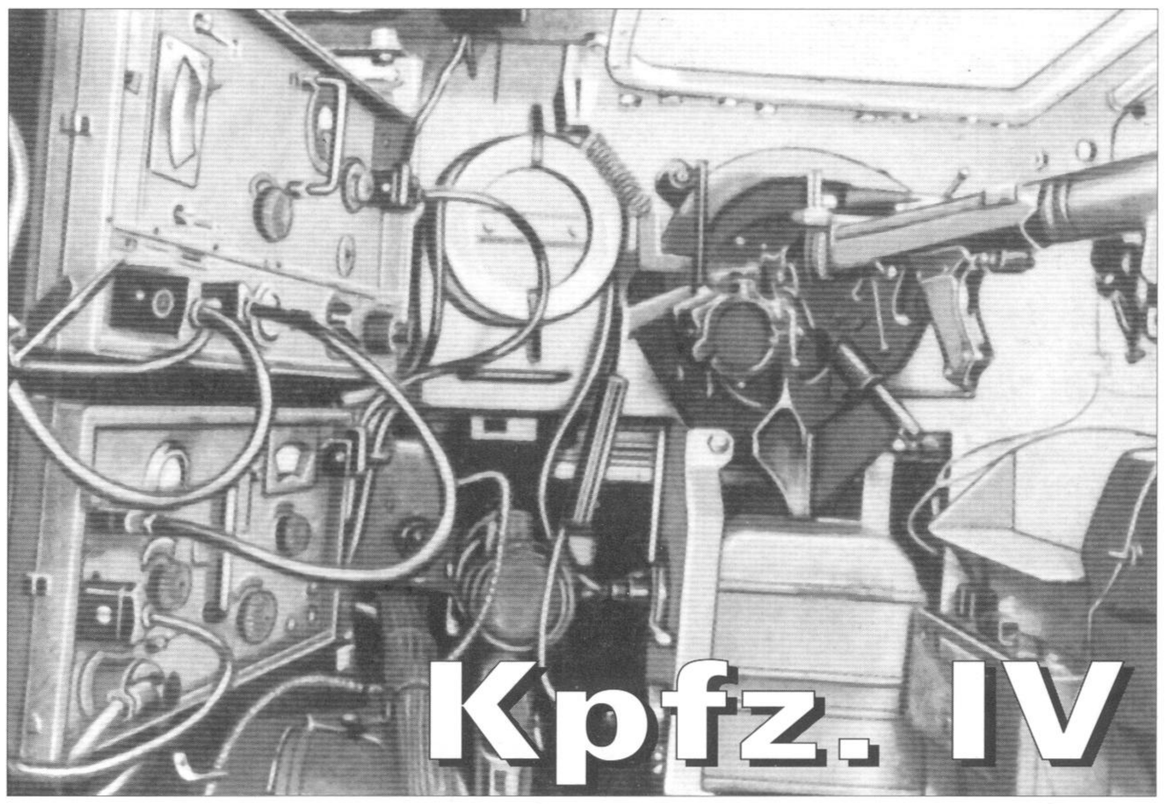
Kpfz. III

Radio equipment of Pz III consisted of the unified Fu 5 and Fu 2 set.
On the picture at left, in the left middle of the photo a Ukw.E.e receiver is visible,
to the right the 10 W.S.c transmitter.
Bottom right radio set in a Pz IV.



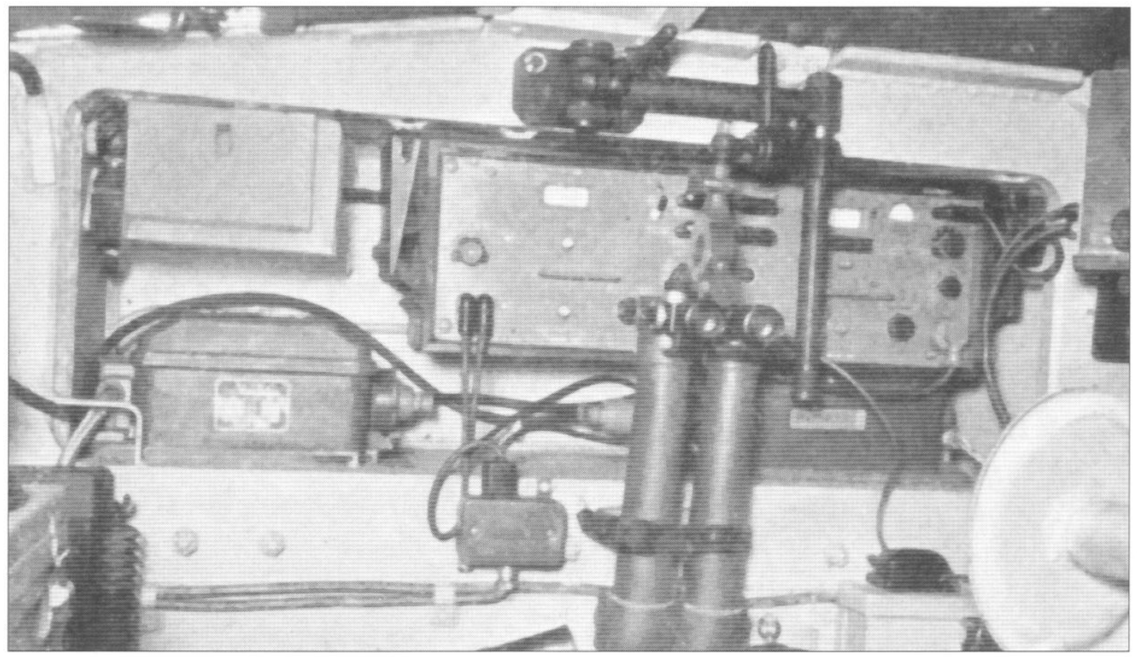


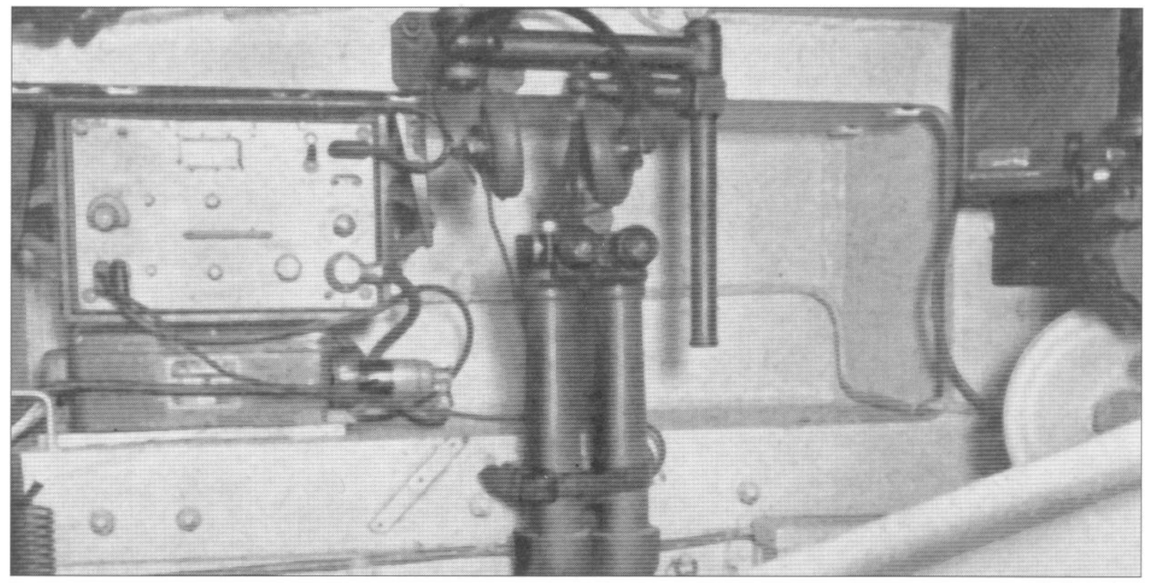


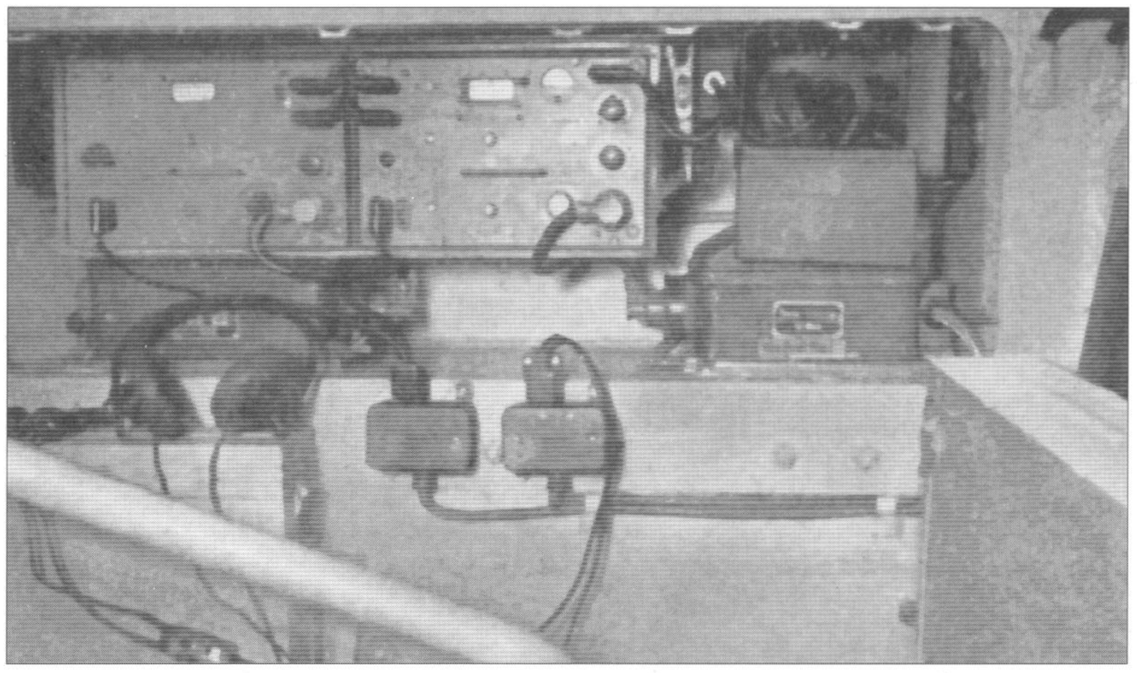


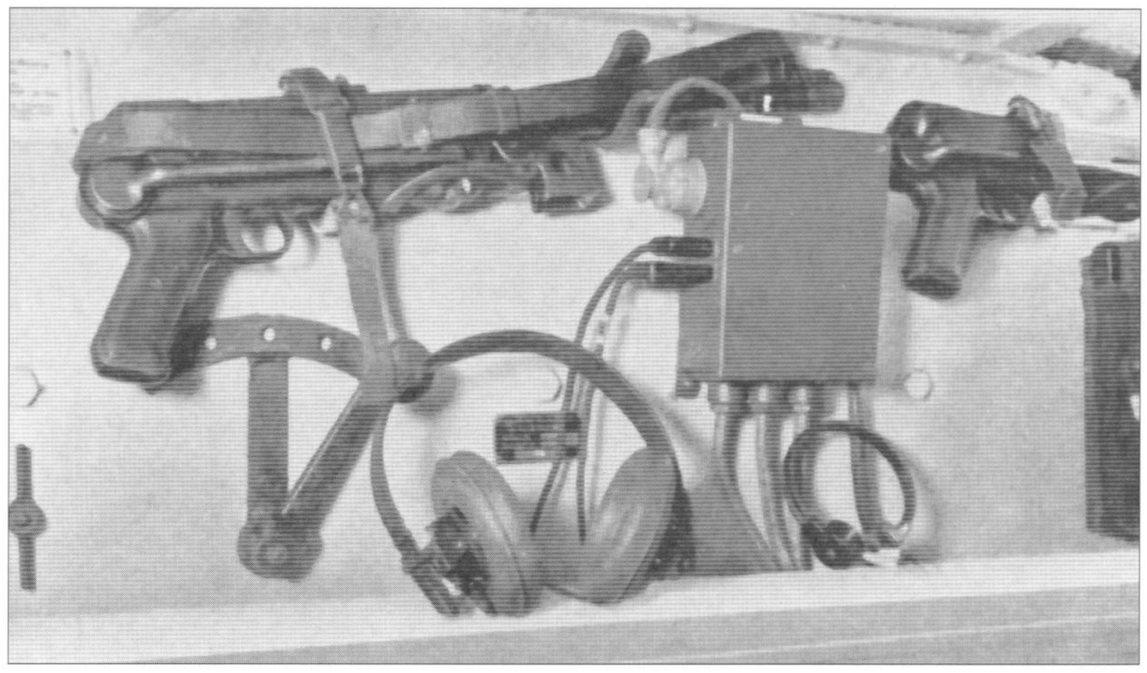
Kpfz. IV

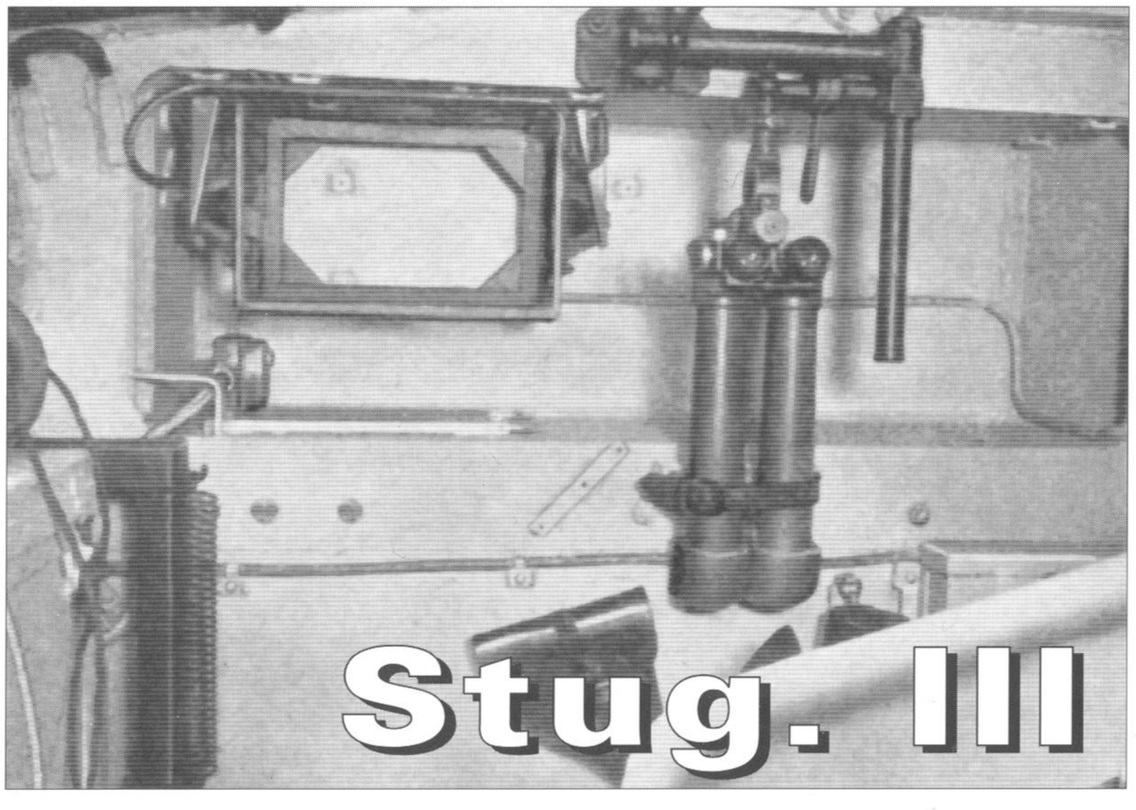
Interior of a Stug. III Ausf. G with a unified Fu 5 set.

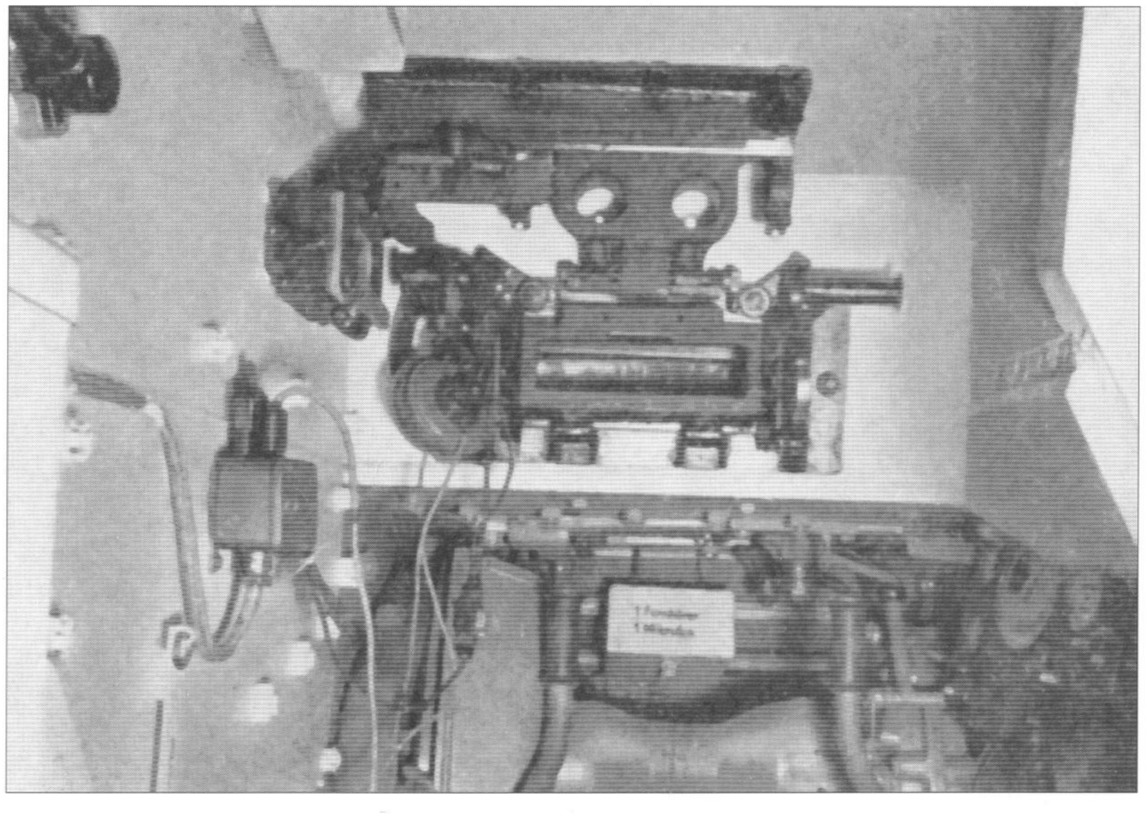




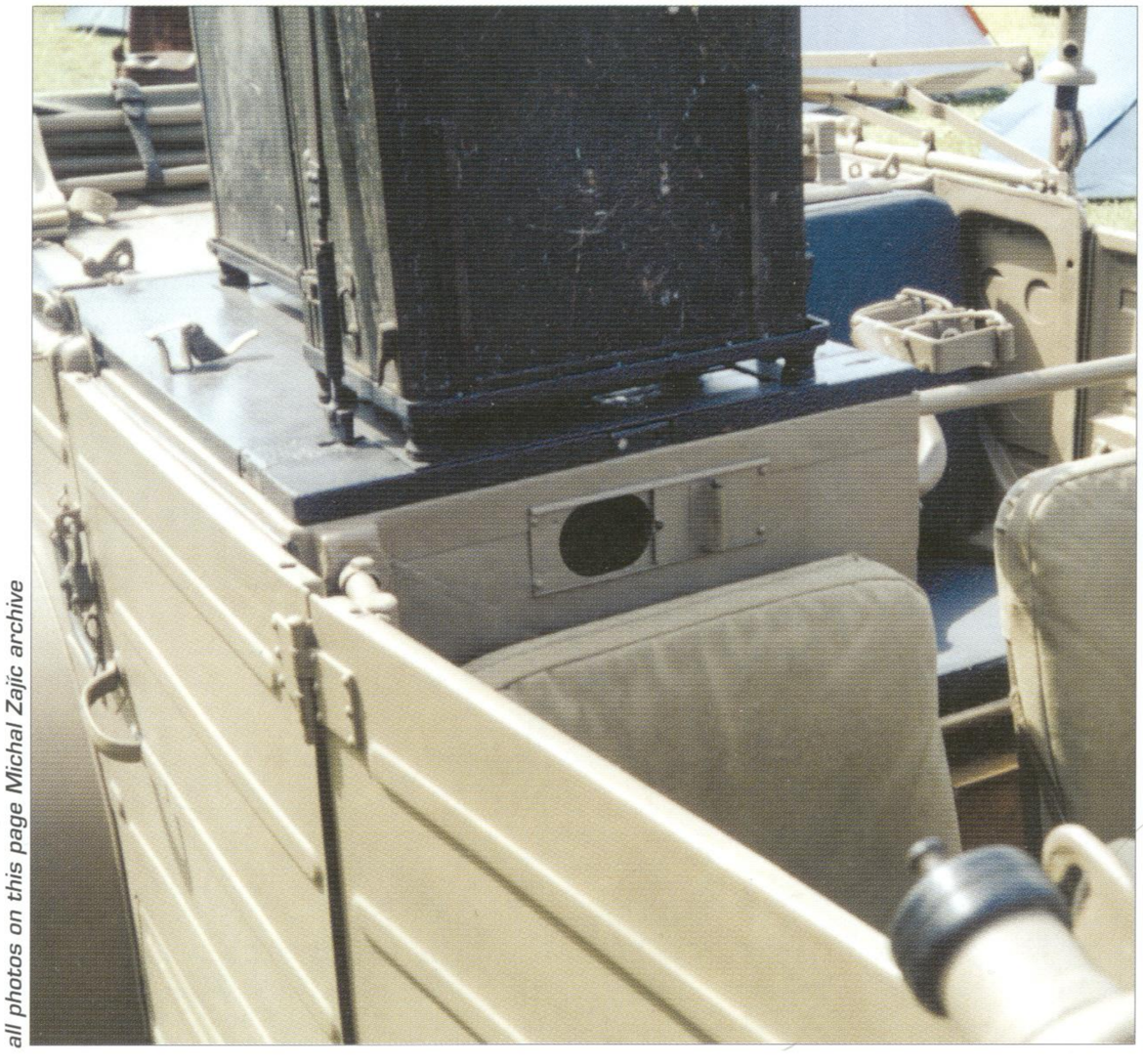




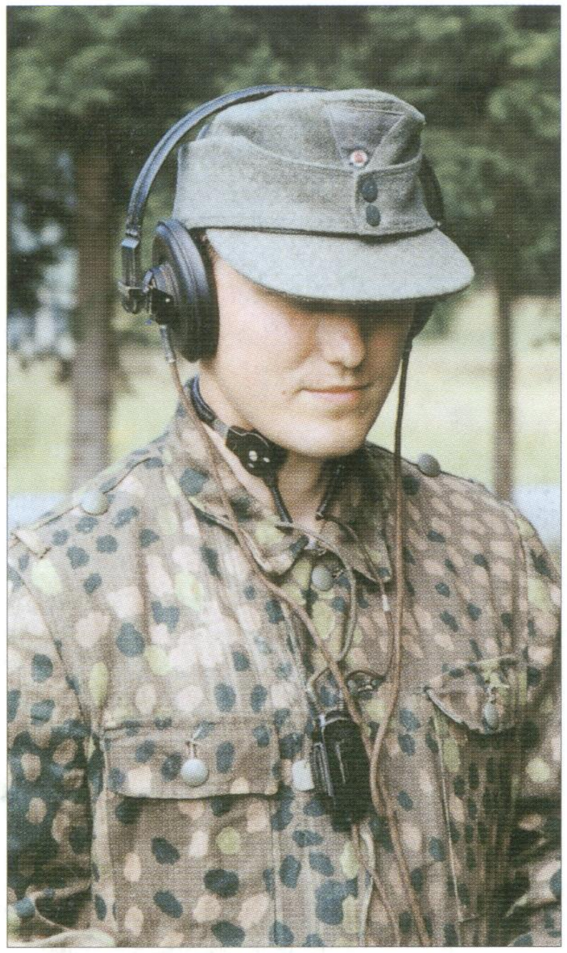


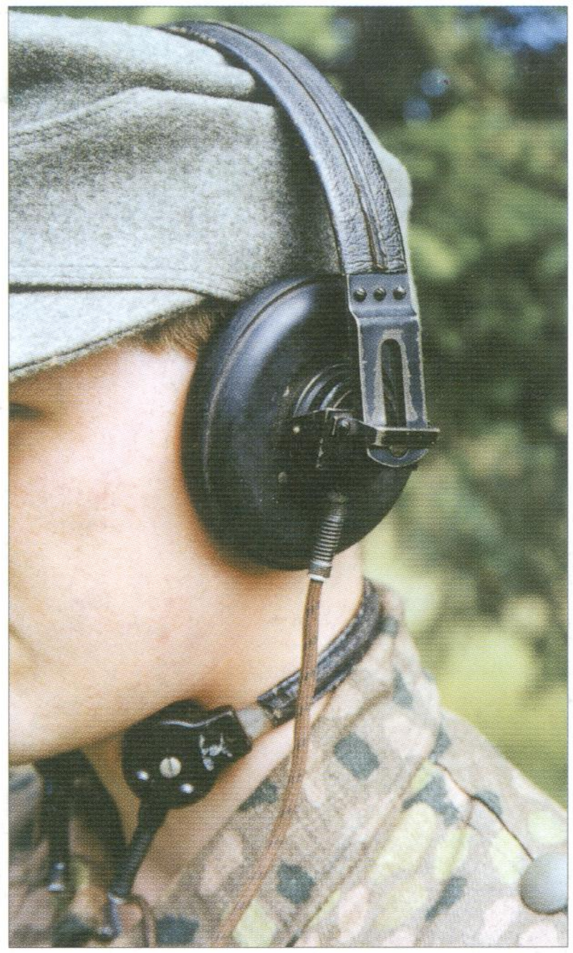


A reconstruction of a Kfz. 2 radio van with a Torn.Fu.f. set. Photo taken in Britain in 1996. These vehicles had minor design alterations. There was a strengthened antenna holder on the left hand wall inside the vehicle,
The weapon holder was only a half-size, right rear door had a lock and the whole vehicle was electronically shielded to a higher, B2 degree; its electic wiring was more thoroughly sheathed, cables were thicker, distributor was several times bigger, while the windshield wipers were bigger etc. The rod passing thought small cubes behind the rear seat is part of the antenna shielding (picture above).

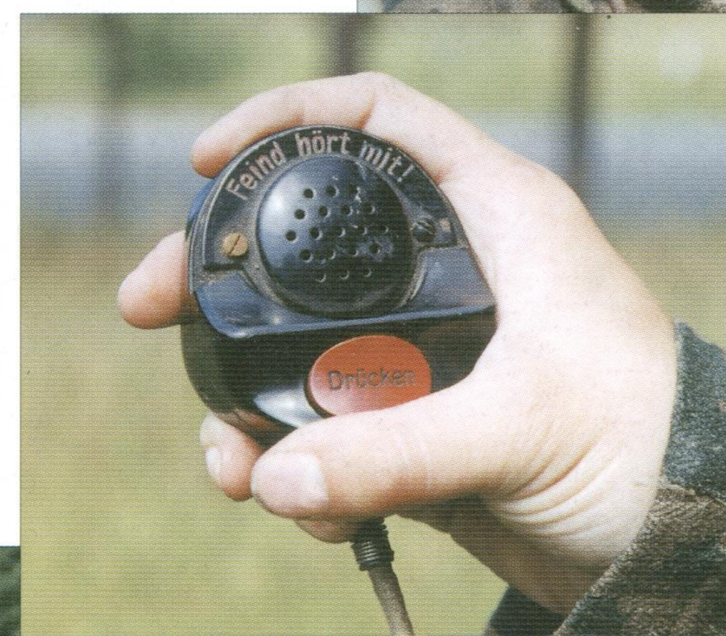


all photos on this page Michal Zajic archive



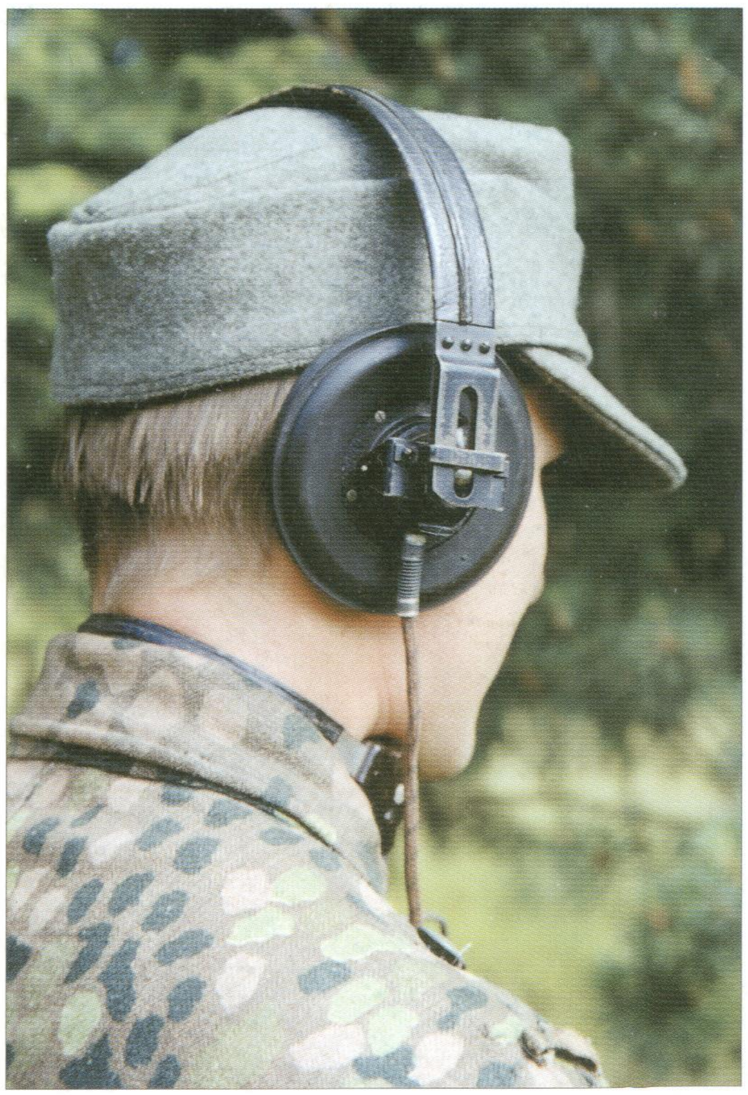


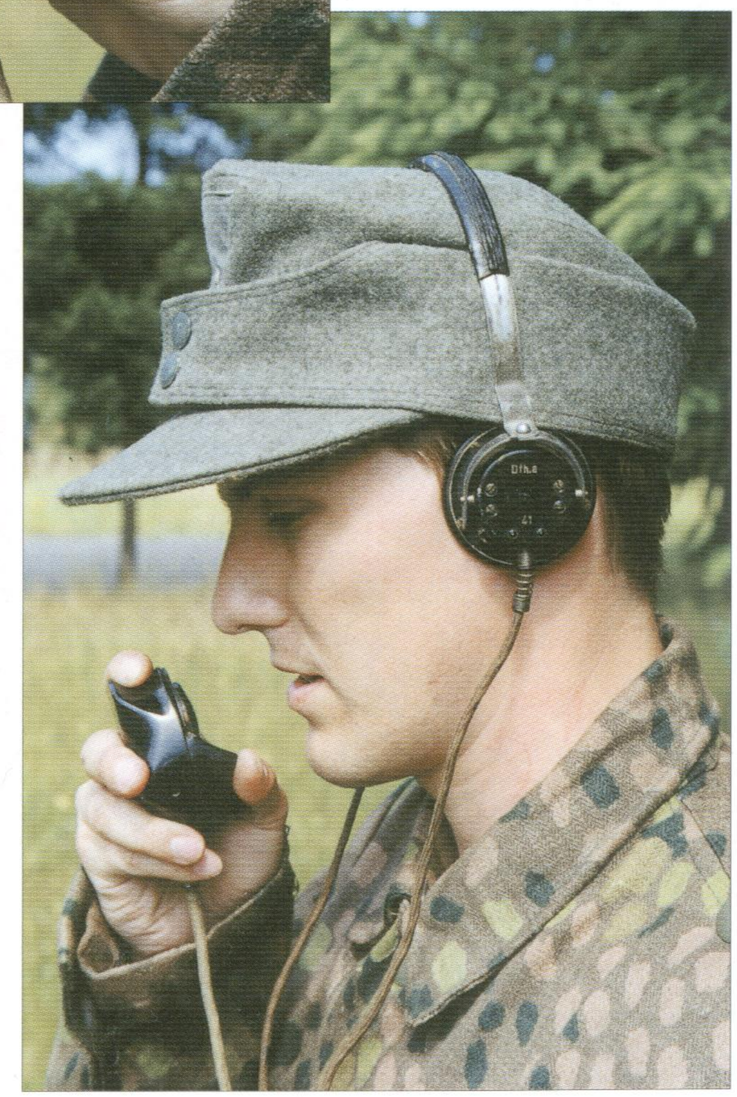
Left tank headphones Dfh.b, right throat microphone.



Left a perfectly ergonomic design of a hand-held microphone with the usual Enemy listens warning.

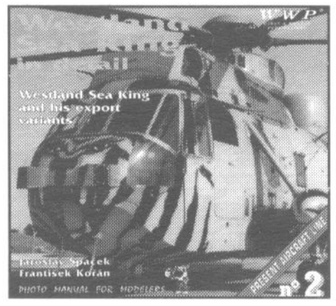
Bottom from left tank Dfh.b headphones, older type of Telefunken gear, newer type of Dfh.a headphones.

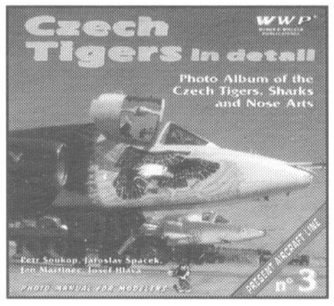


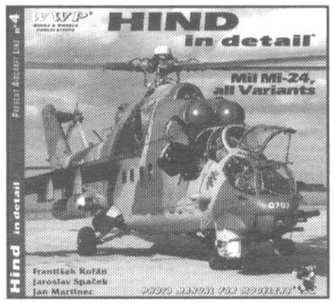


W&W PUBLICATIONS ALREADY ISSUED

BLUE present aircraft line

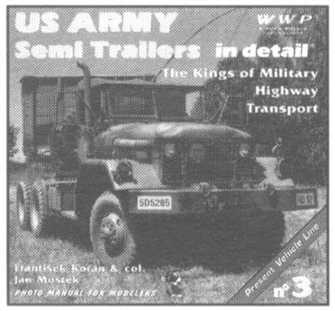


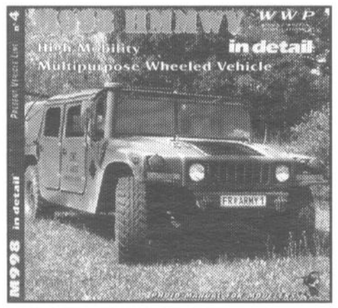




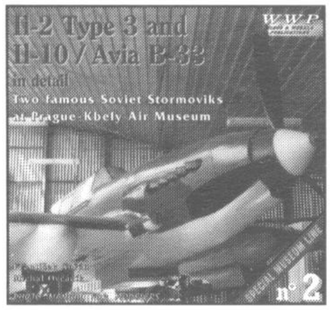
YELOW History Profile line

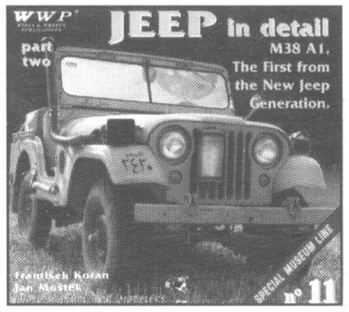
GREEN present wheels line

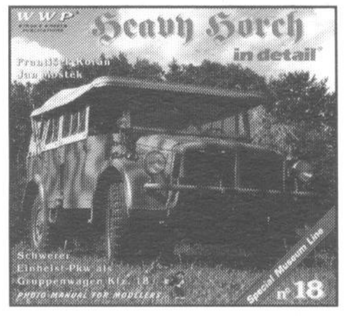


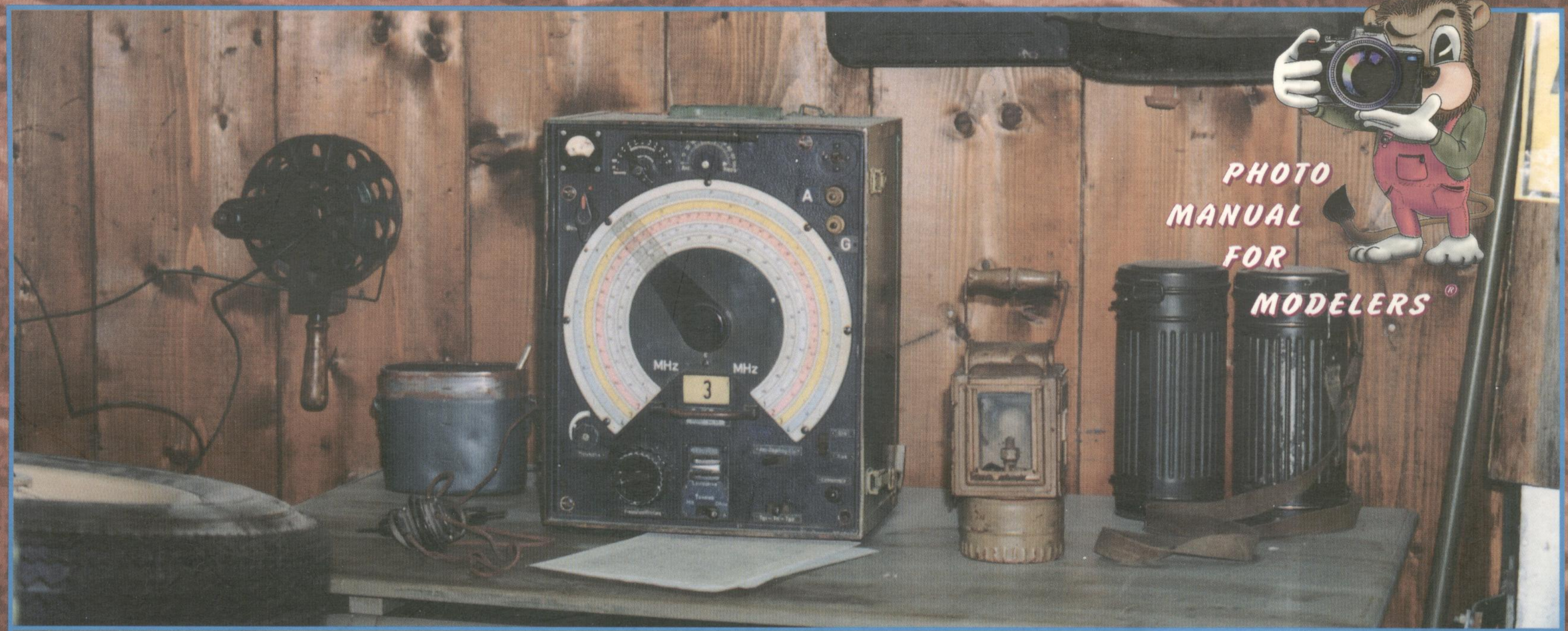


RED special museum line publications issued in 1996 - 2001 years.









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