

INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

50X1-HUM

This material contains information affecting the National Defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C. Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

S-E-C-R-E-T
NO FOREIGN DISSEM

50X1-HUM

COUNTRY	USSR	REPORT	
SUBJECT	Soviet Manual on Device for Adjusting Telegraph Channels and Relays, Type YaB 2745001	DATE DISTR.	22 September 1964
		NO. PAGES	1
DATE OF INFO.		REFERENCES	50X1-HUM
PLACE & DATE ACQ.			50X1-HUM
			50X1-HUM

THIS IS UNEVALUATED INFORMATION. SOURCE GRADINGS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

1. A 20-page, English-language manual entitled Device for Adjusting Telegraph Channels and Relays, Type YaB 2745001 50X1-HUM
2. The manual describes and gives operating instructions for the device, which "is designed for adjusting and testing telegraph channels and radio communication lines, as well as for checking the neutrality and response of telegraph relay type RP-4 at keying speeds of 50 bauds." Included is a list of circuit components and six figures and circuit diagrams.

Distribution of Attachment:

50X1-HUM

OSI-Retention

5
4
3
2
1

S-E-C-R-E-T
NO FOREIGN DISSEM

GROUP 1
Excluded from automatic
downgrading and
declassification

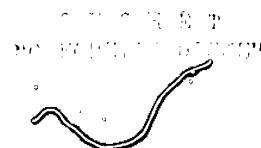
STATE	DIA	ARMY	NAVY	AIR	NSA	X XX NIC			50X1-HUM
(Note: Field distribution indicated by "#".)									

INFORMATION REPORT INFORMATION REPORT

50X1-HUM

ATT

DEVICE FOR ADJUSTING
TELEGRAPH CHANNELS AND
RELAYS Type ЯБ 2745001



GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

S E C R E T
NO FOREIGN DISSEM

ATT

DEVICE FOR ADJUSTING TELEGRAPH
CHANNELS AND RELAYS
Type RB 2.745.001

1962
S E C R E T
NO FOREIGN DISSEM

50X1-HUM

S E C R E T
NO FOREIGN DISSEM

ATT.

-1-

I. DESCRIPTION OF THE DEVICE FOR ADJUSTING TELEGRAPH CHANNELS AND RELAYS

The ПРК device for adjusting telegraph channels and checking relays is designed for adjusting and testing telegraph channels and radio communication lines, as well as for checking the neutrality and response of telegraph relays, type ПИ-4, at keying speeds of 50 Baud.

The device consists of two main parts: a sender of two-polarity signals (dots) and a signal receiver (see Fig. 1).

§1. Sender

The dot sender employs a type ПИ-4 (Р-1) relay (Fig. 5), the windings of which are connected in a vibration circuit. Windings 3-13 and 1-5 of this relay are connected via capacitor C1 and resistors R-23 and R4, respectively, to the centre tap of the divider (resistors R1, R2, R3). The ends of the windings 3 and 5 are connected to the relay armature. Via the rheostat lamps Н1 and Н2, the relay contacts are supplied with a voltage of ±60v.

The sender operates in the following way:

When voltage is supplied, the charging current of the capacitor C1, flowing through winding 3-13, holds the armature at one of the relay contacts. The current flowing through capacitor C1 decreases, as the capacitor charges. The current flowing through winding 1-5 increases at the same time and attracts the armature to the opposite contact.

While the armature is travelling, capacitor C1, discharging via windings 5-1 and 13-3 and resistors R23 and R4, produces a current which maintains the travel of the armature.

On touching the opposite contact, the relay armature forms a charging circuit for capacitor C1 via winding 3-13 and a current circuit via winding 1-5 and resistors R23 and R4. The relay armature is again thrown to the opposite contact, etc.

The keying frequency of the armature is adjusted by means of resistor R23 and is set to 25 c.s. (50 Baud). Resistor R2 serves for setting relay B1 to neutral.

S E C R E T
NO FOREIGN DISSEM

50X1-HUM

S E C R E T
NO FOREIGN DISSEM -2-

ATT

From the armature of relay P1, the current pulses are sent to the winding of the relay P2 which is under test or to the output jacks of the device.

§2. The Receiving Section

The current of the receiving section of the device (Fig.5) serves for measuring the neutrality of two-polarity signals and the letter "T" signals arriving from the radio line, as well as for measuring the neutrality and response of type ПЛ4 relays.

A type M5-2 milliammeter connected in an integrating circuit for measuring predominance serves as an indicator of neutrality of operation of the contact system of relays. The circuit is extremely simple and at the same time provides sufficiently accurate measurements.

Depending on the operating conditions of the device, the measuring circuit is converted, in case of two-polarity operation, into a circuit having a divider with equal legs, and in single-polarity operation into an unbalanced bridge.

Fig.2 shows a simplified diagram of the circuit for measuring the neutrality of two-polarity signals of the device sender proper, the radio line, and the relays to be checked.

With the switch B4 in the position "ПРОВ.ДАТ." ("SENDER CHECK"), two-polarity current pulses of the sender are applied to the measuring circuit. If the pulses are equal in amplitude and duration, the average current flowing through the measuring instrument is zero. Inequality of the pulses in duration or amplitude causes the pointer of the ИП instrument to deflect to one or the other side.

The neutrality of relay P2 is checked in the position "НЕЙТР." ("NEUTRAL") of the switch B4, and the neutrality of two-polarity signals arriving from a radio line in the position "БОДО" ("BAUDOT") of the switch.

When determining the neutrality of two-polarity signals, each scale division of the ИП instrument corresponds to 2 per cent of distortion.

The system for measuring the neutrality of letter "T" signals is shown in Fig.3 (switch B4 is in the

S E C R E T
NO FOREIGN DISSEM

S E C R E T
NO FOREIGN DISSEM

ATT.

-3-

50X1-HUM

position "СИМПЛ. 2ПР." ("SIMPLEX TWO-WIRE"). In this case, in view of the difference in duration of current and currentless letter "T" signals, the measuring instrument is connected across the diagonal of an unbalanced bridge. The bridge is formed by resistors R18 and R19, R20 and R21.

The bridge resistances are selected such that when the letter "T" signals are neutral, the main current flowing through the milliammeter ИП equals zero. In the case of predominance of the signals, the pointer will deflect to one or the other side of zero, depending on the nature of the predominance.

When determining the neutrality of letter "T" signals, each scale division corresponds to five per cent of distortion.

The response of relays being checked is measured with the switch B4, (Fig.4) in the position "ОТДАЧА" (RESPONSE). In this case current flows through the milliammeter ИП only while the armature of relay P2 is between the contacts. While the armature is at one of the contacts, the milliammeter ИП is shortcircuited. The value of the current flowing through the instrument is proportional to the time of travel of the relay armature.

Relay response is calculated in percentage as the difference (100-A)%, where A is the number of divisions to which the meter pointer has deflected. The value of each instrument division is 1%.

In order to protect the instrument from overloads and to ensure high sensitivity, the instrument is shunted via pushbutton B3 by the resistor R22. During measurements the circuit of the shunt R22 is broken by depressing the pushbutton "ЧУВСТВ." (SENSITIVITY).

Capacitors C12 and C13 are intended for damping the oscillation of the ИП meter pointer when measuring.

S3. Power Supply

The device is powered by the converter of the telegraph unit. The supply voltage of +60v is applied to the device via the receptacle marked +60B(+60v), by means of a cable. Correct polarity of the +60 voltage is ensured through the use of a receptacle and plug marked +60 and -60.

S E C R E T
NO FOREIGN DISSEM

50X1-HUM

S E C R E T
NO FOREIGN DISSEM-4-

ATT.

The power of the device is switched on with the aid of the toggle switch B1 located on the front panel.

S4. Construction

The device for adjusting telegraph channels and checking relays is assembled on a horizontal chassis with a vertical front panel. The chassis and front panel are installed in a metal casing (Fig.1). On the front panel are located the milliammeter ИП (М5-2), the supply receptacle, jacks for connecting the telegraph unit, the mode of operation switch (B4), the on/off toggle switch (B1), two receptacles for РЛ-4 relays, the rheostat lamps ЛН1 and ЛН2, the pushbutton B3 ("sensitivity") and the pushbutton B2 "BX. TOK" ("INPUT CURRENT"). A handle is fitted on the top of the case for carrying.

II. BRIEF OPERATING INSTRUCTIONS OF THE DEVICE.

a) Switching the Device on.

In order to switch the device on it is necessary to: connect by means of a cable with two plugs, the receptacles marked +60В (+60v) of the device and the line panel;

switch on the power supply of one of the telegraph channels of the telegraph unit by manipulating the type of supply switch "АКК. СЕТ" ("BATT. MAINS") to the position corresponding to the power supply of the station;

manipulate the on/off toggle switch of the device to the position "БКЖ" (ON).

b) Adjusting the Sender.

Adjustment of the device consists in setting the sender relay to neutral. For this it is necessary to:

set the mode of operation switch of the device in the position "ПРОВ. ДАТ." ("SENDER CHECK");

with the aid of potentiometer "ПРЕОБЛ." ("PREDOMINANCE"), set the milliammeter pointer to zero;

having depressed the pushbutton "ЧУВСТВ." ("SENSITIVITY"), make the milliammeter pointer oscillate around zero, with the aid of the same potentiometer;

release the pushbutton "sensitivity".

c) Checking Relays for Neutrality.

In order to check relays for neutrality it is necessary to:

1. Switch on the device (See switching on of the device);

S E C R E T
NO FOREIGN DISSEM

S E C R E T
NO FOREIGN DISSEM

ATT.

-5-

2. Adjust the two-polarity signal sender according to the method described in the previous section.

3. Plug the relay to be tested into the socket marked "ИСП. РЕЛЕ" ("RELAY UNDER TEST").

4. Turn the mode of operation switch to the position "НЕЙТР." ("NEUTRALITY").

5. Depress the pushbutton "sensitivity" and note the reading of the milliammeter.

If the relay is in order, the meter pointer should oscillate around zero.

d) Checking the Response of the Relays into the Line.

The response of the relay is checked after checking the relay for neutrality. For this it is necessary to:

1. Turn the mode of operation switch of the device to the position "ОТДАЧА" ("RESPONSE").

2. Depress the pushbutton "sensitivity" and note the reading of the milliammeter.

The response of the relay in percentage is calculated by the formula:

$$K = 100 - A$$

where A is the division near which the pointer oscillates.

S E C R E T
NO FOREIGN DISSEM

50X1-HUM

S E C R E T
NO FOREIGN DISSEM

ATT.

-6-

List of Circuit Components

Designa- tion	State standard, specification, drawing	Description and type	Rating	Quan- tity	Note
1	2	3	4	5	6
R ₁	ОЖ0467003TY	Resistor МЛТ-1-2,7 КОМ-II	2.7 K	1	Selected
R ₂	ОЖ0468004TY	Resistor СП-1-26-10 КОМ-13 л	10 K	1	
R ₃	ОЖ0467003TY	Resistor МЛТ-1-5,6 КОМ-II	5,6 K	1	
R ₄	ОЖ0467003TY	Resistor МЛТ-0,5-2,3 КОМ-II	2,3 K	1	Selected
R ₅	ОЖ0467003TY	Resistor МЛТ-0,5-100 ОМ-II	100ohms	1	
R ₆	ОЖ0467003TY	Resistor МЛТ-0,5-100 ОМ-II	100ohms	1	
R ₇	ОЖ0467003TY	Resistor МЛТ-0,5-27 КОМ-II	27 K	1	
R ₈	ОЖ0467003TY	Resistor МЛТ-0,5-27 КОМ-II	27 K	1	
R ₉	ОЖ0467003TY	Resistor МЛТ-0,5-1 КОМ-II	1 K	1	
R ₁₀	ОЖ0467003TY	Resistor МЛТ-0,5-100 ОМ-II	100ohms	1	
R ₁₁	ОЖ0467003TY	Resistor МЛТ-0,5-100 ОМ-II	100ohms	1	
R ₁₂	ЯБ4.679.005	Wire-wound resistor	15 K	1	
R ₁₃	ЯБ4.679.005	Wire-wound resistor	15 K	1	
R ₁₄	ЯБ4.679.006	Wire-wound resistor	5.1 K	1	
R ₁₅	ЯБ5.634.000	Wire-wound resistor	12ohms	1	Selected
R ₁₆	ОЖ0467003TY	Resistor МЛТ-0,5-510 ОМ-I	510ohms	1	
R ₁₇	ОЖ0467003TY	Resistor МЛТ-0,5-18 КОМ-II	18 K	1	Selected
R ₁₈	ЯБ4.679.007	Wire-wound resistor	2 K	1	
R ₁₉	ЯБ4.679.009	Wire-wound resistor	3 K	1	
R ₂₀	ЯБ4.679.009	Wire-wound resistor	3 K	1	
R ₂₁	ТУ4.468.005	Resistor СПО-0,5-680 -3	680ohms	1	
R ₂₂	ОЖ0467004TY	Resistor BC-0,5-470 ОМ-II	47ohms	1	
R ₂₃	ТУ4.685.004	Potentiometer	1000ohms	1	
R ₂₄	ЯБ4.679.008	Wire-wound resistor	6.2 K	1	

S E C R E T
NO FOREIGN DISSEM

50X1-HUM

ATT.

S E C R E T
NO FOREIGN DISSEM

-7-

1	2	3	4	5	6
R ₂₅	ЯБ4.679.006	Wire-wound resistor 5.1 K	1	ПЭЛШКО О-14	
L ₁	ТУ5.775.005	Inductance	1.8 mH	1	530 turns
L ₂	ТУ5.775.005	Inductance	1.8 mH	1	"
L ₃	ТУ5.775.005	Inductance	1.8 mH	1	"
L ₄	ТУ5.775.005	Inductance	1.8 mH	1	"
L ₅	ТУ5.775.005	Inductance	1.8 mH	1	"
L ₆	ТУ5.775.005	Inductance	1.8 mH	1	"
G ₁	ЯБ3.660.005	Telephone jack strip			
G ₂	НИО.364.000	Individual telephone jack ГИТ-II-1-1			
B ₁	НИО.360.606	Toggle switch ПИ-2 2 a			
B _{2,3}	ИГ3.694.000	Pushbutton			
B ₄	НИО.360.605	Switch ПИТ 5П8Н	350 v		
ЛН ₁	TY-1-3-171	Rheostat lamp 80v	30W PT-11		
ЛН ₂	TY-1-3-171	Rheostat lamp 80v	30W PT-1 1		
ИП	ТУМОПП533078-54	Milliammeter M5-2	1-0-1	1	
P ₁	PC0452020TY	Polarizes relay ПИ-4		1	
P ₂	PC4520004СП	Polarized relay ПИ-4		1	
C ₁	ОХ0462022TY	Capacitor МБПЛ-3-200- -5-2x0,5-II	2 mF	1	
C _{2,3}	ОХ0462022TY	Capacitor МБПЛ-3-200- -5-2x0,5-II	0.5 mF	1	In one can
C _{4,5,6}	ОХ0462025TY	Capacitor КБП-Р-110- -10-0,05-III	0.05 mF	3	
C _{7,8}	ОХ0462022TY	Capacitor МБПЛ-3-200- -5-2x0,5-II	0.5 mF	1	In one can
C _{9,10,11}	ОХ0462025TY	Capacitor КБП-Р-110- -10-0,05-III	0.05mF	3	
G _{12,13}	ОХ00.464001.TY	Capacitor 9ГЦ-а-30/100 100mF	2		

S E C R E T
NO FOREIGN DISSEM

50X1-HUM

S E C R E T
NO FOREIGN DISSEM

ATT.

-8-

Table of Wires of Wiring Diagram

Wire Nos	From	To	Wire grade	Length in cm
1	2	3	4	5
1-1	Jack Г2 contact 1	Switch B4 wafer 3 contact 7	МГШВ 0.14mm ²	30
1-2	Switch B4 wafer 3 contact 12	Resistor R21 contact 3	МГШВ 0.14mm ²	30
1-3	Resistor R21 contact 2	Resistor R24	МГШВ 0.14mm ²	30
1-4	Resistor R20	Switch B4 wafer 2 contact 6	МГШВ 0.14mm ²	30
1-5	Resistor R24	Capacitor C13	МГШВ 0.14mm ²	15
1-6	Capacitor C13	Resistor R19	МГШВ 0.14mm ²	20
1-7	Resistor R18	Switch B4 wafer 3 contact 6	МГШВ 0.14mm ²	35
1-8	Resistor R25	Switch B4 wafer 4 contact 12	МГШВ 0.14mm ²	25
1-9	Resistor R18	Earth lug	МГШВ 0.14mm ²	40
2-1	Jack Г2 contact 3	Switch B4 wafer 4 contact 5	МГШВ 0.14mm ²	40
2-2	Switch B4 wafer 4 contact 1	Capacitor C5	МГШВ 0.14mm ²	40
2-3	Capacitor C5	Wafer K ₃ (L2)	МГШВ 0.14mm ²	15
2-4	Wafer K ₃ (L2)	Capacitor C2C3 contact 2	МГШВ 0.14mm ²	35
2-5	Capacitor C2C3 contact 2	Strip K1 cont.Я	МГШВ 0.14mm ²	35
2-6	Capacitor C5	Strip K1 cont.3	МГШВ 0.14mm ²	40
3-1	Strip K1 cont.1	Resistor R23 contact 3	МГШВ 0.14mm ²	35
3-2	Resistor R23 contact 2	Resistor R4	МГШВ 0.14mm ²	30
3-3	Resistor R4	Resistor R2 contact 2	МГШВ 0.14mm ²	20
3-4	Resistor R2 contact 1	Resistor R1	МГШВ 0.14mm ²	25
3-5	Resistor R1	Pushbutton B2	МГШВ 0.14mm ²	30
3-6	Pushbutton B2	Lamp ПН2	МГШВ 0.14mm ²	40
3-7	Lamp ПН2	Switch B4 wafer 2 contact 9	МГШВ 0.14mm ²	35
3-8	Switch B4 wafer 2 contact 9	Capacitor C4	МГШВ 0.14mm ²	28
3-9	Capacitor C4	Wafer K ₃ (L1)	МГШВ 0.14mm ²	15

S E C R E T
NO FOREIGN DISSEM
4U FOREIGN DISSEM

50X1-HUM

NO FOREIGN DISSEM

ATT.

-9-

1	2	3	4	5
3-10	Wafer K ₃ (L1)	Resistor R5	МГШВ 0.14mm ²	29
3-11	Resistor R5	Strip K1 cont.	МГШВ 0.14mm ²	15
4-1	Pushbutton B2	Resistor R7	МГШВ 0.14mm ²	23
4-2	Resistor R17	Switch B4 wafer 1 contact 9	МГШВ 0.14mm ²	27
4-3	Switch B4 wafer 1 contact 10	Resistor R13	МГШВ 0.14mm ²	25
4-4	Resistor R12	Resistor R8	МГШВ 0.14mm ²	35
4-5	Resistor R3	Lamp J/H1	МГШВ 0.14mm ²	40
4-6	Lamp J/H1	Capacitor C6	МГШВ 0.14mm ²	50
4-7	Capacitor C6	Switch B4 wafer 2 contact 1	МГШВ 0.14mm ²	23
4-8	Capacitor C6	Strip K3 (L3)	МГШВ 0.14mm ²	11
4-9	Wafer K ₃ (L3)	Resistor R6	МГШВ 0.14mm ²	26
4-10	Resistor R6	Strip K1 contact	МГШВ 0.14mm ²	14
4-11	Resistor R6	Capacitor C3 contact 3	МГШВ 0.14mm ²	26
4-12	Capacitor C2 contact 1	Resistor R5	МГШВ 0.14mm ²	25
4-13	Resistor R3	Toggle switch B1 contact 1	МГШВ 0.14mm ²	22
4-14	Toggle switch B1 contact 3	Jack Г contact "+"	МГШВ 0.14mm ²	11
4-15	Resistor R3	Capacitor C1	МГШВ 0.14mm ²	34
4-16	Capacitor C1	Strip K1 contact 13	МГШВ 0.14mm ²	36
4-17	Resistor R17	Switch B4 wafer 3 contact 2	МГШВ 0.14mm ²	15
4-18	Resistor R4	Resistor R3	МГШВ 0.14mm ²	4
5-1	Jack Г contact "-"	Toggle switch B1 contact 4	МГШВ 0.14mm ²	15
5-2	Toggle switch B1 contact 2	Switch B4 wafer 1 contact 7	МГШВ 0.14mm ²	17
6-1	Resistor R7	Strip K2 contact 4	МГШВ 0.14mm ²	20
6-2	Strip K2 contact 1	Resistor R9	МГШВ 0.14mm ²	14
6-3	Resistor R9	Switch B4 wafer 4 contact 3	МГШВ 0.14mm ²	24
7-1	Switch B4 wafer 2 contact 7	Capacitor C9	МГШВ 0.14mm ²	35
7-2	Capacitor C9	Wafer K ₃ (L4)	МГШВ 0.14mm ²	10

S P E C I A L
NO FOREIGN DISSEM

50X1-HUM

~~SECRET~~

NO FOREIGN DISSEM

ATT.

-10-

1	2	3	4	5
7-3	Wafer K3 (I4)	Resistor R10	МГШВ 0.14mm ²	24
7-4	Resistor R10	Strip K2	МГШВ 0.14mm ²	10
7-5	Resistor R10	Contact II	МГШВ 0.14mm ²	26
8-1	Switch B4 wafer 3 contact 5	Capacitor C7 C8, contact 1	МГШВ 0.14mm ²	35
8-2	Capacitor C12	Capacitor C12	МГШВ 0.14mm ²	35
8-3	Switch B4 wafer 4 contact 10	Switch B4 wafer 4 contact 9	МГШВ 0.14mm ²	35
9-1	Switch B4 wafer 4 contact 7	Resistor R14	МГШВ 0.14mm ²	23
9-2	Pushbutton B3	Pushbutton B3	МГШВ 0.14mm ²	37
9-3	Resistor R16	Resistor R22	МГШВ 0.14mm ²	30
9-4	Pushbutton B3	Switch B4 wafer 3 contact 1	МГШВ 0.14mm ²	20
9-5	Meter ИП	Meter ИП	МГШВ 0.14mm ²	20
10-1	Switch B4 wafer 1 contact 1	Resistor R15	МГШВ 0.14mm ²	28
10-2	Capacitor C10	Capacitor C10	МГШВ 0.14mm ²	25
10-3	Wafer K3 (I5)	Wafer K3 (I5)	МГШВ 0.14mm ²	12
10-4	Capacitor C7,C8, contact 2	Capacitor C7,C8, contact 2	МГШВ 0.14mm ²	35
10-5	Capacitor C7,C8, contact 3	Strip K2 contact Я	МГШВ 0.14mm ²	28
10-6	Resistor R11	Resistor R11	МГШВ 0.14mm ²	28
10-7	Resistor R11	Strip K2 contact II	МГШВ 0.14mm ²	15
10-8	Wafer K3	Wafer K3 (I6)	МГШВ 0.14mm ²	25
10-9	Capacitor C11	Capacitor C11	МГШВ 0.14mm ²	10
10-10	Jack Г 2 cont.2	Switch B4 wafer 2 contact 2	МГШВ 0.14mm ²	25
		Earth lug	МГШВ 0.14mm ²	20
			Black	

~~SECRET~~
NO FOREIGN DISSEM

50X1-HUM

S E C R E T
NO FOREIGN DISSEM

ATT.

- 11 -

FIGURES

Fig.1. Device for Adjusting Telegraph Channels
and Checking Relays

1. Mode of operation switch (B4)
2. Predominance adjusting potentiometer (R2)
3. Supply on/off toggle switch (B1)
4. Supply receptacle (± 60 v)
5. Sender relay (P1)
6. Relay under test (P2)
7. Reception and transmission jack (Tp. Trep.)
8. Incoming current monitoring pushbutton (B2)
9. Pushbutton for connecting milliammeter shunt (B3 sensitiv)
10. Rheostat lamps ($\text{ЛH}_1, \text{ЛH}_2$)
11. Milliammeter M5-2

Fig.2. Circuit for Checking Neutrality of
Two-Polarity Impulses (Baudot)Fig.3. Circuit for Checking Neutrality of
Letter "T" Impulses (Simplex, 2-wire)

Fig.4. Circuit for Measuring Response

Fig.5. Device for Adjusting Telegraph Channels
and Checking Relays (Circuit Diagram)

1. In. current
2. "Rec."
3. "Transm."
4. Windings connection diagram
5. Relay P₁
6. Relay P₂
7. Sensitiv.
8. Response
9. Neutral
10. Sender check
11. Baudot
12. Simplex 2-wire
13. Meter scale division value:

Response	1%
Neutrality	2%
Baudot	2%
Simplex	5%

Fig.6. Device for Adjusting Telegraph Channels
and Checking Relays (Wiring Diagram)S E C R E T
NO FOREIGN DISSEM

50X1-HUM

SECRET
NO FOREIGN DISSEM

ATT.

-12-

C O N T E N T S

1. Description of the Device for Adjusting Telegraph
Channels and Relays
 - § 1. Sender
 - § 2. The Receiving Section
 - § 3. Power Supply
 - § 4. Construction
2. Brief Operating Instructions of the Device
 - a) Switching the Device on
 - b) Adjusting the Sender
 - c) Checking the Relays for Neutrality
 - d) Checking the Response of Relays into the Line

List of Circuit Components

Table of Wires in Wiring Diagram

Circuit Diagram of the Device for Adjusting Telegraph

Channels and Checking Relays (Drawing 952.745.001 CX 9)

Wiring Diagram of the Device for Adjusting Telegraph

Channels and Checking Relays (Drawing 952.745.001 CXM)

SECRET
NO FOREIGN DISSEM

50X1-HUM

S E C R E T
NO FOREIGN DISSEM

ATT.

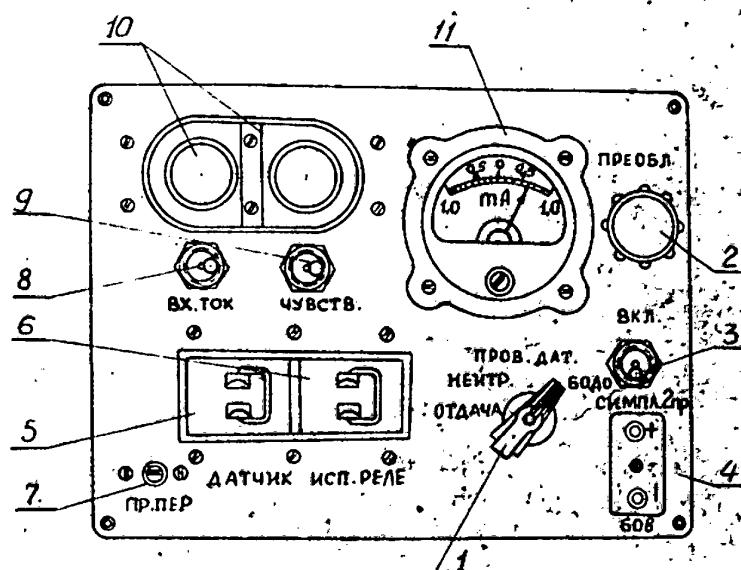


Fig.1 Device for Adjusting Telegraph Channels and Checking Relays.

1. Mode of operation switch (B4).
2. Predominance adjusting potentiometer (R2).
3. Supply on/off toggle switch (B1).
4. Supply receptacle ($\pm 60v$).
5. Sender relay (P1).
6. Relay under test (P2).
7. Reception and transmission jack (Пр.Пеп).
8. Incoming current monitoring pushbutton (B2).
9. Pushbutton for connecting milliammeter shunt (B3 - sensitiv).
10. Rheostat 1amps ($\Pi H_1; \Pi H_2$).
11. Milliammeter M5-2.

S E C R E T
NO FOREIGN DISSEM

50X1-HUM

ATT.

S E C R E T
NO FOREIGN DISSEM

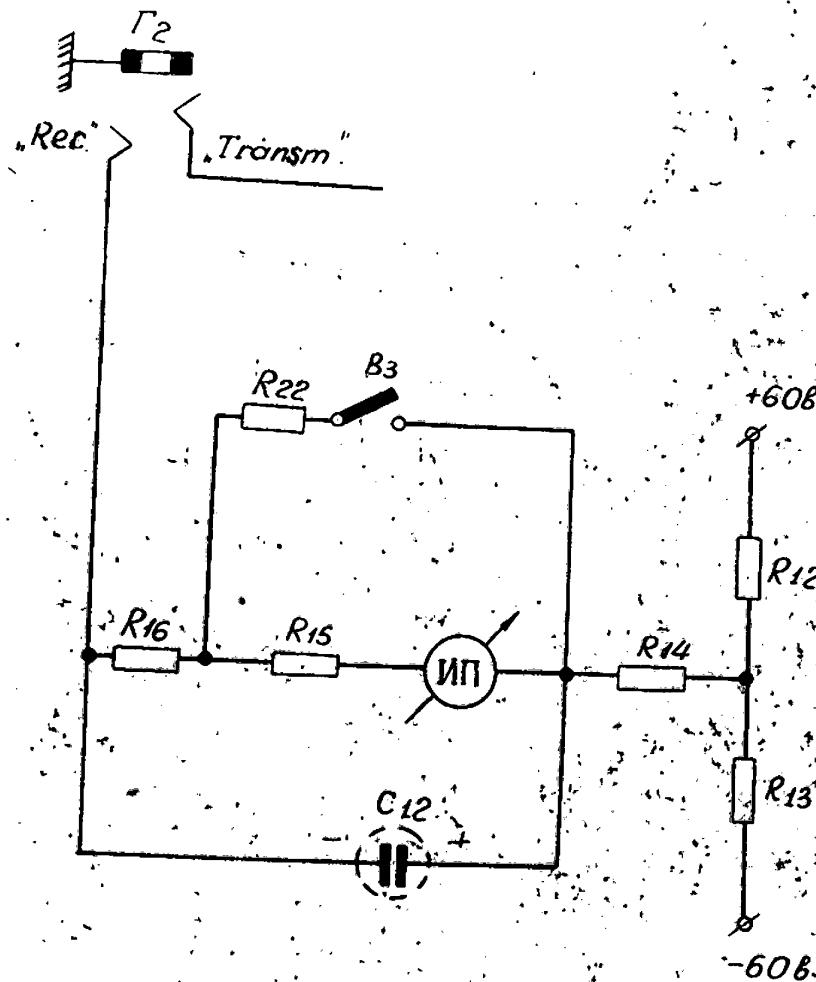


Fig. 2. Circuit for Checking Neutrality of Two-Polarity Impulses. (Baudot).

S E C R E T
NO FOREIGN DISSEM

50X1-HUM

ATT.

S E C R E T
NO FOREIGN DISSEM

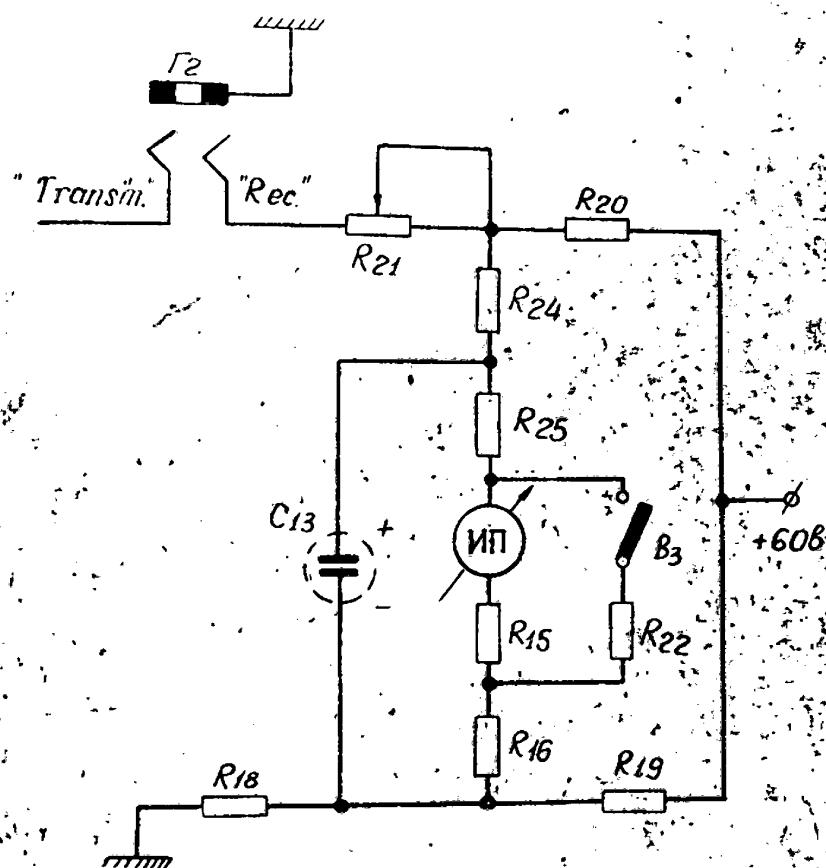


Fig.3 Circuit for Checking Neutrality
of Letter "T" Impulses (Simplex 2-wire)

S E C R E T
NO FOREIGN DISSEM

50X1-HUM

ATT.

SECRET
REF ID: A65742

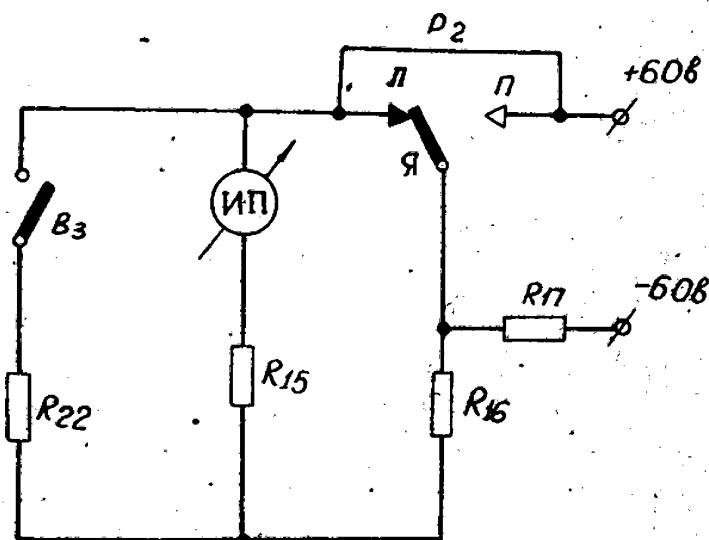
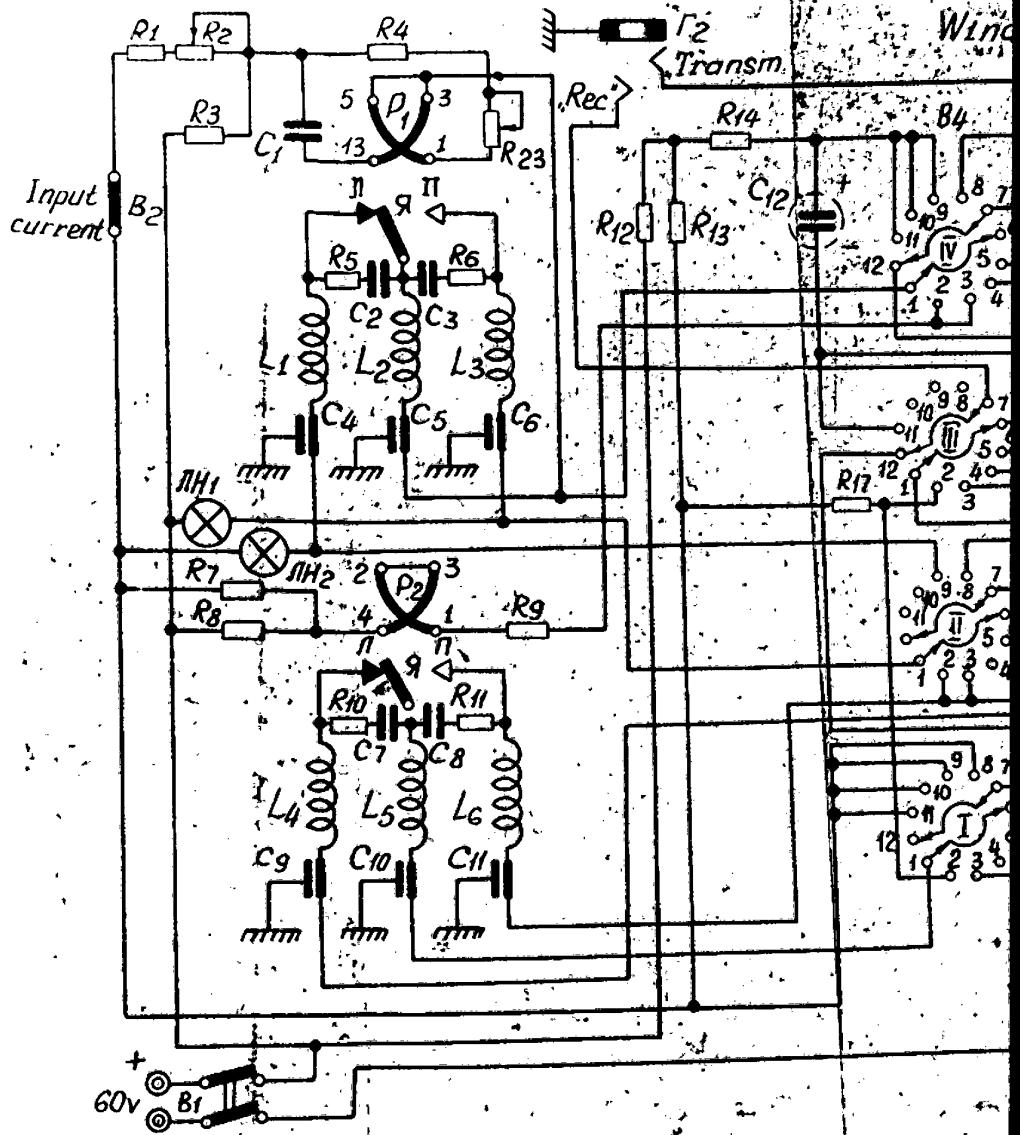


Fig 4. Circuit for Measuring
Response.

SECRET
REF ID: A65742

50X1-HUM

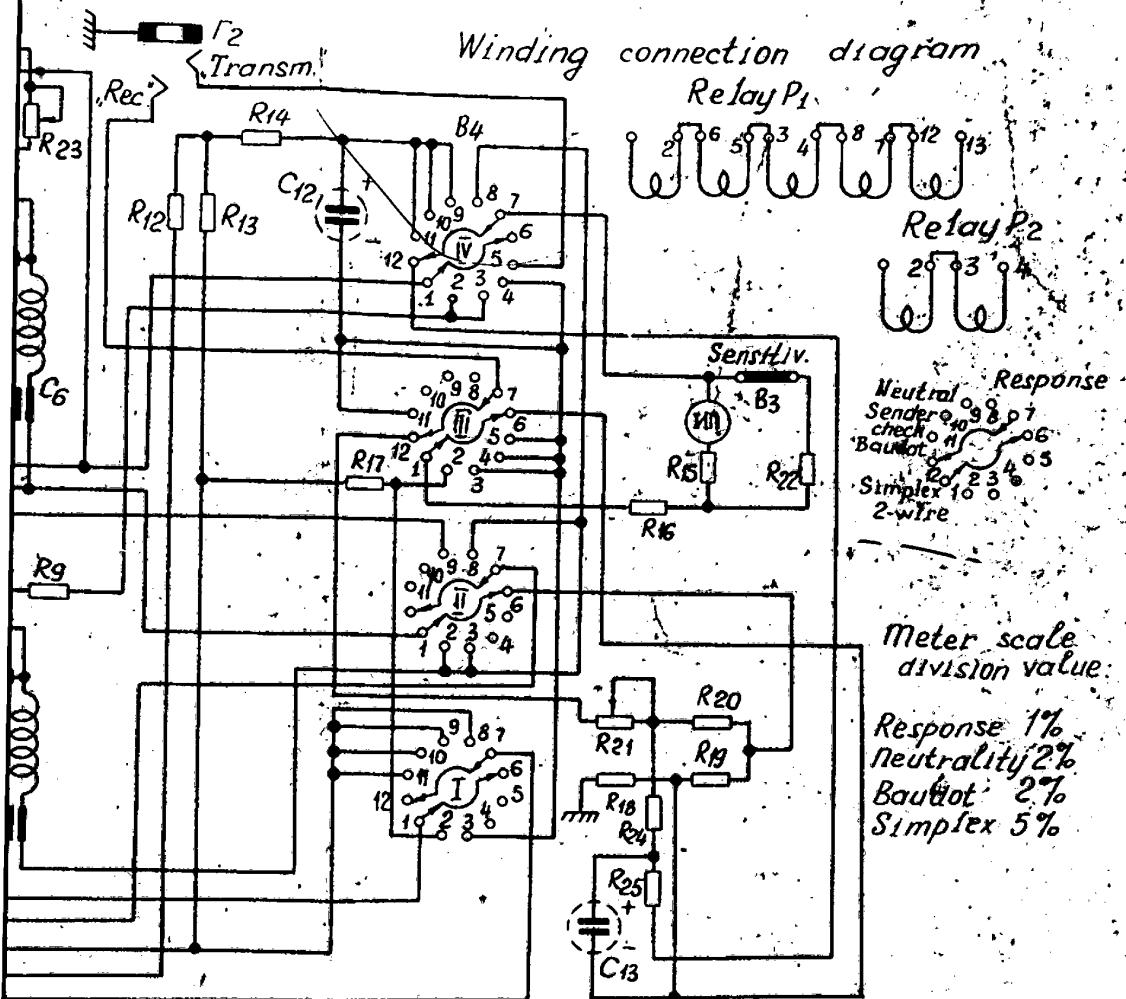
ATT.

S E C R E T
NO FOREIGN DISSEMFig.5 Device for Adjusting
and Checking Relays (CircuS E C R E T
NO FOREIGN DISSEM

50X1-HUM

ATT.

S E C R E T
NO FOREIGN DISSEM



Device for Adjusting Telegraph Channels
Checking Relays (Circuit Diagram).

S E C R E T
NO FOREIGN DISSEM

50X1-HUM

S E C R E T
NO FOREIGN DISSEM

ATT.

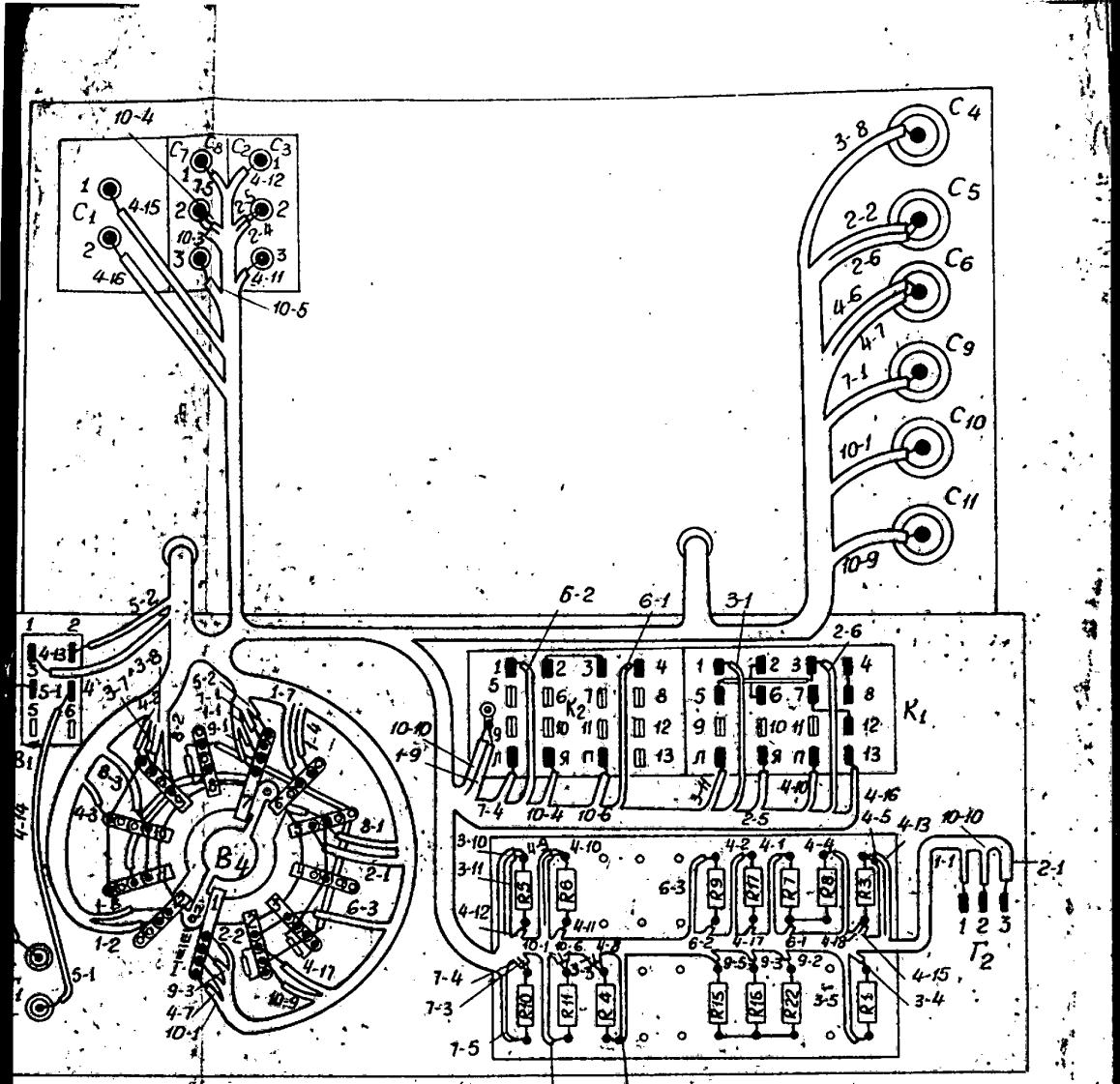


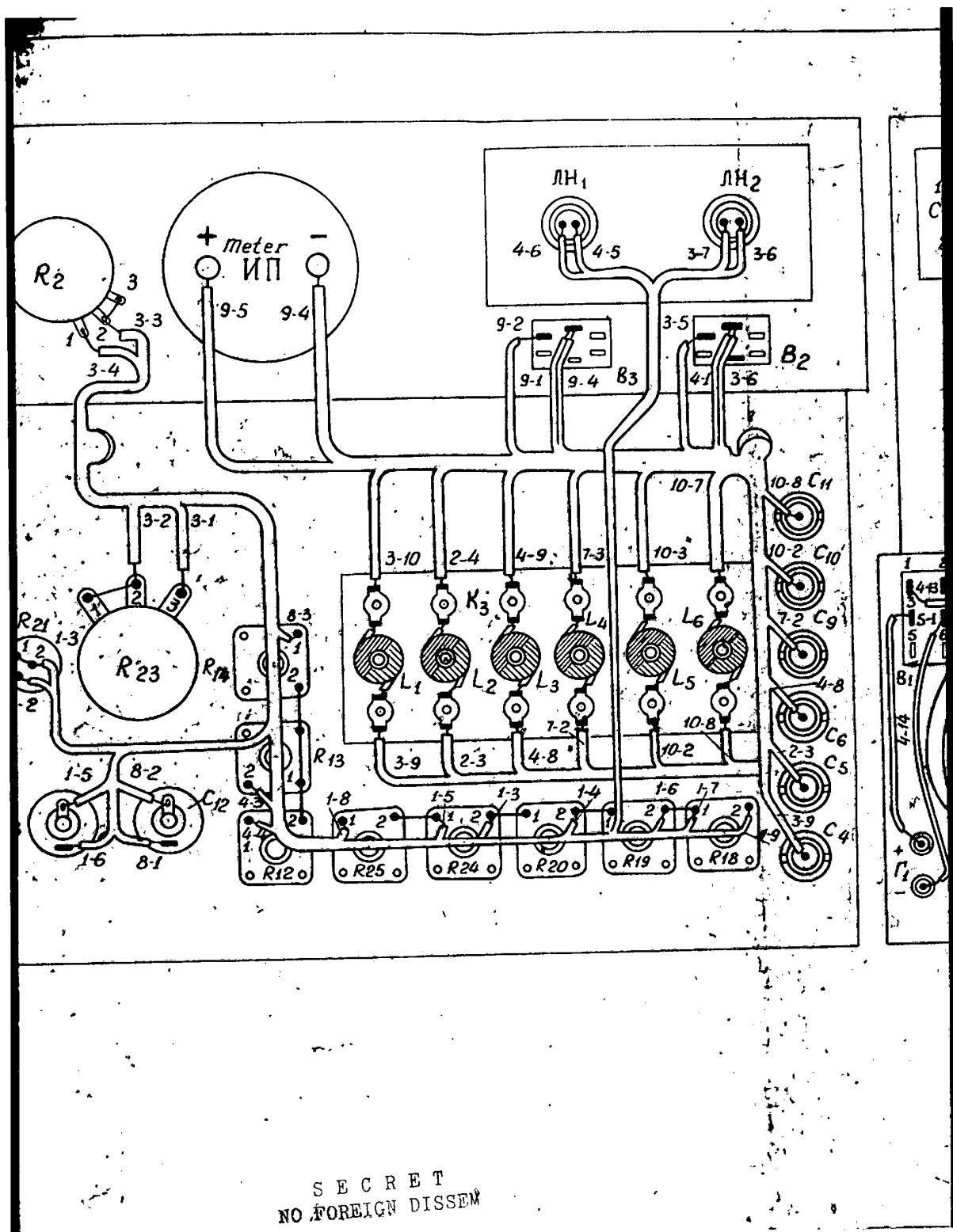
Fig. 6. Device for Adjusting Telegraph Channels
and Checking Relays (Wiring Diagram).

S E C R E T
NO FOREIGN DISSEM

50X1-HUM

S E C R E T
NO FOREIGN DISSEM

ATT.

S E C R E T
NO FOREIGN DISSEM