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SUBJ: Estimate of Time Required to Save or Restore a Full Core User of Model 14 CTSS with 1501 Disk and 7320 Drum on the 7094.

I/O Time

A full core dump = 71 tracks
User Mach. Cond. = 2 "
Total 73 tracks x 34 ms/track for disk
x 17.2 ms/track for drum

<table>
<thead>
<tr>
<th>DRUM</th>
<th>DISK</th>
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<tbody>
<tr>
<td>1240</td>
<td>2480</td>
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Seek Time

Estimate for disk:
Drum seek per track = 0 ms

Latency

72 tracks might average 3 cylinders
on disk. 3 seeks x 17 ms av latency
Drum requires only one seek. 8.6 ms av latency

Lost Latency due to clock trap processing
at 35 ms per track and 200 ms per clock
trap we miss latency every sixth track
~12 tracks x 34 ms latency for disk
at 17.2 ms per track and 200 ms per clock
trap we miss every twelfth track
~6 tracks x 17.2 ms latency for disk

Total estimate in seconds

<table>
<thead>
<tr>
<th>DRUM</th>
<th>DISK</th>
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<tr>
<td>1.36</td>
<td>3.44</td>
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The Seek time to read all tracks in one disk module is approximately the following:

40 tracks/cylinder, 50 cylinders/section, 5 sections/area, 5 areas/module
Seek time track to track 0 ms., cylinder to cylinder 50 ms.,
section to section 120 ms., area to area 180 ms.

Seek time in ms. = (((40 x 0 + 50) x 49 + 120) x 4 + 180) x 4 + Seek
time to first track.

= 41840

or 4.18 ms per consecutive track plus setup time to initial track.

Assuming the initial seek time is about 150 ms., the total seek time
for 73 tracks is 73 x 4.18 + 150 ms. or about 460 ms.

If the disk routine must use more than one consecutive block for
this information, extra seek time must be added for each block.