Errors in COLOSSUS 2A fixed constants, viz \( \omega_e, \Omega_{10}, \Omega_{10}, F_0, \alpha \).

2.1. CAUSE:
Error in MAC generation program.

2.2. RECOGNITION:
Difficult to assess.

2.3. MISSION EFFECT:
See attached table (negligible for G).

2.4. AVOIDANCE PROCEDURE:
Absorb errors in lunar constants in libration vector.

2.5. RECOVERY PROCEDURE:
None

2.6. PROGRAM CORRECTION:
Use attached values.

2.7. RECOMMENDED DISPOSITION (Fix, Work-around, etc.):
None required for 2A; fix for subsequent rope release.

3.1. NASA DIRECTION:
Fix for COLOSSUS 2B

4.1. CLOSING ACTION TAKEN:
Fix in most fundamental way
via PCR
CLOSED
2.3 Mission effect, cont'd.

<table>
<thead>
<tr>
<th>Error on Earth surface</th>
<th>July 1969</th>
<th>July 1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error on Moon surface</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Error on Moon surface</td>
<td>0.02 m</td>
<td>0.03 m</td>
</tr>
<tr>
<td>Error on Moon surface</td>
<td>4.1 m</td>
<td>8.2 m</td>
</tr>
</tbody>
</table>

In addition to the above an octal conversion error has caused an additional AGC error to the $\omega_E$ term. The total of both errors is as follows:

$\omega_E$ error on earth surface on July 15, 1969 = 161 m and on June 15, 1970 = 3760 m

2.6 Program correction, cont'd.

$\omega_E = 7.292115147 \times 10^{-5}$ RAD/SEC
$\beta = -7.197573418 \times 10^{-14}$ RAD/SEC
$\Omega_{\text{to}} = 6.196536640$ RAD
$\Omega_{\text{to}} = -1.070470170 \times 10^{-8}$ RAD/SEC
$\phi_0 = 5.209056$ RAD
$\phi_{\text{to}} = 2.672404256 \times 10^{-6}$ RAD/SEC

(A PCR has been written to make this change in post-Colossus 2A.)