

INSTALLATION AND SERVICE DIVISION

RCA MANUFACTURING CO., INC.

CAMDEN, N. J.

CLASSIFICATION: Technical - Photophone - Special Systems **DATE** March 29, 1937

SUBJECT: LOEW'S THEATRE INSTALLATIONS

NUMBER SL-2042-1.5

TO: B-1, B-2, B-3, H-7

Loew's, Inc., have requested that their engineers have complete charge of installations in their theatres with our field engineers on the job in an advisory capacity. The actual layout of the component parts of the equipment is to be under the supervision of the Loew engineer in accordance with the instructions in the attached bulletin and photographs, issued by Loew's Projection Department. Two recommended layouts are shown and the instructions in this regard should be strictly followed.

In the event that a Loew job is scheduled for installation and a Loew engineer is not available, contact your District Office for further instructions.

Adolph Goodman
Service Division

INSTALLATION AND SERVICE DIVISION

RCA MANUFACTURING CO., INC.

CAMDEN, N. J.

CLASSIFICATION: Photophone - Technical -

DATE 12/8/36

SUBJECT: Special Systems

NUMBER 2012-1.2

TO: Field Engineers-Service Supervisors-National Office

Equipment to be Installed in Loew Theatres

A contract has been signed with Loew's Inc. for approximately 64 sound equipments for their theatres throughout the country. The equipment is similar to our standard line with some modifications in design specified by Loews. Installation Instructions 2012-1.1 recently issued to the field covers the description of the various units and some technical data on the amplifiers. This letter is supplementary to 2012-1.1 and covers information on amplifier compensation and other considerations special for these jobs.

Loudspeakers

The loudspeaker complement will consist of a standard cellular type H.F. horn, two standard low frequency baffles and MI-1459 low frequency baffle extension. In addition MI-1474 spacers have been specified to space the covers on the L.F. baffles $\frac{1}{2}$ " away from the baffle proper.

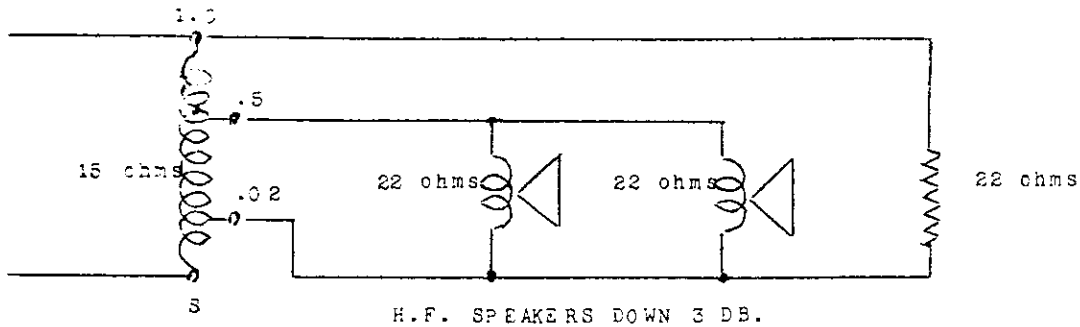
The loudspeaker mechanisms are of Lansing manufacture and are to be furnished by the customer. The high frequency units have a voice coil impedance of 22 ohms and the low frequency units have voice coil impedance of 8 ohms. Loudspeaker fields are designed for 115 volts and have a hot D.C. resistance of 650 ohms.

The crossover point for the Loew stage loudspeaker set up should be set at 400 cycles; values for this frequency setting are given in Drawing No. M-414626. At this crossover point the position of the furthestmost front point of the H.F. baffle with respect to the front edge of the L.F. baffle will be 6 inches for the 52°, 70° and 87° horns. For the 105° horn this distance will be 7 inches.

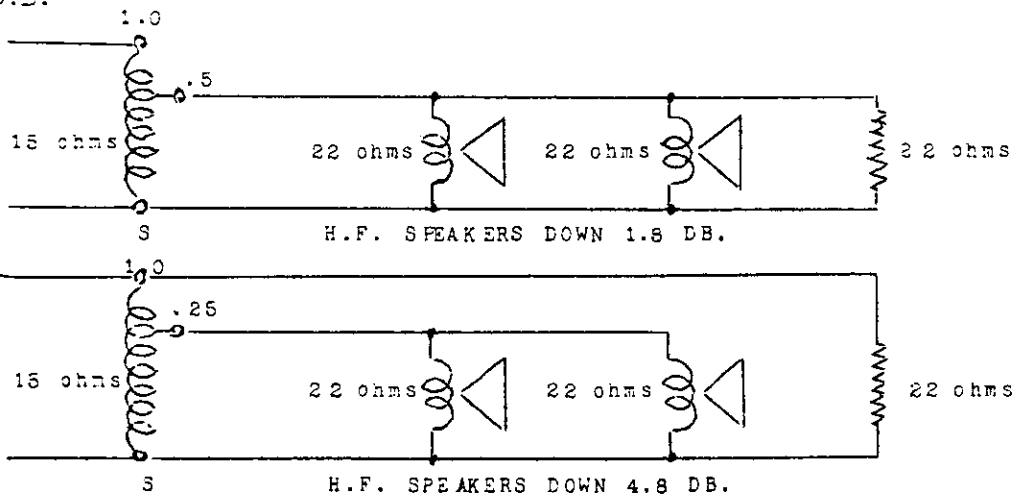
PG-92 and PG-93 Compensation

The MI-1245 and MI-1246 amplifier racks, as shipped, will have essentially a flat characteristic as indicated in curve 1, Drawing No. S-822983 in General Letter 2011-4 dated November 18, 1936. The voltage amplifier circuit will be identical with that shown in Drawing No. P-712172, part of the same letter. At the time of installation no change should be made in the amplifier compensation. As pointed out in General Letter 2011.4, the compensation for the Lansing type speakers in Loew houses should be obtained by padding down the H.F. frequency speakers. The technical personnel in Loew's organization prefer this method, as they wish to leave the amplifier characteristic flat. Padding the high frequency speakers produces approximately the same acoustic effect or balance as that obtained by boosting the low frequency response in the amplifier.

A 22 ohm resistor has been added to the coupling transformer for the high frequency speakers and the designation of the transformer changed to MI-1491. In order to obtain the proper acoustic balance, in most theatres it will ordinarily be sufficient to pad the H.F. speakers for a 3 D.B. loss as shown below



The two diagrams below show additional connections for loss values above and below 3 D.B.



The low pass filter MI-1272 will not be connected in the circuit when the rack is shipped from the factory. Connections should be made for 6000 cycle cut-off as indicated in Drawing No. W-302069. A voice frequency filter is not included with this filter panel.

PG-91 Compensation

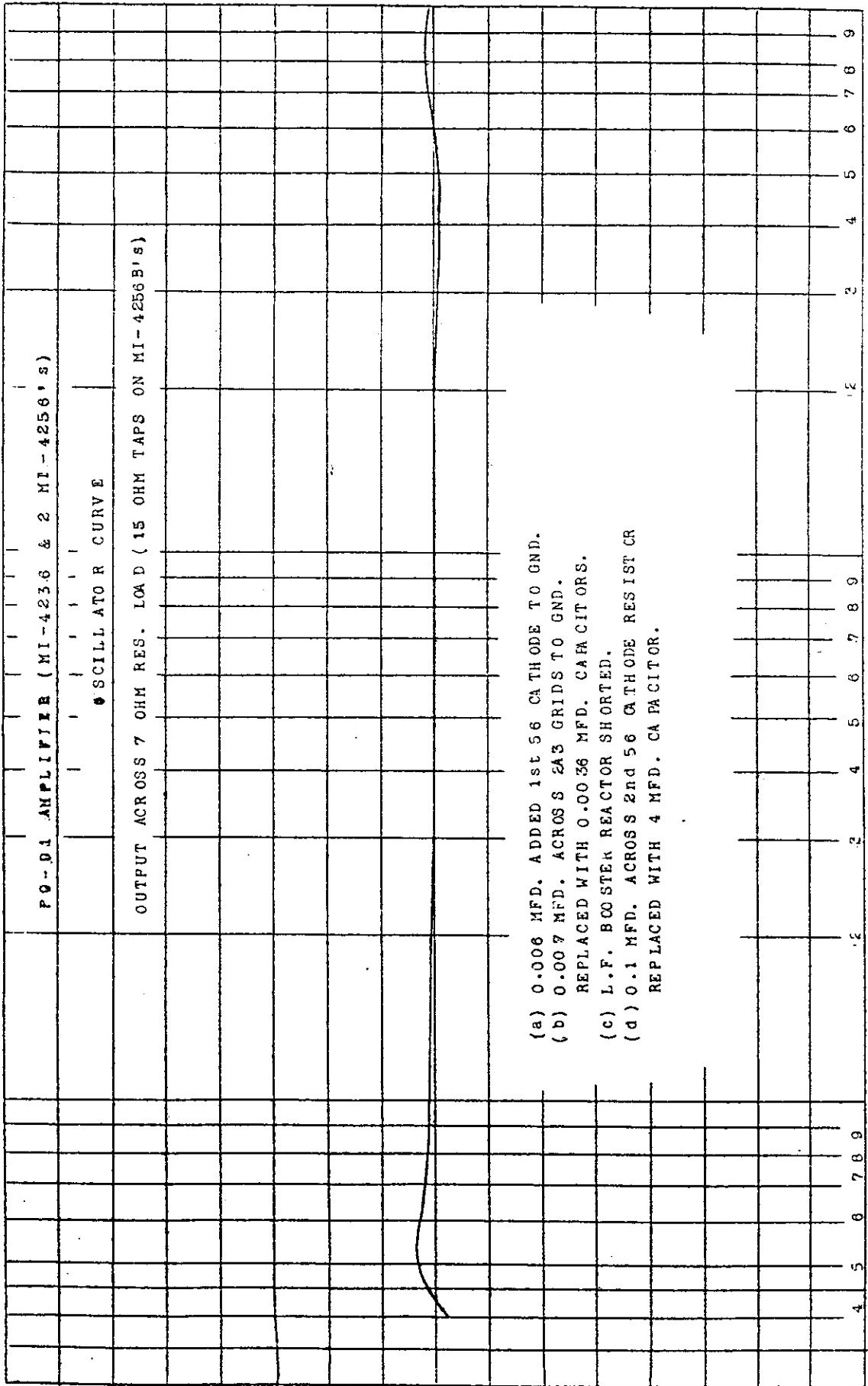
The frequency response characteristic for the MI-4236 and two MI-4256-B, as shipped, will be as shown in the attached sketch. Changes made in the amplifiers to produce this curve are as follows: Refer to Drawing No. TX-260139, part of 2012-1.1.

- (a) Added 0.006 mfd. across cathode resistor R-22 in second stage (RCA-56)
- (b) Low frequency booster shorted.
- (c) Replaced capacitor C-14 (0.1 mfd.) with 4.0 mfd. across cathode resistor R-21 in third stage (RCA-56).
- (d) Replaced capacitors C-47 and C-48 (0.007 mfd.) with 0.0036 mfd.

The MI-1273 low pass filter is electrically identical with the MI-1272, and should be connected for 6000 cycle cutoff.

The H.F. speakers should be padded with the 22 ohm resistor in the same manner as outlined previously under PG-92 and PG-93 compensation.

Adolph Goodman
Service Division



PO-01 AMPLIFIER (MI-4236 & 2 MI-4256's)

OSCILLATOR CURVE

OUTPUT ACROSS 7 OHM RES. LOAD (15 OHM TAPS ON MI-4256B's)

- (a) 0.006 MFD. ADDED 1st 56 CATHODE TO GND.
- (b) 0.007 MFD. ACROSS 2A3 GRIDS TO GND.
REPLACED WITH 0.0036 MFD. CAPACITORS.
- (c) L.F. BOOSTER REACTOR SHORTED.
- (d) 0.1 MFD. ACROSS 2nd 56 CATHODE RESISTOR
REPLACED WITH 4 MFD. CAPACITOR.

+ 8
+ 6
+ 4
+ 2
0
- 2
- 4
- 6
- 8

DECIBELS

100 1000 10,000

INSTALLATION AND SERVICE DIVISION

RCA MANUFACTURING CO., INC.

CAMDEN, N. J.

CLASSIFICATION: Policy & Procedure - Photophone -
Temporary

DATE Sept. 14, 1937

SUBJECT: Lansing Speakers

NUMBER SL-1C6-6

TO: B-1, B-2, B-3, H-7

It has been called to our attention that several Field Engineers have openly criticized Lansing high frequency speakers.

Loew's theatres and others use these speakers in connection with our equipment. Anything that we say against these speakers will be a direct reflection against the person who selected these speakers and our equipment. It is essential that we keep in the good graces of this person, therefore, it is important that you do not criticize them and that you avoid any discussion of their merits as compared with RCA speakers if possible.

E. C. Cahill