Western Electric Co., Incorporated,  
Engineering Dept., 
New York.  

METHOD OF OPERATION  
TRUNK CIRCUIT  
Tie Line Between Trouble Desk - And Zero Operator - Trouble Desk - Full  
Mechanical Power Driven System.  

GENERAL DESCRIPTION  

1. This tie line circuit is used between the trouble operator's desk and  
the zero operator's position.  

DETAILED DESCRIPTION  

OPERATION  

2. When the tie line key at the trouble desk is operated ground is con­  
nected to the "S" lead causing the operation of a series of relays in the tele­  
phone circuit to connect the telephone set across loads "T" and "R". Also the  
E540 relay operates lighting the lamp at the distant end and causing the lamp  
at the trouble desk to burn steadily as a busy signal. The $54-D retardation  
cell is also bridged across this connection to prevent the cord supervisory lamp  
at the zero operator's position from lighting.  

3. When the call is answered, the lamp at the distant end is extinguished  
and the E540 relay locks under control of a relay in the sleeve lead to prevent  
a false flashing recall if the talking key is released before the plug of the  
cord is withdrawn from the jack at the zero operator's position.  

4. On an incoming call the E206 relay operates, connecting interrupted  
battery to the lamp causing it to flash. When the listening key is operated,  
the E540 relay operates, releasing the E206 relay which disconnects interrupted  
battery from the lamp and closing a circuit to light the lamp as a busy signal.  
The E540 relay locks under control of a relay in the sleeve lead to prevent a  
false flashing recall should the talking key be released before the connection  
is taken down at the zero operator's position. When the tie line key is released  
and the connection is taken down at the distant end, the E540 relay releases,  
extinguishing the lamp and restoring the circuit to normal.
## Circuit Requirements

<table>
<thead>
<tr>
<th></th>
<th>Operate</th>
<th>Non-Operate</th>
<th>Release</th>
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</thead>
<tbody>
<tr>
<td><strong>E206</strong></td>
<td><strong>Test</strong> .018 amp.</td>
<td><strong>Test</strong> .0038 amp.</td>
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<tr>
<td></td>
<td><strong>Readj.</strong> .015 amp.</td>
<td><strong>Readj.</strong> .004 amp.</td>
<td></td>
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<tr>
<td><strong>E540</strong></td>
<td><strong>Test</strong> .021 amp.</td>
<td><strong>Test</strong> .010 amp.</td>
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<tr>
<td></td>
<td><strong>Readj.</strong> .017 amp.</td>
<td><strong>Readj.</strong> .011 amp.</td>
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*Approved - C. L. Sluyter, G.M.L.*

*Eng.--HBB-JO.*

* CHK'D.--EIC.*

*10-19-22.*