

X Gerät (AIRBORNE RECEIVER)		NOMENCLATURE DESIGNATION:	INSTRUCTIONAL LITERATURE:		
TECHNICAL CHARACTERISTICS FREQUENCY RANGE: (Mc) 66.5-75.0 (TWO RECEIVERS, SAME RANGE). NUMBER OF CRYSTALS: NONE. PRESET FREQUENCIES: ONE CLICK STOP. ANTENNA: TWO ANTENNAS EACH CONSISTING OF A QUARTER-WAVE VERTICAL ROD. TUNING: (MO OR CRYSTAL) MANUAL. SENSITIVITY: 1 MICROVOLT INPUT FOR 50 MILLIWATTS OUTPUT 15 DB S/N RATIO. SELECTIVITY: 40 DB DOWN FOR 456 KC TOTAL BAND WIDTH WITHOUT REGENERATION AND 73 KC WITH REGENERATION. 20 DB ± 150 C/S EITHER SIDE OF 2000 C/S. POWER SOURCE: SPECIAL X-GERÄT POWER UNIT. SIMILAR SETS: POWER OUTPUT: (WATTS) TUBES: (TYPE AND NUMBER) 20 RV 12 P 2000		TACTICAL CHARACTERISTICS USE: IN BOMBER AIRCRAFT FOR BLIND BOMBING ON CROSS BEAMS. IT IS FITTED IN HE III H. TYPE OF SIGNAL: DOT-DASH, LEFT-RIGHT BEAMS. RANGE: (MILES) ABOUT 250. TO COMMUNICATE WITH: GROUND STATION. TO REPLACE IN PART: TRANSPORTATION: AIRBORNE.			
PRINCIPAL COMPONENTS		HEIGHT	WIDTH	DEPTH	WEIGHT
COMBINED WEIGHT OF COMPONENTS:					
R E M A R K S					
THE X-GERÄT IS A SPECIALIZED BLIND-BOMBING DEVICE. IT CONSISTS OF TWO RECEIVERS, TWO QUARTER-WAVE ANTENNAS, AUDIO UNITS, VISUAL INDICATORS AND THE X-GERÄT CLOCK. IT OPERATES ON THREE MAIN BEAMS. ONE, THE PILOT'S BEAM, LAID OVER THE TARGET AS A ROUTE INDICATOR, IS CROSSED BY TWO OBSERVER'S BEAMS WHICH MEASURE OFF A KNOWN DISTANCE (10 KMS OR 15 KMS) FROM THE TARGET. DOT OR DASH SIGNALS RECEIVED ON ONE OR THE		OTHER SIDE OF THE PILOT'S BEAM ARE INTERPRETED IN THE AUDIO UNIT ANALYZER AS POSITIVE OR NEGATIVE D-C CURRENT IN A COURSE METER. THE SECOND RECEIVER OPERATES ON THE FREQUENCY OF BEAMS ARRANGED TO CROSS THE COURSE BEAM AT APPROXIMATELY 90°. WHEN THE OBSERVER GETS THE SIGNAL (EITHER AURALLY OR ON THE CROSS-BEAM METER) THAT THE AIRCRAFT IS CROSSING THE CENTER OF THE BEAM, HE STARTS THE CLOCK MANUALLY. WHEN THE AIRCRAFT CROSSES		THE SECOND BEAM, HE PUTS THE INFORMATION INTO THE CLOCK; THE TIMING HAND WHICH HAD BEGUN TO MOVE WHEN THE CLOCK WAS STARTED NOW STOPS AND ANOTHER HAND STARTS. THE CONNECTION MADE WHEN THE TWO HANDS MEET RELEASES THE BOMB. LATEST INFORMATION INDICATES THAT THIS SET DID NOT ADVANCE BEYOND THE PROTOTYPE STAGE.	

**X GERÄT (AIRBORNE RECEIVER)
MOUNTED ON PANEL.**

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<p><u>PRINCIPAL COMPONENTS</u></p>		HEIGHT	WIDTH	DEPTH	WEIGHT		
<p>COMBINED WEIGHT OF COMPONENTS:</p>							
R E M A R K S							
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X GERAT (AIRBORNE RECEIVER)
MOUNTED ON PANEL.

THIS SHEET IS CLASSIFIED: **RESTRICTED**

INSTRUCTIONAL LITERATURE:

NOMENCLATURE DESIGNATION:

(AIRBORNE RECEIVER) Y Gerät

TECHNICAL CHARACTERISTICS

FREQUENCY RANGE: (Mc) 42.1-47.9
 NUMBER OF CRYSTALS: NONE
 PRESET FREQUENCIES: FOUR CLICK STOPS ON TUNING KNOB.
 ANTENNA: VERTICAL ROD ABOVE FUSELAGE AND RETRACTABLE ANTENNA BELOW, MOTOR DRIVEN. THE RETRACTABLE ANTENNA IS USED FOR RETRANSMITTING AND EXTENDS THROUGH THE FLOOR OF THE AIRCRAFT WHEN THE UNDERCARRIAGE IS RAISED.
 TUNING: (MO OR CRYSTAL) MANUAL (MO)
 SENSITIVITY: GOOD: 30 MICROVOLTS ACROSS 50-OHM INPUT TO GIVE 5 MILLIWATTS OUTPUT 30% MODULATION.
 SELECTIVITY: 6 DB FOR 25 KC TOTAL BAND WIDTH.
 POWER SOURCE: DYNAMOTOR U-17 SUPPLIES 450 VOLTS 165 MILLIAMPERES, 165 VOLTS, 5 MILLIAMPERES FOR TRANSMITTER AND 210 VOLTS AT 90 MILLIAMPERES FOR RECEIVER.
 SIMILAR SETS: NONE
 POWER OUTPUT: (WATTS) 10
 TUBES: (TYPE AND NUMBER) DEPENDS UPON THE TYPE OF RECEIVER USED.

TACTICAL CHARACTERISTICS

USE: IN BOMBER AIRCRAFT FOR AIR-TO-GROUND COMMUNICATION AND BOMBING CONTROL. THE GROUND STATION EMPLOYS THE "BENITO" TECHNIQUE WHICH USES ONLY ONE BEAM LAID OVER THE TARGET AS A ROUTE AND TARGET INDICATOR.
 TYPE OF SIGNAL: RECEIVES AND TRANSMITS VOICE OR TONE FOR COMMUNICATION WITH GROUND. RECEIVES TONE FROM BEAMS FOR DISPLAY ON COURSE METER. RECEIVES AND RETRANSMITS TONE FOR RANGE MEASUREMENT BY GROUND STATION.
 RANGE: (MILES) UP TO 250.
 TO COMMUNICATE WITH: GROUND STATION.
 TO REPLACE IN PART:
 TRANSPORTATION: AIRBORNE

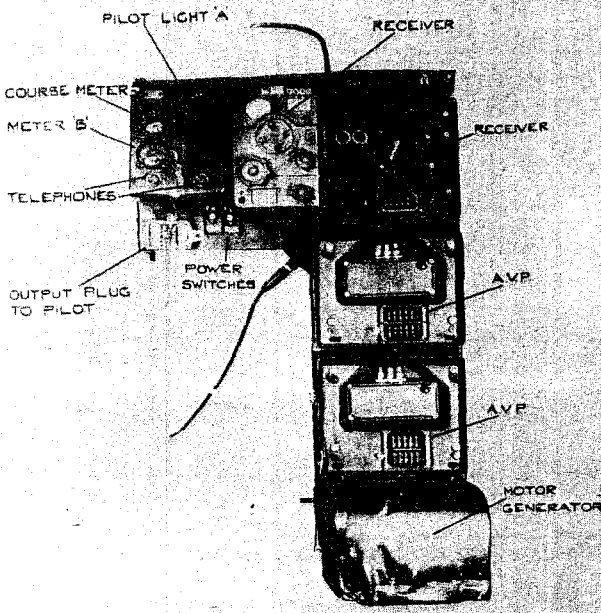
PRINCIPAL COMPONENTS

Receiver E-17-Xb
 Transmitter and receiver FuG 17E
 Dynamotor U-17

HEIGHT	WIDTH	DEPTH	WEIGHT
8"	5 1/2 "	8 1/4"	10 #
8"	15 "	8 1/4"	26 1/2 #
8"	10 "	9 "	15 #

COMBINED WEIGHT OF COMPONENTS:

REMARKS



**Y GERÄT (AIRBORNE RECEIVER)
 COURSE PANEL "L" TYPE**

THE Y-GERÄT IS A LATER DEVELOPMENT THAN THE X-GERÄT, AND ALTHOUGH THE TECHNIQUES INVOLVED ARE SOMEWHAT SIMILAR, THE Y-GERÄT EMPLOYS ONLY ONE INSTEAD OF THE THREE BEAMS THAT ARE CHARACTERISTIC OF THE EARLIER EQUIPMENT. WITH THE Y-GERÄT, THE DISTANCE THE AIRCRAFT HAS TRAVELED ALONG THE BEAM - AND HENCE ITS PROXIMITY TO THE TARGET - IS CALCULATED BY A "BENITO" GROUND CONTROL STATION, THIS STATION SETS THE RANGE OF THE AIRCRAFT BY MEANS OF A MODULATED SIGNAL TRANSMITTED FROM THE GROUND STATION AND RETRANSMITTED BACK TO THE GROUND STATION BY THE AIRCRAFT ON A DIFFERENT FREQUENCY. THE GROUND STATION COMPUTES THE DISTANCE ON THE BASIS OF THE TIME TAKEN FOR THE SIGNAL TO RETURN. THE GROUND STATION PLOTS THE AIRCRAFT

POSITION AND AT THE RIGHT MOMENT GIVES THE ORDER TO RELEASE THE BOMB.
 THE EQUIPMENT IS IN TWO SEPARATE PARTS - A COURSE PANEL AND A RANGE PANEL. THE COURSE PANEL CARRIES A FuG 17 RECEIVER (E-17) FOR RECEIVING THE BEAM AND PASSING THE SIGNAL TO THE AVP WHICH IS A SIGNAL ANALYZER FOR OPERATING THE COURSE METER. THE RANGE PANEL CONSISTS OF THE FuG 17 TRANSMITTER AND RECEIVER UNIT COMPLETE, ARRANGED TO FURNISH AIR-TO-GROUND VOICE COMMUNICATION IN THE NORMAL MANNER AS WELL AS TO PERFORM A FUNCTION OF THE Y-GERÄT. THE RADIO OPERATOR IS RESPONSIBLE FOR THIS PART OF THE EQUIPMENT, PRESSING A KEY AT INTERVALS TO ENABLE SPECIAL GROUND STATIONS TO PINPOINT

THE AIRCRAFT BY COMPARING THE PHASE OF A MODULATION ENVELOPE TRANSMITTED BY THE GROUND STATION WITH THAT RECEIVED AFTER RETRANSMISSION FROM THE AIRCRAFT.
 AN OUTSTANDING FEATURE OF THE Y-GERÄT IS THE USE OF THE OUTPUT FROM THE COURSE PANEL TO CONTROL THE AIRCRAFT BY MEANS OF AN AUTOMATIC PILOT AND A CONTROL BOX LKZG. THIS CONTROL BOX PROVIDES AN OVER-RIDING CONTROL FOR FLYING THE AIRCRAFT BY OPERATING A CHANGE-OVER SWITCH.
 THERE IS EVERY INDICATION THAT THE GERMANS LIKE THIS SYSTEM SINCE THERE HAVE BEEN SEVERAL ADAPTATIONS OF IT.

THIS SHEET IS CLASSIFIED: **RESTRICTED**