

# SECTION 7 - GENERAL SYSTEM

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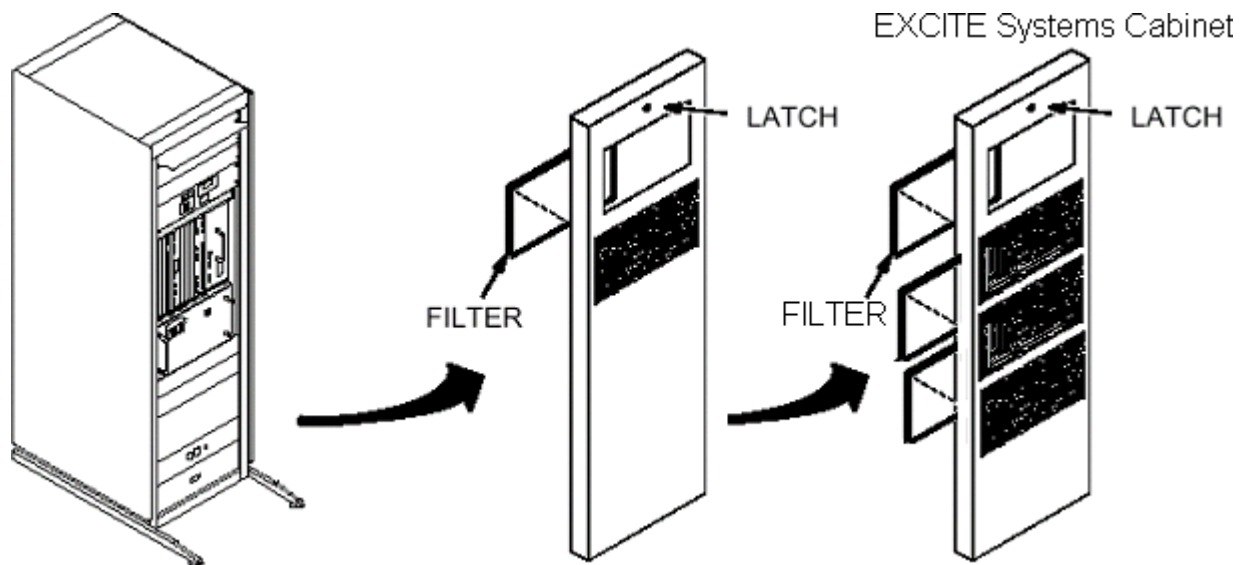
## 7-1 CHECK SYSTEM CABINET FANS AND CLEAN FILTERS

### Description

Signa Horizon 5.X, 8.X, 9.X & 10.X Upgrade System Cabinets use forced air cabinet cooling. The cabinet air passes through impregnated air filters (46-306565P1) that must be replaced as necessary to assure proper cabinet cooling. The EXCITE (10.X) System Cabinet has two additional filters (3 total). See Illustration 7-2.

### Procedure

1. Turn recessed screw at top center of cover 1/4-turn counterclockwise to release cover latch. See Illustration 7-1.
2. Tilt top of cover forward and lift up and out to remove cover for access to filter(s).
3. Lift bottom of filter frame up and out to remove filter(s) from cover.
4. Inspect filter(s) for dust build-up and replace as required. If replacement is not necessary, proceed to step 7.
5. Apply coating of Filter adhesive (46-251301P160) to inlet side of new filter(s) before installation.
6. Orient replacement filter with inlet side toward grill opening on cover and place top edge into opening under retaining lip.
7. Slide filter upward underneath retaining lip until bottom clears lower retaining lip. Lower filter into slot.
8. Replace cover on cabinet by inserting lower cover lip behind trim strip at bottom of cabinet and swinging top of cover into spring loaded "slam-latch".



SYSTEM CABINET FILTER  
 ILLUSTRATION 7-1

## 7-2 CHECK AND DELETE ERROR/MESSAGE LOG/T-TEST FILES

### Note

To optimize scanner operation and maximize available image space, the messages in the Error/Message Log should be deleted on a periodic basis. However, be sure to review messages before you delete them, particularly if the site has on-going problems.

### 7-2-1 Signa Message Log Facility

The Signa Horizon 5.X, 8.X, 9.X & 10.X Systems use a run-time message log which stores messages pertaining to hardware/software errors, system faults, status and operator responses. The log may be viewed via a utility function with Signa running.

### 7-2-2 Viewing Log Utility,

#### Horizon 5.X

When the Signa system is up and running and the main menu is displayed on the Touch Screen, select the **[MESSAGES]** touch key (located in Status Row) to bring up the message log entry screen. From this screen you can select which side of the Touch Screen the Message Log will be displayed, or enter Log Sort Modes. Error messages are listed in chronological order and the last page of the log represents the most recent messages.

#### Release 8.X

In the Signa Release 8.X software the Error Messages can be accessed by clicking mouse on the **[Service Desktop]** icon, **[Utilities]**, **[Display Log]**, and **[Start]** to view log.

### 7-2-3 Deleting Error/Message Log,

#### Horizon 5.X

1. At the Touch screen keyboard hold down the **L1** and **b** keys. If Genesis log-in prompt appears, type in Genesis and log in with password.
2. Type **4\$app\$<ENTER>**  
(or current password).
3. Type **viewLog -p<ENTER>**. (This command purges log of all except last 100 messages.)

#### Release 8.X, 9.X & 10.X

The System Error log can get very lengthy and unnecessarily use up memory. The following procedure should be used to prune (clean up) your error log.

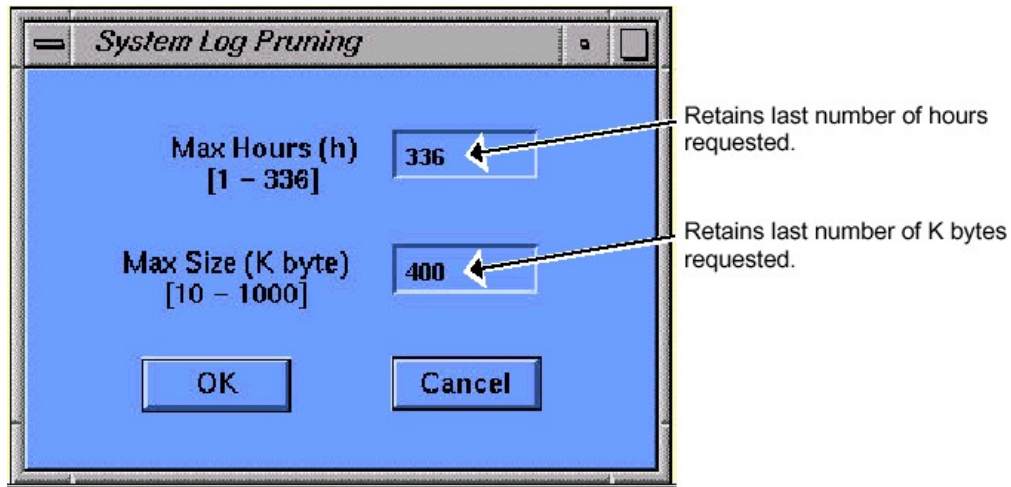
### Note

This utility does not continuously monitor the size of the error log. It does prune the log to the specifications that are entered each time the utility is run.

1. On the Service Desktop, select the **[C Shell..]** button.
2. Type **prune <ENTER>**. See Illustration 7-3.

7-2-3 Deleting Error/Message Log (continued)

Release 8.X, 9.X & 10.X (continued)



SYSTEM LOG PRUNING SCREEN  
ILLUSTRATION 7-3

**Note**

Use both the hours and K byte to prune log. (e.g. if set to 24 hours and 50 k bytes but there are 100 K bytes of errors in last 24 hours, it will prune to 50 K bytes. Which could cause only 1- 23 hours to be saved.)

3. Enter the **hours** and **size** for Pruning criteria. (See Illustration 7-3 for recommended settings.)
4. Click on **OK**.
5. Exit the C-Shell.

**7-2-4 "T" File Cleanup (Horizon 5.X)**

This procedure pertains to Horizon 5.X software only. "T" File Cleanup is an MR Tool that allows the user to delete, lock, or unlock result files generated by MR Tools such as SPT, TLT, SST, LVshim, QRT, HSS, RFS and Bandpass Asymmetry Tool (the "T" tests).

To invoke the MR Tool "T" File Cleanup, touch **[Utilities], [1], [2], [3], [MR Tools], ["T" File Cleanup]**. The opening screen can be seen in Table 7-1.

TABLE 7-1  
 INVOKING "T" FILE CLEANUP

OUTPUT/PROMPT	INPUT/COMMENTS
<pre>File system statistics: ----- Filesystem  kbytes  used   available  capacity  Mounted on /dev/sd0f   304043  240204  33434      88%       /usr/g The oldest T test data files are: ===== -rw-rw-r-- 1 genesis  9985   Sep 27 21:30 59RL3041.BAT -rw-rw-r-- 1 genesis 61951   Sep 27 21:32 59RL3130.BAT -rw-rw-r-- 1 genesis  1574   Sep 27 22:36 59RM29RC.LVS -rw-rw-r-- 1 genesis  1570   Sep 27 23:55 59RM45RC.LVS -rw-rw-r-- 1 genesis  9974   Sep 27 23:59 59RN5849.BAT -rw-rw-r-- 1 genesis 61910   Sep 28 00:02 59S00125.BAT -rw-rw-r-- 1 genesis  1573   Sep 29 18:46 59TI30RC.LVS -rw-rw-r-- 1 genesis  1570   Sep 29 18:49 59TI48RC.LVS -rw-rw-r-- 1 genesis  1401   Sep 29 19:05 59TJ04RC.LVS -rw-rw-r-- 1 genesis  1400   Sep 29 19:13 59TJ05RC.LVS Please enter test type: (BAT, HSS, QRT, RFS, RFT, SPT, SST, TLT) [SPT] : .....</pre>	<p>***&lt;Enter&gt;                  (**Select the appropriate file type.)</p>

7-2-4 "T" File Cleanup (Horizon 5.x) (continued)

There are three utilities that are available with "T" File Cleanup. "T" Files can be deleted, locked, or unlocked. Locking a file is done to prevent the user from accidentally losing valuable data when using the delete utility. The unlock utility will change a locked file back to being affected by the delete utility.

**Note**

It is possible to delete, unlock or lock more than one file at a time.

Example: d 2,5,10-13 will delete files 2,5,10,11,12 and 13.

TABLE 7-2  
 "T" FILE CLEANUP - DELETING FILES

OUTPUT/PROMPT		INPUT/COMMENTS
File system statistics: ----- Filesystem Kbytes used available capacity Mounted on /dev/sd0f 304043 240204 33434 88% /usr/g		
Index	Name	Size Last modified Locked
=====	=====	=====
1.	59RM29RC.LVS	1574 Wed Sep 27 22:36:47 1995
2.	59RM45RC.LVS	1570 Wed Sep 27 23:55:22 1995
3.	59TI30RC.LVS	1573 Fri Sep 29 18:46:56 1995
4.	59TI48RC.LVS	1570 Fri Sep 29 18:49:11 1995
5.	59TJ04RC.LVS	1401 Fri Sep 29 19:05:00 1995
6.	59TJ05RC.LVS	1400 Fri Sep 29 19:13:12 1995
7.	59TJ21RC.LVS	1401 Fri Sep 29 19:25:01 1995
8.	59TJ25RC.LVS	1401 Fri Sep 29 19:28:34 1995
9.	59TJ29RC.LVS	1401 Fri Sep 29 19:32:58 1995
10.	59TJ33RC.LVS	1401 Fri Sep 29 19:39:22 1995
11.	59TJ46RC.LVS	1401 Fri Sep 29 19:46:08 1995
12.	59TJ53RC.LVS	1401 Fri Sep 29 19:53:35 1995
13.	59TJ54RC.LVS	1401 Fri Sep 29 19:55:12 1995
14.	59TJ55RC.LVS	1401 Fri Sep 29 19:59:03 1995
15.	59TJ59RC.LVS	1401 Fri Sep 29 20:04:50 1995
Enter command and number(s) (or range) of the desired data file(s) (D)delete (L)ock (U)nlock (F)iles (N)ext (P)revious (Q)uit (H)elp : . D ***<Enter> (** Select the number of the file that you would like to delete..)		
59TI30RC.LVS deleted Press <Enter> to continue [ ] : .....		(After the files are deleted, locked, or unlocked, type s or q to quit this tool.)

7-2-4 "T" File Cleanup (Horizon 5.x) (continued)

TABLE 7-3  
 "T" FILE CLEANUP - LOCKING FILES

OUTPUT/PROMPT						INPUT/COMMENTS
File system statistics:						
-----						
Filesystem	Kbytes	used	available	capacity	Mounted on	
/dev/sd0f	304043	240204	33434	88%	/usr/g	
Index	Name	Size	Last modified		Locked	
=====	=====	=====	=====		=====	
1.	59RM29RC.LVS	1574	Wed	Sep 27 22:36:47	1995	
2.	59RM45RC.LVS	1570	Wed	Sep 27 23:55:22	1995	
3.	59TI30RC.LVS	1573	Fri	Sep 29 18:46:56	1995	
4.	59TI48RC.LVS	1570	Fri	Sep 29 18:49:11	1995	
5.	59TJ04RC.LVS	1401	Fri	Sep 29 19:05:00	1995	
6.	59TJ05RC.LVS	1400	Fri	Sep 29 19:13:12	1995	
7.	59TJ21RC.LVS	1401	Fri	Sep 29 19:25:01	1995	
8.	59TJ25RC.LVS	1401	Fri	Sep 29 19:28:34	1995	
9.	59TJ29RC.LVS	1401	Fri	Sep 29 19:32:58	1995	
10.	59TJ33RC.LVS	1401	Fri	Sep 29 19:39:22	1995	
11.	59TJ46RC.LVS	1401	Fri	Sep 29 19:46:08	1995	
12.	59TJ53RC.LVS	1401	Fri	Sep 29 19:53:35	1995	
13.	59TJ54RC.LVS	1401	Fri	Sep 29 19:55:12	1995	
14.	59TJ55RC.LVS	1401	Fri	Sep 29 19:59:03	1995	
15.	59TJ59RC.LVS	1401	Fri	Sep 29 20:04:50	1995	
Enter command and number(s) (or range) of the desired data file(s)						
(D)elete (L)ock (U)nlock (F)iles (N)ext (P)revious (Q)uit (H)elp : L***<Enter>						
						(*** Select the number of the file that you would like to lock.)
File system statistics:						
-----						
Filesystem	Kbytes	used	available	capacity	Mounted on	
/dev/sd0f	304043	240204	33434	88%	/usr/g	
Index	Name	Size	Last modified		Locked	
=====	=====	=====	=====		=====	
1.	59RM29RC.LVS	1574	Wed	Sep 27 22:36:47	1995	
2.	59RM45RC.LVS	1570	Wed	Sep 27 23:55:22	1995	
3.	59TI30RC.LVS	1573	Fri	Sep 29 18:46:56	1995	
4.	59TI48RC.LVS	1570	Fri	Sep 29 18:49:11	1995	
5.	59TJ04RC.LVS	1401	Fri	Sep 29 19:05:00	1995	
6.	59TJ05RC.LVS	1400	Fri	Sep 29 19:13:12	1995	
7.	59TJ21RC.LVS	1401	Fri	Sep 29 19:25:01	1995	
8.	59TJ25RC.LVS	1401	Fri	Sep 29 19:28:34	1995	
9.	59TJ29RC.LVS	1401	Fri	Sep 29 19:32:58	1995	
10.	59TJ33RC.LVS	1401	Fri	Sep 29 19:39:22	1995	
11.	59TJ46RC.LVS	1401	Fri	Sep 29 19:46:08	1995	
12.	59TJ53RC.LVS	1401	Fri	Sep 29 19:53:35	1995	
13.	59TJ54RC.LVS	1401	Fri	Sep 29 19:55:12	1995	
14.	59TJ55RC.LVS	1401	Fri	Sep 29 19:59:03	1995	
15.	59TJ59RC.LVS	1401	Fri	Sep 29 20:04:50	1995	
Enter command and number(s) (or range) of the desired data file(s)						
(D)elete (L)ock (U)nlock (F)iles (N)ext (P)revious (Q)uit (H)elp : (After the files are deleted, locked, or unlocked, type s or q to quit this tool.)						

7-2-4 "T" File Cleanup (Horizon 5.x) (continued)

TABLE 7-4  
"T" FILE CLEANUP - UN LOCKING FILES

OUTPUT/PROMPT	INPUT/COMMENTS
File system statistics: ----- File system statistics: ----- Filesystem Kbytes used available capacity Mounted on /dev/sd0f 304043 240204 33434 88% /usr/g	
Index Name Size Last modified Locked =====	
1. 59RM29RC.LVS 1574 Wed Sep 27 22:36:47 1995	
2. 59RM45RC.LVS 1570 Wed Sep 27 23:55:22 1995	
3. 59TI30RC.LVS 1573 Fri Sep 29 18:46:56 1995	
4. 59TI48RC.LVS 1570 Fri Sep 29 18:49:11 1995	
5. 59TJ04RC.LVS 1401 Fri Sep 29 19:05:00 1995	Yes
6. 59TJ05RC.LVS 1400 Fri Sep 29 19:13:12 1995	
7. 59TJ21RC.LVS 1401 Fri Sep 29 19:25:01 1995	
8. 59TJ25RC.LVS 1401 Fri Sep 29 19:28:34 1995	
9. 59TJ29RC.LVS 1401 Fri Sep 29 19:32:58 1995	
10. 59TJ33RC.LVS 1401 Fri Sep 29 19:39:22 1995	
11. 59TJ46RC.LVS 1401 Fri Sep 29 19:46:08 1995	
12. 59TJ53RC.LVS 1401 Fri Sep 29 19:53:35 1995	
13. 59TJ54RC.LVS 1401 Fri Sep 29 19:55:12 1995	
14. 59TJ55RC.LVS 1401 Fri Sep 29 19:59:03 1995	
15. 59TJ59RC.LVS 1401 Fri Sep 29 20:04:50 1995	
Enter command and number(s) (or range) of the desired data file(s) (D)elete (L)ock (U)nlock (F)iles (N)ext (P)revious (Q)uit (H)elp	<b>U***&lt;Enter&gt;</b> (** Select the number of the file that you would like to unlock.)
File system statistics: ----- Filesystem Kbytes used available capacity Mounted on /dev/sd0f 304043 240204 33434 88% /usr/g	
Index Name Size Last modified Locked =====	
1. 59RM29RC.LVS 1574 Wed Sep 27 22:36:47 1995	
2. 59RM45RC.LVS 1570 Wed Sep 27 23:55:22 1995	
3. 59TI30RC.LVS 1573 Fri Sep 29 18:46:56 1995	
4. 59TI48RC.LVS 1570 Fri Sep 29 18:49:11 1995	
5. 59TJ04RC.LVS 1401 Fri Sep 29 19:05:00 1995	
6. 59TJ05RC.LVS 1400 Fri Sep 29 19:13:12 1995	
7. 59TJ21RC.LVS 1401 Fri Sep 29 19:25:01 1995	
8. 59TJ25RC.LVS 1401 Fri Sep 29 19:28:34 1995	
9. 59TJ29RC.LVS 1401 Fri Sep 29 19:32:58 1995	
10. 59TJ33RC.LVS 1401 Fri Sep 29 19:39:22 1995	
11. 59TJ46RC.LVS 1401 Fri Sep 29 19:46:08 1995	
12. 59TJ53RC.LVS 1401 Fri Sep 29 19:53:35 1995	
13. 59TJ54RC.LVS 1401 Fri Sep 29 19:55:12 1995	
14. 59TJ55RC.LVS 1401 Fri Sep 29 19:59:03 1995	
15. 59TJ59RC.LVS 1401 Fri Sep 29 20:04:50 1995	
Enter command and number(s) (or range) of the desired data file(s) (D)elete (L)ock (U)nlock (F)iles (N)ext (P)revious (Q)uit (H)elp :	(After the files are deleted, locked, or unlocked, type s or q to quit this tool.)

7-2-5 "T" File Cleanup Help Menu (Horizon 5.x)

The help menu can be seen in Table 7-5.

TABLE 7-5  
 "T" FILE CLEANUP - HELP MENU

OUTPUT/PROMPT	INPUT/COMMENTS
<pre> HELP MENU  (D)elete file(s) (L)ock (mark file(s) as non-deletable) (U)nlock file(s) to make them deletable (F)ile type (Change file type to a different test) (N)ext page in file listing (P)revious page in file listing (H)elp (this screen) (S)top or (Q)uit to exit the tool at any prompt  The supported commands are not case sensitive Syntax: &lt;one letter command&gt; &lt;file list&gt; The file list consists of single &amp;/or a range of file #'s. Example: d 2,5,10-13 will delete files 2,5,10,11,12 and 13  Press &lt;Enter&gt; to continue [ ] : ..... &lt;Enter&gt;                     </pre>	

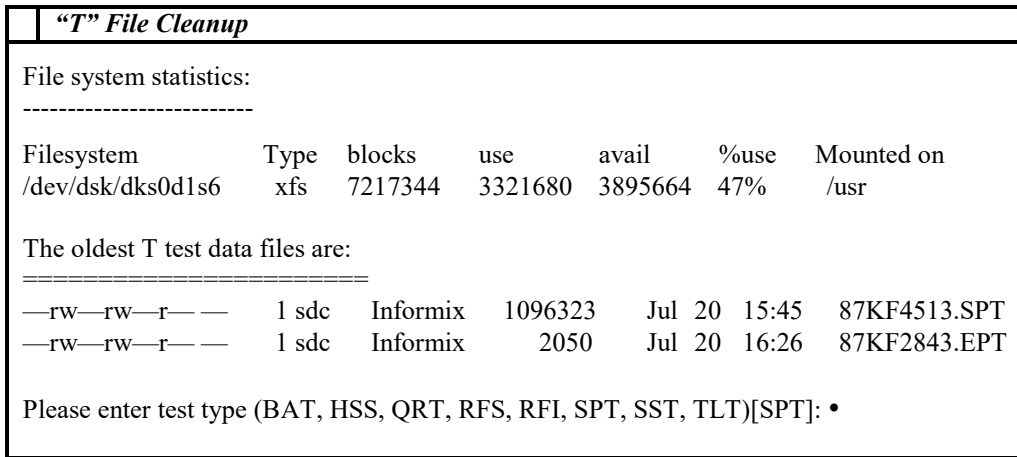
**7-2-6 “T” File Cleanup (Release 8.x, 9.X & 10.X)**

**Description**

This procedure pertains to Signa Release 8.x, 9.x & 10.x systems only. This procedure allows the user to delete files generated by MR tools such as SPT, TLT, SST, and LVShim from the scanner's host system disk. This process utilizes the system's Utilities' tool, "T" File Cleanup as a space management tool. It cleans up the /usr/g/service/data directory by locating and deleting the files.

**Procedure**

1. Click mouse on **[Service Desktop]** icon, click mouse on **[Utilities]**, select **["T" File Cleanup]** and click mouse on **[Start]**.
2. "T" File Cleanup command window opens on screen. See Illustration 7-4.



**"T" FILE CLEANUP COMMAND WINDOW**  
 ILLUSTRATION 7-4

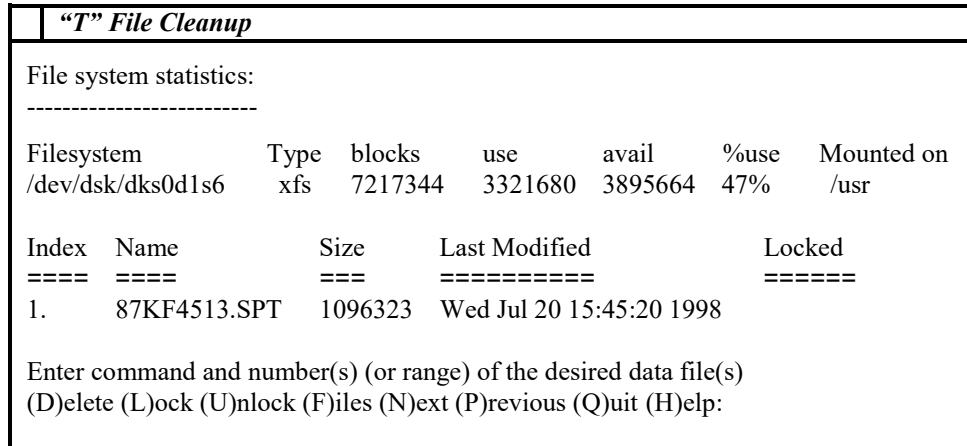
3. Following directions on the screen, enter test types to delete. Using Illustration 7-4 as an example, type the following:

**SPT [ENTER]**

**7-2-6 “T” File Cleanup (Release 8.x, 9.x & 10.x)(continued)**

- To Delete the .SPT file enter the number that appears in the index column (see Illustration 7-5) and the letter D.

For example: **D1[ENTER]**, deletes 1. 87KF4513.SPT file in the screen below.



**DELETING FILES SCREEN**  
 ILLUSTRATION 7-5

- After all files are deleted, type **Q [ENTER]**, to quit program.

**7-2-7 Check Date of Last Save Info**

- Check Save Info MOD for last date recorded. If the Save Info has not been performed since the last scheduled PM, create a new MOD by using the following steps.
- Insert the SaveInfo MOD or a new MOD into the drive.
- Click on **[Save Info]** from the Install menu. The system opens the window called Xexec. (If the MOD has not been used, you will see a message regarding the use of the MOD for "Raw Data Storage"; choose **[Overwrite]**).
- When asked: Do you really want to save configuration files to the Info MOD? [y|n], type: **y<Enter>**.
- When SaveInfo is complete, you can try the following command to give you an indication that the SaveInfo was successful. Open a C Shell on the Service Desktop. Login as *root* by typing: **su root**, then enter password **operator**.

Type the following:

**tar vtf /MOD\_DRIVE <Enter>** (there is a space between vtf and / character)

*Hundreds of files that were backed up on the MOD should scroll by at this point. This will be a good indicator that the SaveINFO was successful. Note: to view the files a page at a time you can type: tar vtf /MOD\_DRIVE|more <Enter> (the vertical character "pipe" followed by the word "more" will display a page of output at a time; use the space bar to continue paging).*

**7-2-7 Check Date of Last Save Info (continued)**

*Also as an indication that site protocols were saved successfully, you should see the something similar to the following (protocol names will not match, this just an example)*

```
rw-rw-rw-  0/0          0 Jul 28 14:26 2000
usr/g/MRINFO/holdingtank/usr/g/protocols/site/chest/.MrProtocol.chest.cfg
rwxrwxr-x  0/0 dir      Aug 7 10:17 2000
usr/g/MRINFO/holdingtank/usr/g/protocols/site/head/
rw-rw-rw-  0/0          9472 Jun 28 13:20 2000
usr/g/MRINFO/holdingtank/usr/g/protocols/site/head/.MrProtocol.head.cfg
rwxr-xr-x  64/32116    298496 Jul 28 14:45 2000
usr/g/MRINFO/holdingtank/usr/g/protocols/site/head/1.0T_destroyer_head_A
rwxr-xr-x  64/32116    587898 Jul 28 14:45 2000
usr/g/MRINFO/holdingtank/usr/g/protocols/site/head/Sr20PerformSpecs
rwxr-xr-x  64/32116    298602 Jul 28 14:45 2000
usr/g/MRINFO/holdingtank/usr/g/protocols/site/head/destroyer_head_A
rwxr-xr-x  64/32116    132142 Jul 28 14:45 2000
usr/g/MRINFO/holdingtank/usr/g/protocols/site/head/head_2d_thick
rwxr-xr-x  64/32116    22059 Jul 28 14:45 2000
usr/g/MRINFO/holdingtank/usr/g/protocols/site/head/head_2dfast_cmon
rwxr-xr-x  64/32116    16571 Jul 28 14:45 2000
usr/g/MRINFO/holdingtank/usr/g/protocols/site/head/head_2dfast_fcOFF
rwxr-xr-x  64/32116    16572 Jul 28 14:45 2000
usr/g/MRINFO/holdingtank/usr/g/protocols/site/head/head_2dpc_fcOFF
rwxr-xr-x  64/32116    16592 Jul 28 14:45 2000
usr/g/MRINFO/holdingtank/usr/g/protocols/site/head/head_2dtof_fcOFF
rwxr-xr-x  64/32116    27806 Jul 28 14:45 2000
usr/g/MRINFO/holdingtank/usr/g/protocols/site/head/head_3d_thick
.....
```

**If site protocols are missing, please call OLC for support and do not proceed.**

6. At top left corner of the Install GUI, select **<File>** then **<Save GI Configuration to MOD>**.

**Note**

The “Save GI Configuration to MOD” creates a copy of the information already entered in the GUI tabs for later use to update the tabs during a software reload. The **<Save GI Configuration to MOD>** and **SaveInfo** can be saved on the same side of the Info MOD. A separate partition is built for each.

7. Remove the MOD and write release version, the system name, and the date on it.

**7-3 CHECK SHIM (Obsolete Section with addition of PM Assist)****7-4 CHECK SNR (Obsolete Section with addition of PM Assist)****7-5 CHECK CABINET INLET AIR TEMPERATURE****Note**

To make the best use of system access time, this check should be performed while customer is scanning or during SPT scan. Inlet air temperature range for computer and equipment cabinets is specified as 50°–70°F (10°–21°C).

1. Place a thermometer at Gradient Cabinet inlet. Allow thermometer to stabilize for several minutes while you do other tasks.
2. Record in Log Book which inlet you monitored and temperature at that location.
3. Move thermometer to another cabinet inlet at a different location in room, preferably a good distance from air conditioning unit. Allow time for thermometer to stabilize.
4. Record location and temperature in Log Book.
5. If cabinet inlet air temperatures are **above** 70°F (21°C), work with customer to lower temperature in room.

**7-6 CHECK PM SUPPLIES (OBSOLETE SECTION)****7-7 UPDATE CONFIGURATION FILE IN SITE LOG BOOK****Note**

Keep a hard copy of current configuration file entries at all times. When an entry is modified, record change in Log Book. At least twice a year, check Log Book to make sure it matches current configuration. Signa Advantage can be up and running (including customer scanning, archiving, etc.) when check is made.

**Procedure (Horizon 5.X)**

1. Touch **[UTILITIES]** then **[C Shell]** at Operator's Console to open a tty window.
2. Perform the following in the tty window.

7-7 UPDATE CONFIGURATION FILE IN SITE LOG BOOK (continued)

OUTPUT/PROMPTS	INPUTS/COMMENTS
<pre>Genesis @ &lt;suiteId_host name&gt; &lt;number&gt;: ..... Configuration Files (Page 1 of 1)  1) Coil Configuration File 2) MR Configuration File 3) SAR Configuration File 4) ThreeD  Type Ctrl-h for help ----- Internal Rev % 1 Research System [yes,no] &gt; no Line frequency &gt; 60 Spectroscopy Transceiver [yes,no] no  Broadband Transceiver [yes,no] = no TR Dither [yes,no] &gt; no RF Body Coil Vector Z % 12431 RF Body Coil Length &gt; 6785 RF Body Coil Radius &gt; 2560 RF Head Coil Vector Y &gt; 191 RF Head Coil Vector Z &gt; -2800 RF Head Coil Length &gt; 4100 RF Head Coil Radius &gt; 1397 Setting on x-gradient to obtain 1 Gauss/cm &gt;28500 Setting on y-gradient to obtain 1 Gauss/cm &gt;28500 Setting on z-gradient to obtain 1 Gauss/cm &gt;28500  Gradient Scaling Factor &gt; 1.0 Minimum Gradient Ramp Time &gt; 600 Head Coil Amp Calibration Factor = 0  Body Coil Amp Calibration Factor = 0  Type of magnet configured &gt; 200  Magnet Field Strength &gt; 1500  Isocenter vector along z-axis &gt; 12520  Table Movement Limit &gt; 31750 Beginning of Travel (mm) &gt; 50 End of Travel (mm) &gt; 2500 Max Grad Shim Value &gt; 280 Head plate dissipation limit &gt; 800 Body plate dissipation limit &gt; 5000 Head power supply limit (watts) &gt; 350 Body power supply limit (watts) &gt; 4000 Head plate voltage &gt; 3000 Body plate voltage &gt; 6000 Head quiescent plate current &gt; .15 Body quiescent plate current &gt; .7 Head load line resistance &gt; 857 Body load line resistance &gt; 394  Type Ctrl-h for help -----</pre>	<pre>cfe &lt;ENTER.  2&lt;ENTER&gt;  Note: Record all values highlighted in boxes.  &lt;ENTER&gt;</pre>

3. Touch **[Cancel]** to exit Utilities.

**7-8 VERIFY PM COMPLETION ON VAN EQUIPMENT, AIR CONDITIONING, AND WATER CHILLER SYSTEMS****Note**

Planned Maintenance (PM) for the van is the responsibility of the van owner. However, if the van is not properly maintained, it could affect the function and performance of the Signa Horizon system. General Electric Medical Systems recommends that the van owner contact the van manufacturer for van PM inspections. Verify that the van owner has made arrangements for on-going PM for the van and support equipment. Neglected Heating–Venting–Air Conditioning (HVAC) equipment can cause unexpected catastrophic system failures. Our customers may not be aware that their water chiller and air conditioning equipment require routine service and inspections.

**Note**

It is important to remember that this section is included in the GEMS PM procedures to verify the customer is having routine PM service to their HVAC systems. It is not intended that GEMS is responsible for that service. If a problem is found, notify customer of problem and importance of getting HVAC equipment fixed. Let customer arrange for appropriate repair. Do not accuse or intimidate customer. Report your findings to appropriate GE customer personnel. Have site engineer check with customer that equipment room air conditioner and water chiller systems are being routinely inspected and serviced. Verify on-going periodic maintenance is being done on any separate closed–loop chilled water system(s) connected to GE system components.

**7-9 PERFORM SITE RESTORATION**

**7-9-1 Scan DQA Phantom (Horizon 5.X)**

**Description**

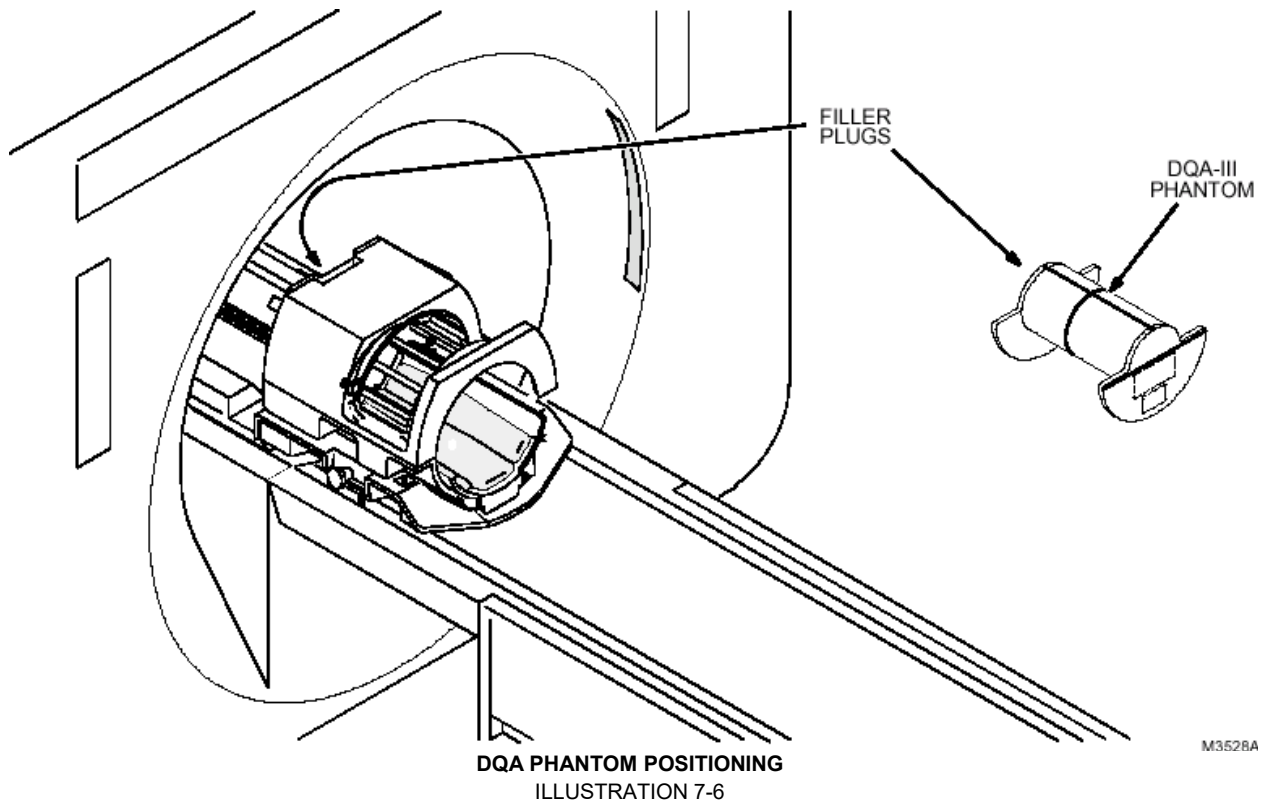
This is the final scan to be sure that the system is operating before turning it back to the customer. The scan will also be used to check the alignment lights.

**Tools Required**

- □ Daily Quality Assurance (DQA-III) Phantom, 2131027-2

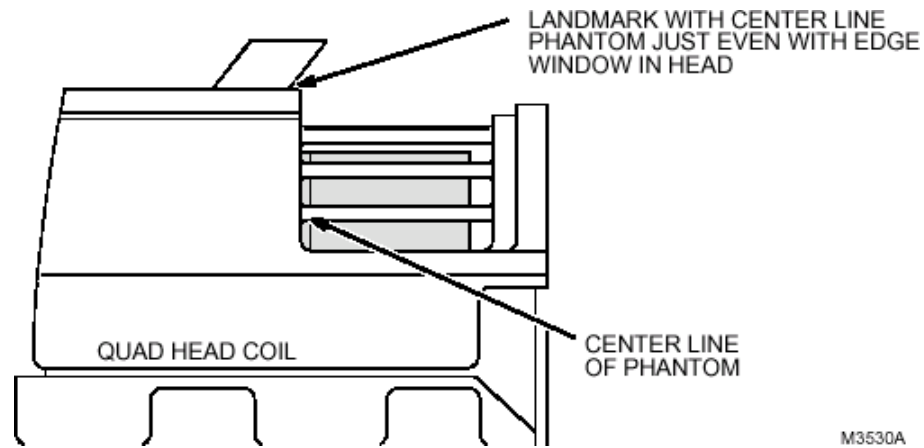
**Procedure**

1. Place DQA-III phantom in head coil. Position filler plugs towards head end of table (rear of magnet). See Illustration 7-6.



7-9-1 Scan DQA Phantom (Horizon 5.X) (continued)

2. Position cradle so axial alignment lights are centered on the axial plate of the phantom. Verify that the sagittal light coincides with the center of the sagittal plate of the phantom. See Illustration 7-7.
3. LANDMARK, then press ADVANCE TO SCAN.

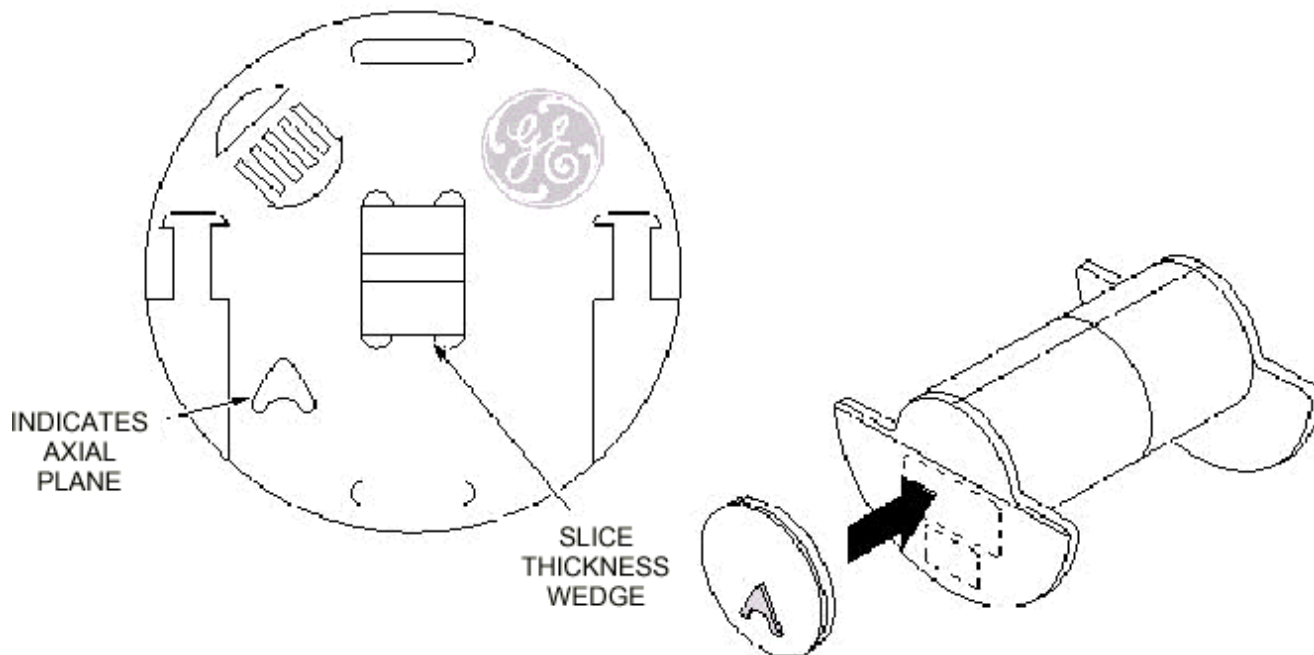


LANDMARKING DQA PHANTOM IN QUAD HEAD COIL  
 ILLUSTRATION 7-7

4. Set up scan protocol. Refer to Table 7-11.
5. At Touch Screen touch **[Display Modes]**. Make sure **[Auto Display]** is selected (lit), then touch **[Accept]**.
6. Touch **[Scan]** (system will Auto Prescan first).
7. When image displays, verify the “A” appears in the lower left-hand corner. The image should have the GE logo in the top, right-hand corner. See Illustration 7-8 (DQA-III phantom). Left/right reversal is caused by incorrect polarity of the X gradient. Top/bottom reversal is caused by improper Y gradient polarity.
8. Verify that the slice thickness wedge is approximately centered in the window. If it is not, schedule time to align the alignment lights and/or do the isocenter Z calibration.
9. Touch **[Cancel]** to exit.



7-9-1 Scan DQA Phantom (Horizon 5.X) (continued)



DQA-III PHANTOM GEOMETRY  
ILLUSTRATION 7-8

### 7-9-1 Scan DQA Phantom (Horizon 5.X) (continued)

#### Check Alignment Lights

Alignment lights are checked during Scanning with DQA Phantom procedure in Section 7-9-1, *Procedure*. If alignment lights do not work properly, schedule time to repair them.

### 7-9-2 Scan DQA Phantom (Release 8.X, 9.X, 10.X & 11.X)

#### Tools Required

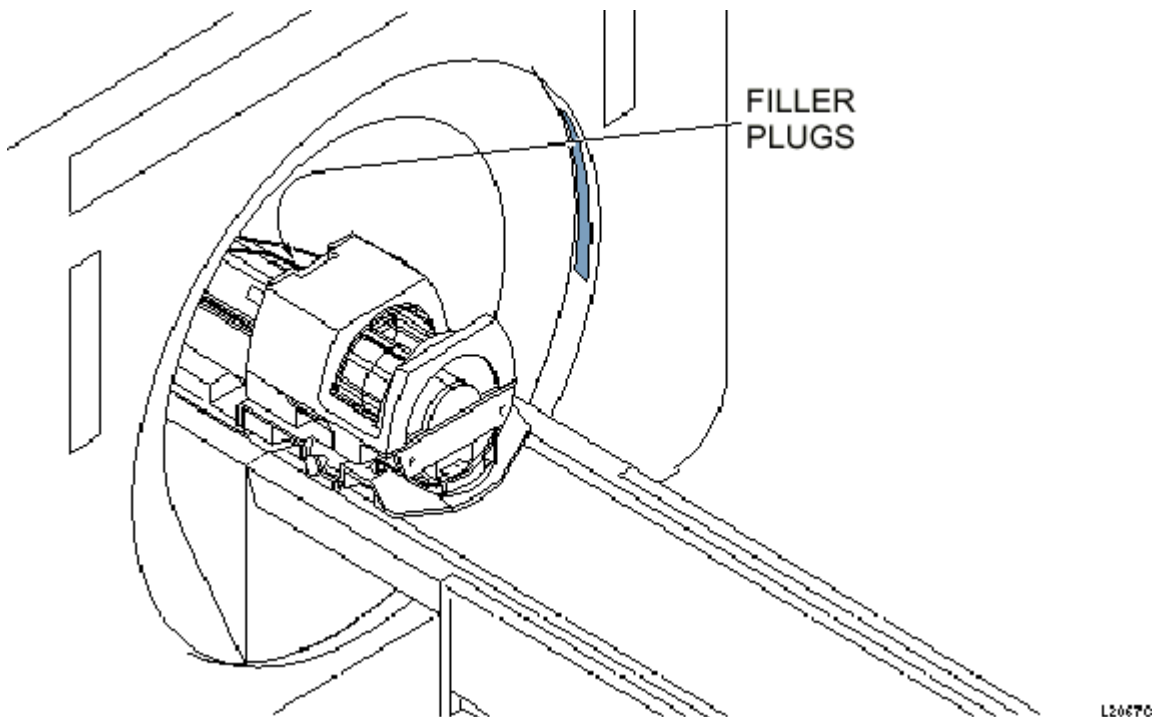
- □ DQA-III Phantom, 2131027-2

## WARNING!

**POISON HAZARD! THE PHANTOM CONTAINS NICKEL, A SUSPECT CARCINOGEN. DO NOT INGEST. DISPOSE OF AS A HAZARDOUS WASTE ACCORDING TO STATE AND FEDERAL REGULATIONS.**

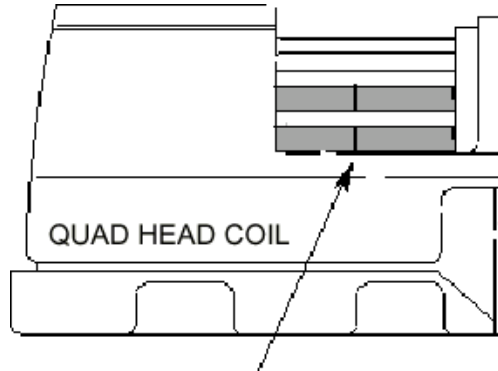
#### Procedure

- 1 Place the DQA-III phantom in the head coil. Position with fill plugs up, and toward rear of magnet (see Illustration 7-9).



**7-9-2 Scan DQA Phantom (Release 8.X, 9.X & 10.X) (continued)**

2. Landmark in sagittal and axial planes (DQA-III coronal plane is not at isocenter). See Illustration 7-10 for positioning the phantom in the quad head coil.



Landmark the DQA-III Phantom on the Landmark Line.

**LANDMARKING DQA-III PHANTOM**  
 ILLUSTRATION 7-10

3. At the keypad on the front magnet enclosure, press LANDMARK then MOVE TO SCAN.

**Note**

Do not rotate or skew phantom in head coil. This will cause errors in the analysis of Z isocenter. Landmark errors can also cause errors in the analysis.

4. At the operator work space, prepare the system as follows.
  - a. Click on **[New Pt]**, and **<ENTER>**  
 Id: **geservice**  
 Name: **isocenter cal**  
 Weight (Lb.): **111**  
 Set Patient Protocols to **Service**.
  - b. In the Protocol field, type **o.22.1** (o=Other, 1=series number).
  - c. **[Save Series]**, then **[Prepare to Scan]**.
5. Select **[Scan]** (system auto prescans first).
6. Check the geometry of the axial image. Ensure that images are not rotated nor skewed. If they are, reposition the phantom and rescan.
7. When image displays, verify the "A" appears in the lower left-hand corner. The image should have the GE logo in the top, right-hand corner. Left/right reversal is caused by incorrect polarity of the X gradient. Top/bottom reversal is caused by improper Y gradient polarity.
8. Verify that the slice thickness wedge is approximately centered in the window. If it is not, schedule time to align the alignment lights and/or do the isocenter Z calibration.

### 7-9-2 Scan DQA Phantom (Release 8.X, 9.X & 10.X) (continued)

#### Check Alignment Lights

Alignment lights are checked during Scanning with DQA Phantom procedure in Section 7-9-2. If alignment lights do not work properly, schedule time to repair them.

### 7-9-3 Remove GE Test Scans

#### Note

At end of PM, remove GE test scans so customer has maximum image space on system disk.

#### (Horizon 5.X)

1. At Touch Screen, touch **[LIST/SELECT STUDIES]**. Locate GE test scans.
2. If test scans are on system, and this information is no longer required, remove these studies.
3. **[CANCEL]** back to first screen then touch **[REMOVE]**. Touch **[LIST/SELECT]** for all images from disk by **[STUDY]**. Select all studies to be removed and touch **[EXECUTE]**.

#### (Release 8.X, 9.X & 10.X)

1. Mouse click on the Display Desktop to open browser.
2. Select images listed in the browser by clicking on image name.
3. Select the **Remove** menu and select **Remove Images**.

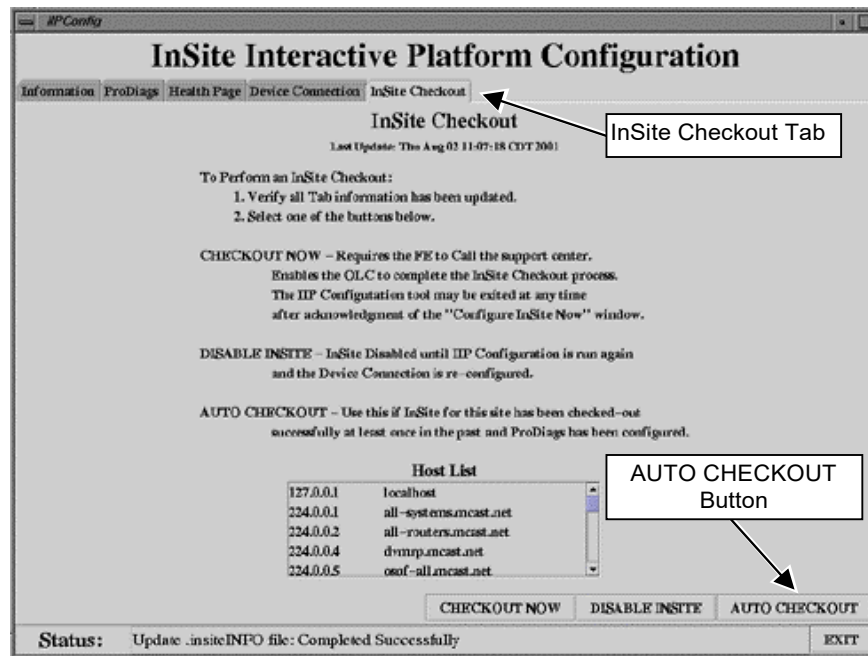
### 7-9-4 Check Cabinet Doors and Covers

To insure proper cabinet cooling, verify that all cabinet rear doors are closed and all cabinet front covers are installed before leaving site.

### 7-10 Check Modem

Check the Modem by performing an “Auto Checkout” in the InSite Interactive Platform (IIP) Configuration.

1. Start the Guided Install Graphical User Interface (GUI) by selecting
2. Select the **Configure InSite/IIP** tab. This step opens the InSite Interactive Platform Configuration GUI.
3. Select the **InSite Checkout** tab. See Illustration 7-10.



INSITE CHECKOUT TAB  
 ILLUSTRATION 7-10

4. Click the **[AUTO CHECKOUT]** button. See Illustration 7-10 for location of button.

#### Note

The **[AUTO CHECKOUT]** button can only be used if a sclink.cfg file exists, (i.e., meaning the site has completed a checkout using the **[CHECKOUT NOW]** button at some previous time. **[AUTO CHECKOUT]** will run ConfigLink, dial the AutoSC, queue a task with the AutoSC to dial back, and wait for the AutoSC to dial back and leave a file /tmp/autocheckout. The IIP Configuration Tool will wait only 10 minutes for the file to appear. Typically, the AutoSC will call back in 5-6 minutes.

**7-10 Check Modem (continued)**

- If the AUTO CHECKOUT does not verify connectivity, contact the OLC. Refer to Table 7-12 for the appropriate OLC phone number.

TABLE 7-12  
 ON-LINE CENTER PHONE NUMBERS

OLC-AMERICAS	OLC-EUROPE	OLC-ASIA
Phone: 1-800-321-7937	(33) 1 3920 0007	81-426-56-0033

In the **US ONLY**:

Select Option 1 for OLC, 4 for Connectivity Support.

If there is no live response, the call is transferred to the message center and a case/dispatch is created.

If there is a live response, the connectivity team will work with the FE to establish a connection.

- When the AUTO CHECKOUT procedure is completed, click the **[EXIT]** button and close the liP Configuration GUI.
- Close the Guided Install GUI.

**7-11 Review System Health Report**

Print out a System Health Report to review the overall status of system. If issues exist, take corrective actions; this can be done, time permitting, during a PM. If time does not permit, schedule a separate visit to address open issues.

The health page contains a collection of logs and statistics, gathered over a specified time period (typically 30 days.)

- System Hardware and Software Configuration: Includes the network addresses, software revisions, system ID, hospital name.
- Number of computer reboots: The number of times someone restarted the OC software and the date of the last five system reboots.
- Number of TPS resets: The number of times scan hardware required a reset, and the number of times the reset failed. .
- Notes for Service: Notes that InSite added to the message log or customers added to the message log, to inform you about problems that arose since the last report.
- Selected Errors from Other Logs: The results of a search of the /var/adm/messages logs on the OC and Bit3 for failures and panics. Only the last ten are displayed.
- Applications Core Files: A list of core files.
- Temperatures: Bore temps.
- Disk Usage: The disk usage per partition.

## 7-11 Review System Health Report (continued)

Health Page Contains (continued):

- The IPG Stage file: Any letters added to the ipg\_stage file.
- The last service tests run: Spt, TLT, RFT, etc.
- Disk full errors: Any disk full errors.
- Prescan failures: The number of APS failures.
- RF faults: The number of RF amplifier faults.
- Gradient errors: The number of Gradient errors.
- PSD errors: The number of psd generated errors.
- System Health: The system health check (reports system specifications with pass/fail status).

A system's health page report can be acquired from the system in one of three (3) ways:

- Automatically through InSite
- On Site - via the Common Service Desktop Browser
- Requesting via E-mail

### Automatically

Program the scanner to automatically create the health page report, per the schedule entered during installation of InSite, or at a later time. The system mails the health page to the configured addresses. You can select and view the health page report in the service desktop, depending on the software release, under the Utilities menu or the Common Service Desktop Browser.

The automatically generated report covers the time interval since the last report.

### On Site - via the Service Desktop

If you want immediate access to the health page report, direct the scanner to generate it for you.

On the Service desktop, under Utilities or Common Service Desktop Browser, select System Health Page. This will bring up the GUI version of the Health Page tool.

**7-11 Review System Health Report (continued)**

**Requesting Via E-Mail**

You may request the current health page report by sending an e-mail to the Automated Support Center (ASC). The ASC will SWEEP the system for the report, and e-mail it to you in less than 60 minutes. This report covers the preceding 30 days (unless system was configured for a different number of days) and contains the customized content.

Anyone with a GEMS email address can request a report. You do not have to have your address in the email list on the scanner.

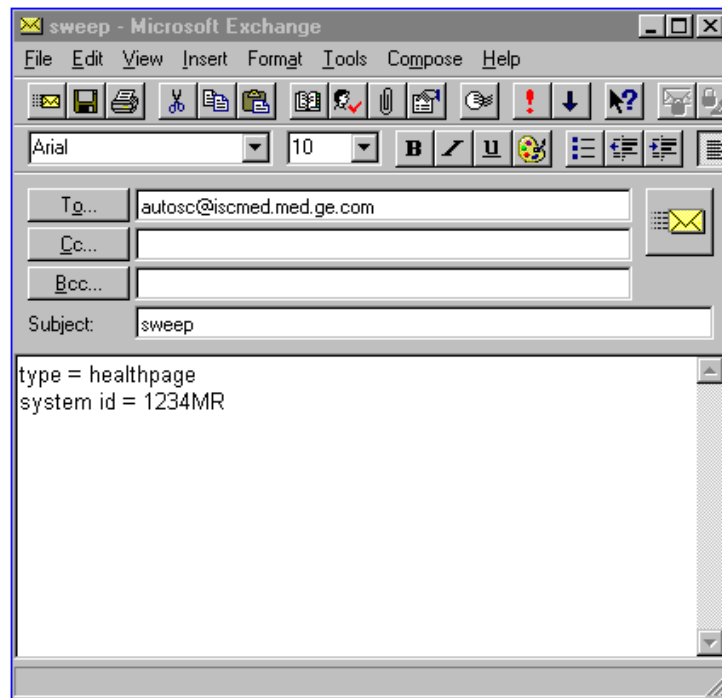
From your mail tool, create an e-mail message with the following content (See Illustration 7-11):

**To :** autosc@iscmed.med.ge.com

**Subject :** sweep

type = healthpage (**type** is required in the body of the message)

system id = XXXXXXXXXXXX (**system id** is required in the body of the message)



**EMAIL REQUEST**  
 ILLUSTRATION 7-11

**7-12 Check Battery Voltage on MDP**

Refer to the General Maintenance section of the MDP Manual. A certified electrician with Arc Flash PPE is needed to perform this task.

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