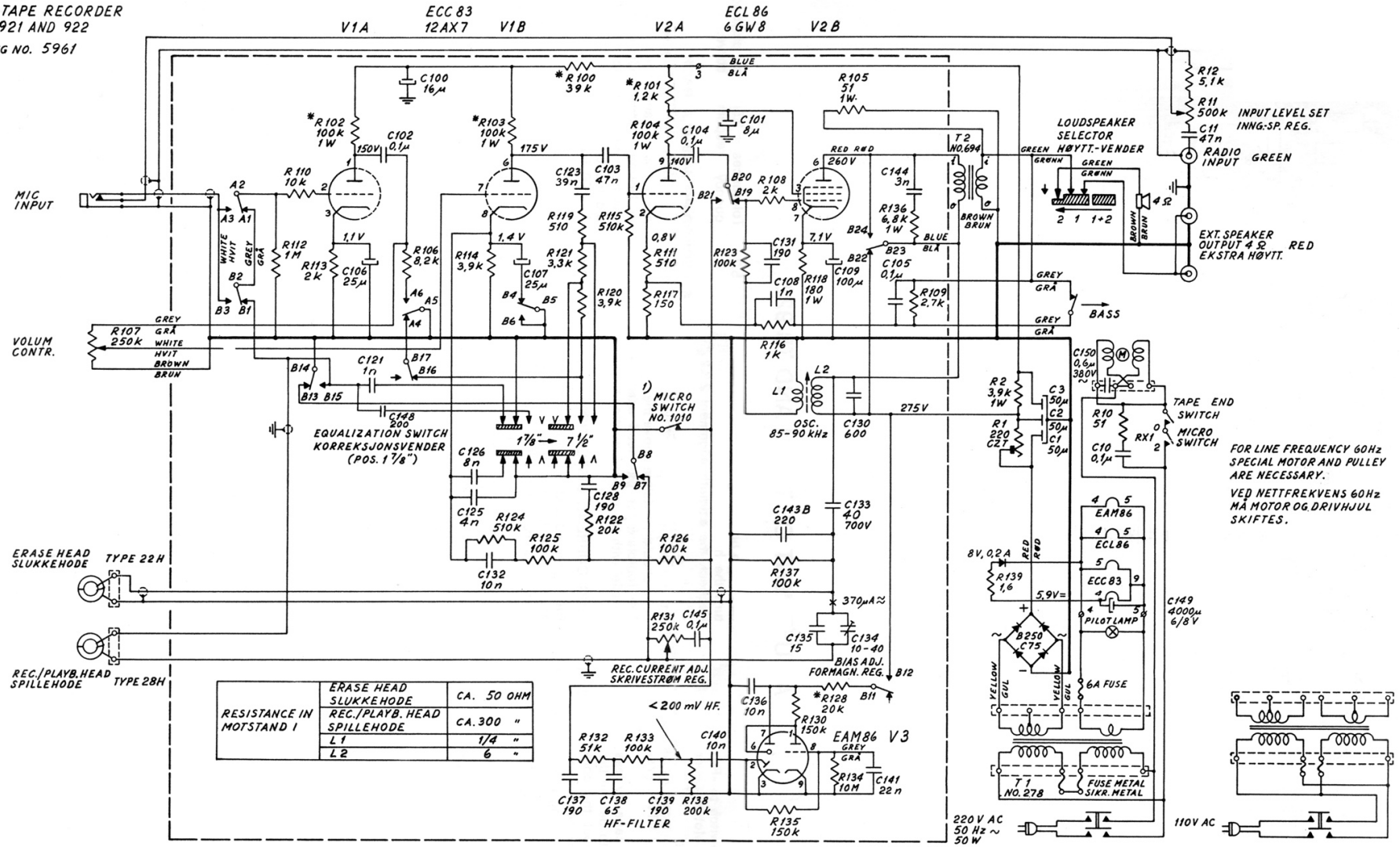
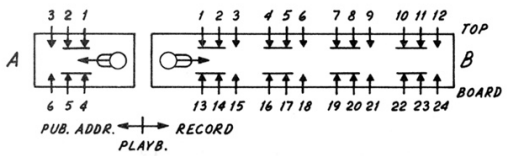
TANDBERG TAPE RECORDER
MODEL 921 AND 922

DRAWING NO. 5961



RESISTANCE IN MOTSTAND I		
	ERASE HEAD SLUKKEHODE	CA. 50 OHM
	REC./PLAYB. HEAD SPILLEHODE	CA. 300 "
	L1	1/4 "
	L2	6 "



MODE SWITCH IN POS. „PLAYB."
FUNKSJONSVENDER I STILLING „PLAYB."

1) TO PREVENT DC PULSES TO PASS THROUGH THE REC./PLAYB. HEAD, THIS MICRO SWITCH MUST SHORTCIRCUIT BEFORE ANY OTHER CONTACTS ARE MADE WHEN THE B SWITCH MOVES FROM „RECORD" TO „PLAYBACK".

FOR Å HINDRE AT LIKESTRØMSPULSER PASSERER GJENNOM SPILLEHODET, SKAL MICROBRYTEREN KORTSLUTTE FØR NOEN ANNEN KONTAKTDANNELSE INNTREFFER NÅR VENDER B BEVEGER SEG FRA „RECORD" MOT „PLAYBACK".

NAB - EQUALIZATION

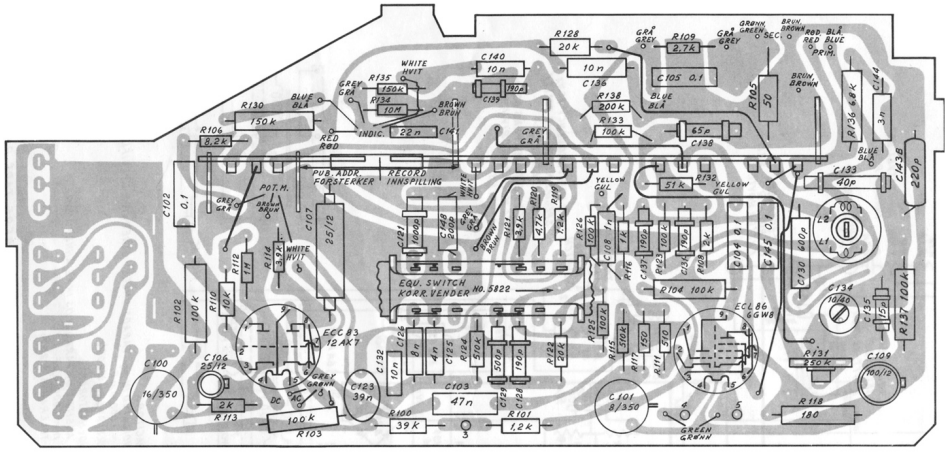
RESISTORS
INDICATED IN OHMS.
K = 1.000 OHMS.
M = 1.000.000 OHMS.
* = DEPOSITED CARBON RESISTORS.
TOLERANCES ± 10% UNLESS OTHERWISE SPECIFIED.

MOTSTANDER
ANGITT I OHM
K = 1.000 OHM
M = 1.000.000 OHM
* = KULLSKIKTMOTSTANDER
TOLERANSE ± 10% HVIS IKKE ANNET ANGITT

CAPACITORS
INDICATED IN µµ FARADS UNLESS OTHERWISE SPECIFIED.
n = 1.000 µµF.
TOLERANCES ± 20%.

KONDENSATORER
ANGITT I µµ FARAD HVIS IKKE ANNET ANGITT.
n = 1.000 µµF
TOLERANSE ± 20%

ADJUSTMENT OF TB 921 AND TB 922.



1. ADJUSTMENT OF OSCILLATOR

1.1. Push Record-Playback Switch to «Record» position and Tape Motion Lever to position (Normal Forward Drive). Measure voltage across erase head with a low input capacity VTVM (Vacuum Tube Voltmeter).
(Use a probe with input capacity less than 10 pF in order not to detune the erase head circuit.) Adjust the core in the oscillator coil to max. reading on VTVM. Check that the reading is the same (as close as possible) in positions «Normal» and «Extra». The frequency should then be 85—90 kHz and voltage 170—220 volts. The bias current should be about 370 μA. It can be varied ± 25% by means of the variable capacitor C134 (see point 6.3).

2. ADJUSTMENT OF HEADS

2.1. **Demagnetizing.** Demagnetize the heads and adjacent parts.

2.2. Set Tape Motion Lever to Normal Forward Drive (→pos.) and check that the tape runs equidistant from the flanges of the adjustable tape guide.

2.3. **The playback head.**

2.3.1. The height of head is adjusted by the height adjustment screws. The upper edge of the tape should run even with the upper edge of head. Be sure that the mounting plate for the head and the upper mounting plate are parallel.

2.3.2. Adjust the playback head with the azimuth alignment screw for max. reading on the output meter by playing back a standard azimuth alignment tape.

2.3.3. Lift the pressure pad away from the tape. If the meter readings decrease more than 3-4dB, turn the playback head by turning the head mounting plate. The direction is determined by increasing the contact angle to the right or left side of the head by means of a non-magnetic pin. (F. ex. if the meter reading increases with increasing contact angle on the right side of the gap, turn the head clockwise.)
Recheck the azimuth alignment 2.3.2.

2.4. **The Erase Head.**

2.4.1. .01" (.2 mm) of the face of the erase head should be visible above the tape. The footplate for the head must be parallel with the upper mounting plate.

3. RECORDING CURRENT, DISTORTION

3.1. Recording current in the recording head should be such that during recording at max. recording level one will get 4—6 % distortion on the recorded program. $I_r \approx 90$ μA.

3.2. Record a 400 Hz signal with the recording level indicator light beams just touching each other. Play back and measure distortion at output terminals with a distortion meter. If distortion is too high or too low, the recording current is adjusted by means of the potentiometer R131 (increasing counterclockwise) on the amplifier board. Measurements are repeated until satisfactory results are obtained.

4. AMPLIFIER

4.1. With the Record-Playback Switch in «PUB. ADDR.» position the tape recorder functions as an amplifier for microphone or radio input.

4.2. Input impedance for microphone: 1 M ohm, and for radio input: .5 M ohm. The voltage division from radio input is variable from 1 : 1 to 1 : 100 by means of a .5 M ohm potentiometer. From the factory set to about 1 : 50.

5. PLAY BACK

5.1. With Record-Playback Switch in «Playback» position and Tape Motion Lever in Normal Forward Drive (→ position) the playback function can be checked, preferably with a standard frequency tape.

5.2 Tolerances ± 2.5 dB for playback frequency response curve.

6. RECORDING AND PLAYBACK

6.1. With Record-Playback Switch in «Record» position and Tape Motion Lever in Normal Forward Drive recording can be made from microphone or radio input.

6.2. A 1000 Hz input signal is connected to radio input. Speed 7½". Volume control is adjusted so that the record level indicator light beams touch each other. Reduce volume 20 dB and record the desired frequencies. By playing back the recording and measuring output voltage of the whole frequency range the frequency response curves can be checked. Same procedure for 3¾" and 7⅞" speed. Tolerances at all speed ± 3 dB.

6.3. If the tape recorder's treble response is too high or too low, the bias current can be adjusted with the variable capacitor C134. Recheck point 3.2.

7. SPEED CHECK

7.1 Make sure that the flywheel and the transfer wheel move freely. Use a tape with a marked section of 450 inches (1144 cm) (start and end markers). Measure the time it takes for the tape-section to pass by the recording head. Correct time: 1 min. for 7½", 2 min. for 3¾" and 4 min. for 1⅞". Speed tolerances: ± 2 % at all speeds.

8. MICROPHONE AND ERASE CHECK

8.1. In «Normal» position, record from microphone at max. recording level. Rewind, play back and listen to check recording.

8.2. Set volume control to zero and erase the program. Rewind the tape and play back with the volume control on max. Check that the program is erased completely.