

# Honeywell

RECEIVED

FEB 2 1976

J. H. SALTZER  
cc: List

TO: List of Attendees

SUBJECT: Forum Minutes for January 14, 1976

ATTENDEES: G. Ackerman-Lewis                      P. B. Kelley                      L. J. Ryan  
              W. J. Burner                              E. D. Kleinow  
              R. J. Chevalier                         R. A. Roach

---

## HARDWARE - E. D. Kleinow

- Memory . SCU-B Store A had problem causing two crashes. FED replaced word mother board.
- Processors . Processor A will not allow salvager to run. Multics returns to BOS. FED suspects a cache problem and will investigate.
  - . Leo noted that total hardware performance has degraded over the last two months and asked if 3rd shift availability of the System for FED use in maintenance & checkout would be useful. McFall says FED could and would use the time if made available. McFall and Ryan will work out an acceptable schedule for 3rd shift one night a week.

## SOFTWARE - G. Ackerman-Lewis

- . Initialization is causing problems with slow down and hangs. P. Green - CISL - looking into this.
- . New file system scheduled for installation within the next few weeks.
- . MSS 27.4 running.

## OTHER

- . Billerica has removed one DSU190B.
- . Magnetic tapes provided by Billerica have a problem with the paper vendor name label (around flange). Some of the labels are disintegrating and the paper is falling into the loop chambers.



F O R U M   L I S T

D. Clark

C. Clingen

R. Daley

W. Flaherty

J. Gintell

D. Jordan

G. Lundberg

J. Regester

**Prof. J. Saltzer**

R. Shoemaker



To: Forum Attendants  
 From: Grace E. Ackerman-Lewis  
 Date: December 31, 1975  
 Subject: Multics availability December 15 - 28

Summary of Lost Time

	# of Crashes -----	Crashes -----	Time Lost Other -----	Total -----
Hardware:	9	03:51	0:00	03:51
Hardware Suspected:	1	00:07	0:00	00:07
Not Yet Analyzed:	1	00:09	0:00	00:09
-----	-----	-----	-----	-----
Total:	11	04:07	0:00	04:07

Total lost time/Scheduled up time = 04:07/132:30 = .030 (97.0% up time)

Total lost time/Unattended time = 11:23/179:30 = .064 (93.6% up time)

December month-to date lost time = 12:23 (scheduled)  
 15:08 (unattended)

#	sys.	date	time	type	brief explanation
482	27.4	12/22/75	08:00	H	E191 area powered down
481	27.4	12.27/75	11:06	H	Bulk store errors
480	27.4	12/26/75	23:30	H	Parity errors SCU-A Store A & B
	27.4	12/25/75			NO CRASHES
	27.4	12/24/75			NO CRASHES
479	27.5	12/23/75	08:11	S	Installation of new system failed (tape would not boot)
	27.4	12/22/75			NO CRASHES
	27.4	12/21/75			NO CRASHES
	27.4	12/20/75			NO CRASHES
478	27.4	12/19/75	16:20		SCU-B Store A dropped power
477	27.4	12/19/75	09:00	H?	Processor A tried to initialize itself
	27.4	12/18/75			NO CRASHES
476	27.4	12/17/75	16:50	H	Parity error SCU-B Store A
475	27.4	12/17/75	15:45	H	Parity error SCU-B Store A
474	27.4	12/17/75	10:08	H	Parity error CPU-A cache memory
473	27.4	12/17/75	09:42	H	Parity error CPU-A cache memory during add of CPU-B
	27.4	12/16/75			NO CRASHES
472	27.4	12/15/75	09:07	NYA	Attempt to terminate initializer process
471	27.4	12/15/75	08:42	H	Parity error (ZAC) CPU-A during add of CPU-B

386	11/14/75	1	NSS	Salvager should question clock values earlier than today (ie, 01/01/01, etc.)
384	09/17/75	1		It can overflow very easily, leading to system crashes
356	02/21/75	1	dmw	Bug(s) exist in Network locking software -> oxxx timeouts
385	11/14/75	2		Problems exist with channel definition table (password suppress, etc.)
383	08/21/75	2		copyright_archive fails if archive longer than 64K
350	01/02/75	2	shm	Shutdown with 2 CPUs may not work (depends on which CPU is used for shutdown)
348	12/03/74	2	mjg	Users who hangup may not be logged out
			tac	security problems in the automatic creating of home directories
382	08/21/75	3		add_copyright will not work with several recent source types
380	07/30/75	3	srn	delete_acl with no args deletes user's access to working dir (MPRF 8588)
378	07/30/75	3	***	qedx won't edit some long (>64K) segments (MPRF 8591)
375	05/22/75	3	n1m	printer dim does not raise hood when out of paper (if in ned mode or printing head sheet)
369	04/10/75	3		Shutdown with 3 CPUs may result in a loop (stz used to clear lock, should be stac)
366	03/22/75	3	shm	user can get into loop creating/destroying processes thus tying up system.
364	03/02/75	3	srh	mla does not handle star convention properly (MPRF 8010)
362	03/02/75	3	srh	delete_name gives incorrect error message on a msg (bug in cname_file)
359	03/02/75	3	srh	EXL compiler faults if used for 1st time after debug has listed object code (fixed with prelinking)
358	02/27/75	3	bs9	initialize_peek_limits leaves old (possibly dangerous) limit table on an error (missing seg)
354	02/12/75	3	rab	Initialize_peek_limits fails if any error is encountered while processing (security problem?)
338	09/26/74	3	bs9	restarted printer requests indicate a zero charge (\$0.00)
324	08/27/74	3	tvv	message coordinator can lose a wakeup and then stops printing
322	08/21/74	3	srh	command_processor can get fatal process errors (with some cases of iteration)
315	07/24/74	3	amk	Long salvager (after clean shutdown) is detecting bad filemap checksums
282	05/05/74	3	mam	qedx fails to find expressions like /a.bc.*a.bd/ in strings like "a.bc a.b abd"
240	01/10/74	3	NSS	lock does not handle directory deletions well. (May result in seg fault -> crawlout)
141	07/22/73	3	***	>system_library_tools should be removed from default search rules
129	07/07/73	3	rgb	renaming directories does not terminate them and can cause serious problems

\*\*\* - fix completed (to be installed)  
 Inst - fix installed  
 (END)

This segment contains a list of known CPU hardware bugs/deficiencies.

084	083	082	081	080	079	078	077	076	075	074	073	072	071	070	069	068	067	066	065	064	063	062	061	060	059	058	057	056	042	
	06/13/75	04/19/75	01/15/75	01/15/75	10/14/74	10/14/74	10/14/74	09/05/74	08/26/74	08/05/74	05/2/74	05/02/74	05/02/74	03/25/74	03/18/74	03/11/74	02/14/74	02/14/74	02/13/74	02/12/74	02/06/74	02/04/74	01/24/74	01/24/74	01/12/74	01/12/74	01/12/74	01/03/74	01/03/74	10/13/73
	***	***	***	ENG	ENG	***	***	inst	inst	inst	***	inst	inst	inst	inst	inst	inst	inst	inst	inst	inst	inst	inst	inst	inst	inst	inst	inst	inst	inst
	2	2	2	2	2	2	2				1	2																		
	CSL causes 2-bit shift at boundsfault boundary (PHAB-PG070)	IPR faults occur if target string of move (etc) is zero length.	CMPN does not always work	CMPC sometimes fails	Bounds faults not being recognized on decimal instructions (PHAB-PE036, PHAB-PG060)	Ring alarm faults are only sampled at RTCD time (PHAB-PE052)	Packed pointer load faults (FCD released)	CMPC sometimes fails at page boundaries.	MLR sometimes stores extra fill characters.	CMPC sometimes fails with multiple page faults.	MLR (CMPC, etc) will not work with 1048576 characters.	ADMP sometimes fetches operand from even word instead of odd.	CMPB fails with certain bit offsets not on character boundaries.	XED'd instructions fail to do indexing correctly (PHAB-PE052)	MLR and CMPC place fill characters in last few words at page bdr	MPY gets overflow on -2**35 inst -2**35.	MLR sometimes places 8 zeros near page boundary.	MVN gets fixedoverflow when moving 02.	MLR sometimes changes a single character to fill character at page boundary.	MLR moves 8 characters extra at page boundary.	CMPC fails at connect fault time processing fill chars.	CSL instruction fails across boundfault boundaries.	MVT sometimes fails if take page fault on table.	MLR gets oo-not-completes.	MLR get no-write-permission by miscalculating TSR.	CMPC sometimes gives wrong results.	MLR instruction fails across boundfault boundaries.	SREG gets oo-not-complete if at end of page.	CI and/or SC modification does not always work.	

The severity of the problem is interpreted as follows:

1. Severe, the problem is holding up system progress.
  2. Medium, the problem is annoying but can be circumvented.
  3. Slight, the problem is not very serious.
- \*\*\*. Fix known, awaiting installation.

(END)



To: Administrative Distribution

From: Grace Ackerman-Lewis

Date: December 31, 1975

Subject: Multics Crash Analysis for December 15 - December 28

Total number of crashes = 12 (ERFs 471 - 482)

Hardware:

Parity error CPU-A cache memory	2
Parity error CPU-A (ZAC)	1
Bulk store errors	1
Parity error SCU-B Store A	2
Power loss SCU-B Store A	1
E191 area 2 powered down	1
Parity error SCU-A Store A & B	1
	-----
Total:	9

Hardware Suspected:

CPU-A tried to initialize itself	1
	-----
Total:	1

Not Yet Analyzed:

Attempt to terminate the initializer process	1
	-----
Total:	1

Software:

Installation of new system failed (tape would not boot)	1
	-----
Total:	1

To: Administrative Distribution

From: Grace Ackerman-Lewis

Date: January 14, 1976

Subject: Multics Crash Analysis for December 29 - January 11

Total number of crashes = 18 (ERFs 483 - 001)

Hardware:

Parity SCU-B Store A	2
Parity CPU-A	3
E191s Inoperative	2
Parity CPU-B	1
Total	<u>8</u>

Hardware Suspected:

Processor A tried to initialize itself	2
Total	<u>2</u>

Not Analyzable (no dump):

Emergency interrupt from 355	1
Return to BOS, no message	1
Total	<u>2</u>

Software Suspected:

Initializer looping	1
Total	<u>1</u>

Other:

Switch set wrong while deleting a memory	1
Total	<u>1</u>

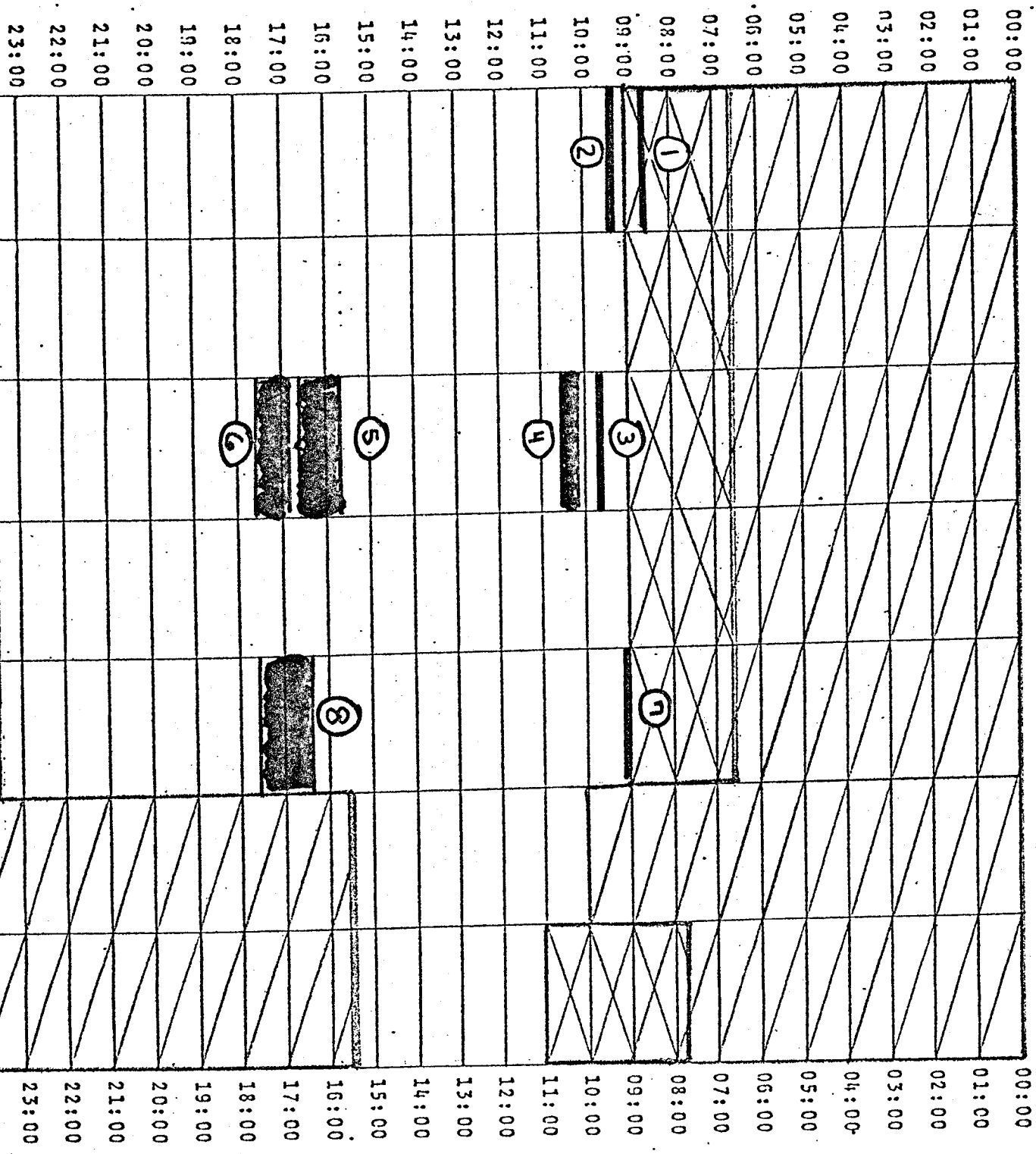
Not Yet Analyzed:

Return to BOS, no message	1
Init_branches: del_dir_tree code 77777013332	1
Attempt to terminate initializer process	2
Total	<u>4</u>

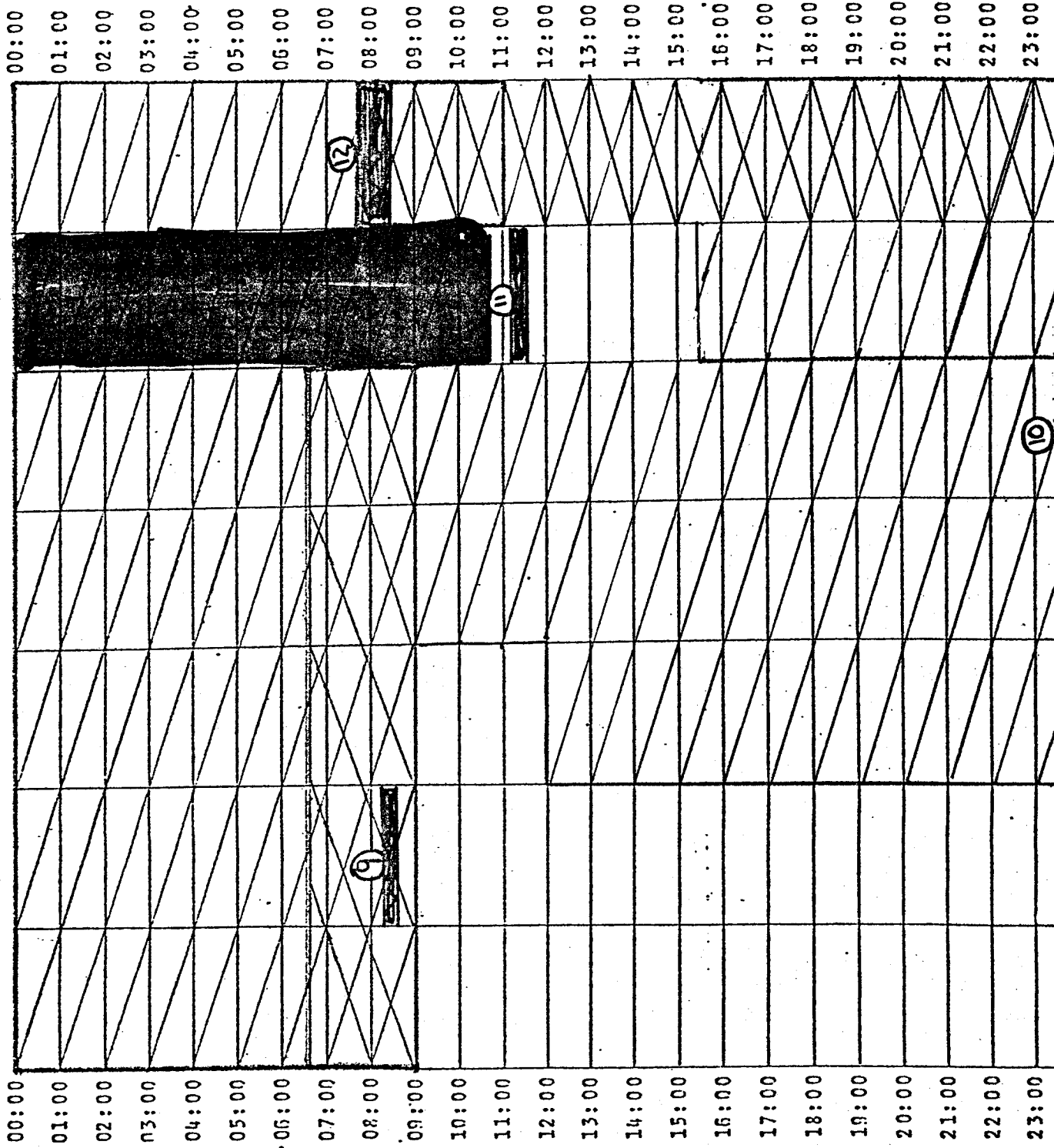
#	Time Lost		Explanation	Time Lost		
	Down At	Up At		Due To		
1	08:42	12/15	- 08:45 12/15	Crash, ERF 471	00:03 H	Parity error (ZAC) CPU-A while adding CPU-B
1	09:07	12/15	- 09:16 12/15	Crash, ERF 472	00:09 NYA	Attempt to terminate the Initializer process
3	09:42	12/17	- 09:47 12/17	Crash, ERF 473	09:42 H	Parity error CPU-A cache memory while adding CPU-B
4	10:08	12/17	- 10:39 12/17	Crash, ERF 474	00:31 H	Parity error CPU-A cache memory
5	15:45	12/17	- 16:35 12/17	Crash, ERF 475	00:50 H	Parity error SCU-B Store A
6	16:50	12/17	- 17:30 12/17	Crash, ERF 476	00:40 H	Parity error SCU-B Store A
7	09:00	12/19	- 09:07 12/19	Crash, ERF 477	00:07 H?	SCU-A tried to Initialize itself while adding CPU-B
8	16:22	12/19	- 17:39 12/19	Crash, ERF 478	01:19 H	SCU-B Store A dropped power
9	08:11	12/23	- 08:26 12/23	Crash, ERF 479	00:14 S	Installation of new system failed
10	23:30	12/26	- 10:53 12/27	Crash, ERF 480	11:23 H	Parity error SCU-A Store A & B
11	11:06	12/27	- 11:32 12/27	Crash, ERF 481	00:26 H	Bulk store errors after adding memory B
12	08:00	12/28	- 08:29 12/28	Crash, ERF 482	*	E191 area 2 powered down
13	11:16	12/30	- 11:51 12/30	Crash, ERF 483	00:35 O	Switch set wrong while deleting a memory
14	21:19	12/30	- 22:38 12/30	Crash, ERF 484	01:19 NA	Emergency Interrupt from 355 (no dump)
15	10:21	12/31	- 10:28 12/31	Crash, ERF 485	00:07 H	Parity error, SCU-B
16	12:46	12/31	- 13:38 12/31	Crash, ERF 486	00:52 S?	Initializer looping
17	20:47	01/03	- 07:45 01/04	Crash, ERF 487	10:58 H	E191s shut off, probable power surge
18	11:14	01/04	- 11:21 01/04	Crash, ERF 488	00:27 H?	RTB adding CPU-B
19	08:58	01/05	- 09:26 01/05	Crash, ERF 489	00:28 NYA	RTB no message
20	00:17	01/06	- 06:45 01/06	Crash, ERF 490	06:28 H	Parity error, CPU-A
21	08:57	01/07	- 09:03 01/07	Crash, ERF 491	00:06 H?	RTB adding CPU-B
22	12:11	01/07	- 12:47 01/07	Crash, ERF 492	00:36 H	Parity error, CPU-B
23	18:52	01/07	- 19:40 01/07	Crash, ERF 493	00:48 NA	RTB, no message (no dump)
24	09:00	01/09	- 09:28 01/09	Crash, ERF 494	00:28 NYA	Intl_branchesi del_dir_tree code = 77777013332
25	11:00	01/09	- 14:48 01/09	Crash, ERF 495	03:48 H	Parity error, SCU-C Store A
26	17:52	01/09	- 18:02 01/09	Crash, ERF 497	00:10 NYA	Attempt to terminate Initializer process
27	18:51	01/09	- 20:05 01/09	Crash, ERF 498	01:14 NYA	Attempt to terminate Initializer process
28	19:05	01/10	- 19:12 01/10	Crash, ERF 499	00:17 H	Parity error, CPU-A
29	08:44	01/11	- 08:49 01/11	Crash, ERF 500	H	Parity error CPU-A SCU-A
30	17:56	01/11	- 24:00 01/11	Crash, ERF 001	H	E191 area in check

\* Multics was down all day 12/28/75 for a test of the new area management package so this time was lost only for purposes of the test, not for users.

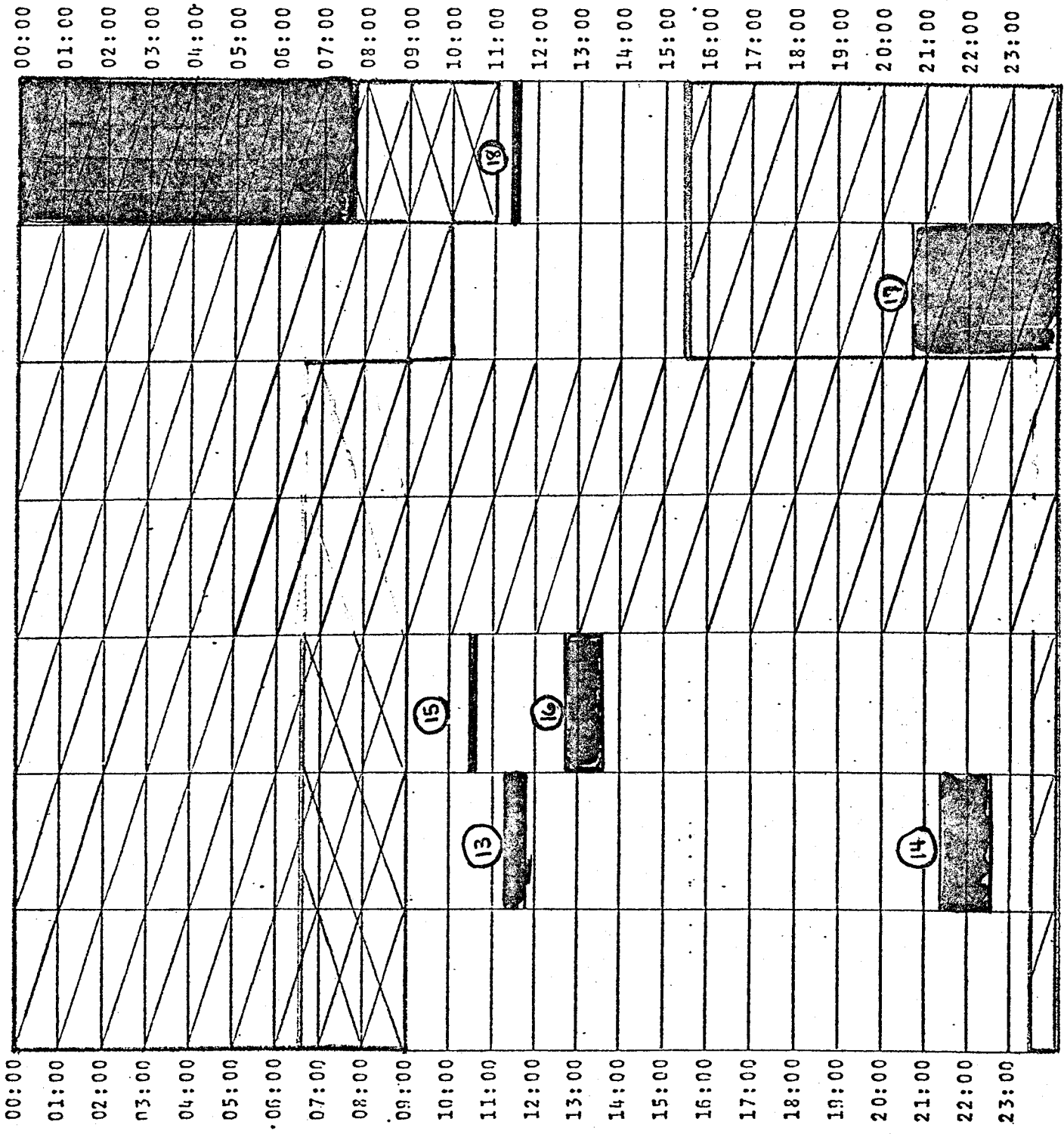
Monday 12/15      Tuesday 12/16      Wednesday 12/17      Thursday 12/18      Friday 12/19      Saturday 12/20      Sunday 12/21



Monday 12/22 Tuesday 12/23 Wednesday 12/24 Thursday 12/25 Friday 12/26 Saturday 12/27 Sunday 12/28



Monday 12/29 Tuesday 12/30 Wednesday 12/31 Thursday 12/1 Friday 1/2 Saturday 1/3 Sunday 1/4



Monday  
1/5

Tuesday  
1/6

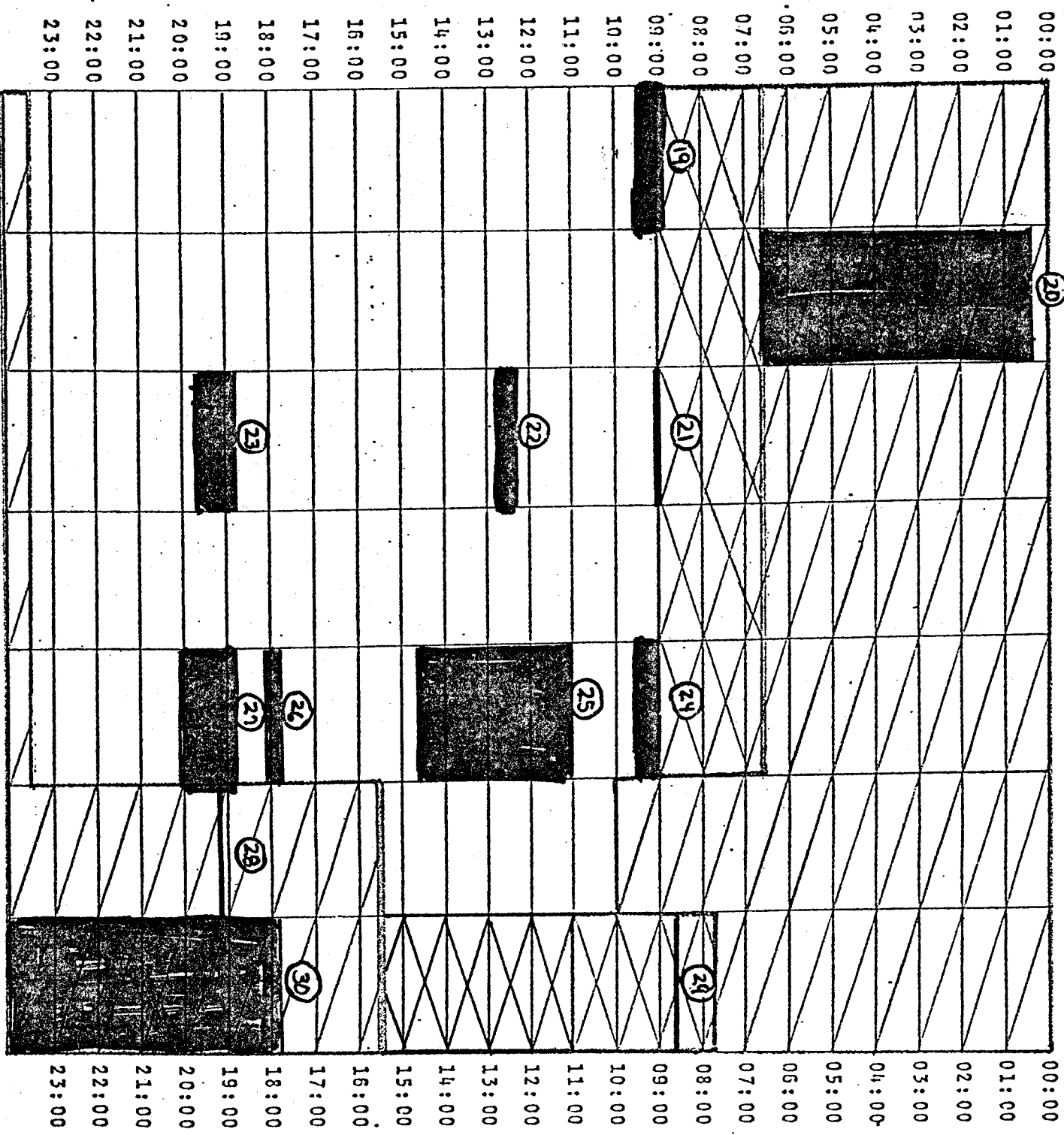
Wednesday  
1/7

Thursday  
1/8

Friday  
1/9

Saturday  
1/10

Sunday  
1/11



4