To: Distribution

From: David M. Jordan

Date: April 22, 1975

Subject: System Maintenance Status, March 22 - April 18

1. Significant Events

MIT and Honeywell reached agreement concerning the
monetary problems experienced with MIT's Multics. As a
result, Multics will be with us for at least another year
and indications are good that a long term solution will
develop from this agreement.

In an effort to better understand our functions and the
amount of effort required for various tasks, the members of
the Multics group have begun a fairly detailed study of
individual tasks and projects. The aim of this study is
twofold: first, to give everyone concerned a better
understanding of the tasks involved with a particular
position or project; and second, to aid in learning accurate
goal and deadline setting.

Grace's changes to backup to allow the notification to
users of errors encountered by backup in the users'
directories has been installed. She is currently working on
setting up operational procedures to be followed in order to
get it all working.

-Our group has begun work on the Library Installation
Tools PLM. We have decided to treat the PLM as essentially
two distinct sections: a users' guide and a program logic
manual. We are beginning with the users' guide and thus far
have generated a draft table of contents and writeups for
several subsections.

A. Online System Installations

During the past month there were 17 installations in
the online libraries. Included among the changes installed
were: several changes in support of the Access Isolation
Mechanism; the program changes required for user
notification of backup errors; a new version of PL/1 I/O,
including support for fast record I/O and for the new option
env (stringvalue); and a new version of the Network File
Transfer Protocol. We are currently facing a rather large
backlog of online installations, with pending changes
including: the long-awaited estimate_bill command; the new

output spooling facility; new versions of the PL/1 and
Fortran compilers and some runtime support; the new mail
command; and several more changes in support of AIM.

B. Other Installations

During this reporting period we installed hardcore
systems MSS 25.4 and MSS 25.5. Included among the changes
made were: the addition of an sst name table to relate
segment names to ast entries; a new page control including
several simplifications and performance improvements,
particularly to the handling fo the Bulk Store; and numerous
other minor changes and fixes. In addition, we created (but
haven't yet updated) BOS 1.43 with a fix for the handling of
the card reader and changes to allow BOS to function
correctly with the new page control in MSS 25.5. Our
installation backlog in this area is currently quite small,
with only three changes remaining to be processed: new els
versions of listen_ and the command processor; a new,
cleaner version of iol; and the removal of directory
reference names from the kst.

C. Crash Analysis

During the past 4 weeks there were only 13 system
failures. Included during this period was an 11 day stretch
with no crashes at all.

	Mar 22-28	Mar Apr 29-4	Apr 5-11	Apr 12-18	Total
Hardware	2	0	1	1	4
Hardware Suspected	1	0	0	1	2
Software	2	0	1	2	5
Software Suspected	0	0	0	0	0
Not Yet Analyzed	1	0	0	1	2
Not Analyzable	0	0	0	0	0
Other	0	0	0	0	0
Total	6	0	2	5	13

2. Problem Areas

With a significant amount of effort going into online
installation instruction, we have fallen behind in the
processing of online installations. At this point there are
about 20 submissions pending including the large
installation of the new PL/1 and Fortran compilers.

As was noted above, several of the crashes during the
past month have yet to be analyzed. As with the online
installation backlog, this is due in part to crash analysis
instruction interfering with regular analysis. Hopefully

both of these problems will be resolved as those learning
the functions begin to gain a bit of confidence and
experience.

The recent submission of the new mail facility has left
us in a bit of a bind. The user notification of backup
errors currently depends on the old mail facility and will
have to be modified to be compatible with the new version.
At this point it is unclear who will make the required
changes.

3. Task Status

Grace's work on learning crash analysis is progressing
well. Quite a bit of work remains, especially in making
previously learned methods more automatic. In addition, the
backup error processing routines have been installed, so
Grace is working on the details of making the system easily
workable by Operations. Also, the new mail submission may
require some of her time to make changes so that the error
processing system will be compatible.

Pattie has been making reasonable progress on learning
how to process online submissions. At this point she also
needs more experience and some more awareness of how
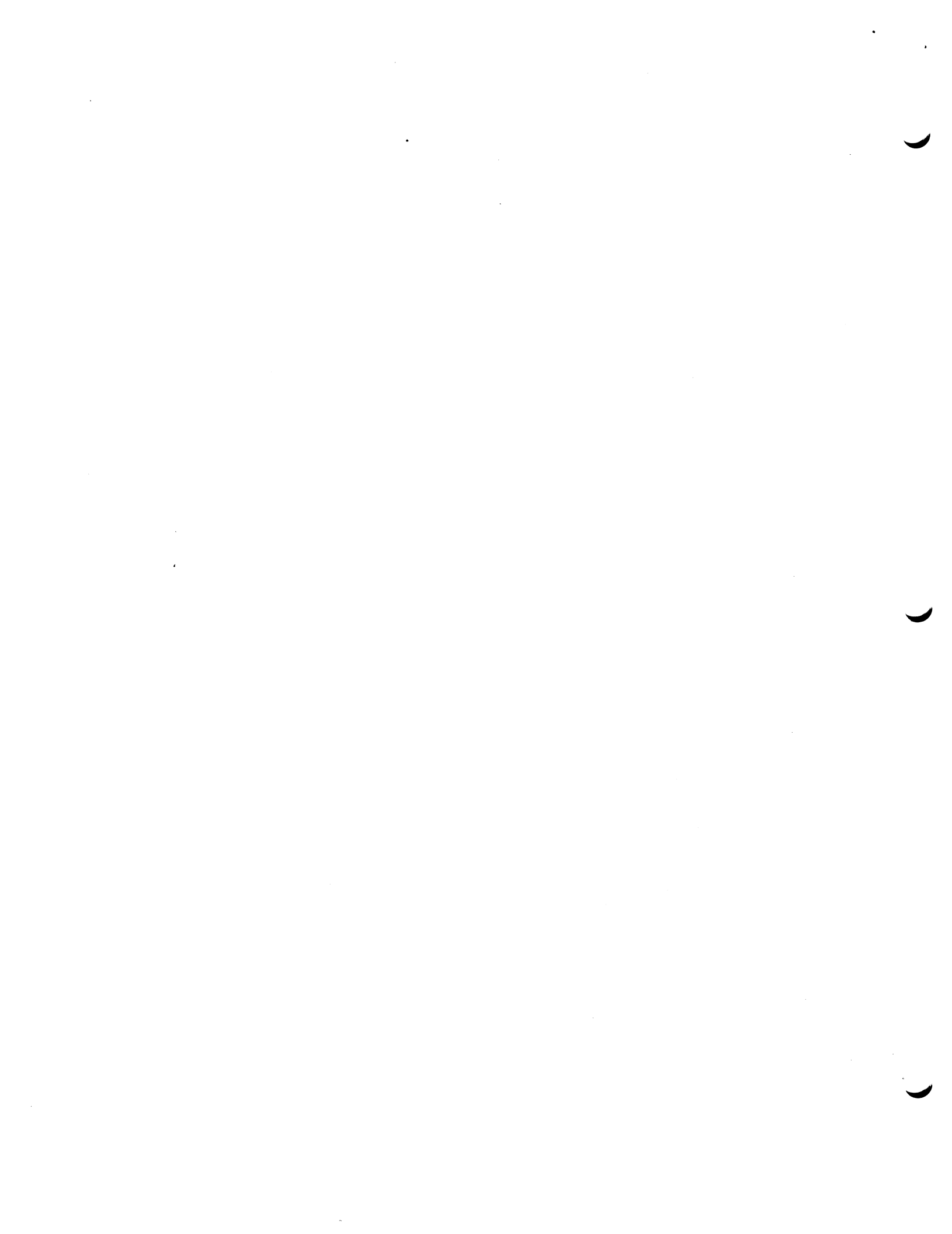dependant the rest of the group is on online installations.

Grace, Peter, Gary and I have made significant progress
on the Installation Tools PLM. At this point we have a
target table of contents and we're beginning to fill in some
of the sections. We haven't yet begun on the PLM portion of
the manual, but I expect that that will not be started until
the users' guide is finished.

With the recent decision to try to more accurately
evaluate and report our individual work progress and tasks,
we have begun keeping track of what we're doing. This task
is currently a bit nebulous, but we expect to spend a fair
amount of time on it in the next few weeks.

Some progress has been made on the library tools, but a
variety of other tasks has combined to limit the amount of
work done. We are now nearing the end of this project, but
numerous minor tasks and finishing up work remain to be
done.

4. Work Planned for the Coming Month

As mentioned above, we expect to continue working to
teach and learn crash analysis and online installation
processing. We also expect to continue our work on the new
task lists and the PLM. In addition, we hope to get caught
up with online submissions again (and to install the new I/O
spooler and the new PL/3 and Fortran compilers) and to get
the backup error processing system operational.

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
Online Installations	Kelley (Dratel)	Continuing Task			Pattie beginning to get some experience with new tools, etc.
Maintain source lists	Roach	Continuing Task			
Maintain cross reference lists	Kelley (Dratel)	Continuing Task			
Maintain listings	Dratel	Continuing Task			Listings now up to date. We hope to get a complete check under way soon.

PROJECT _____ Maintenance (Hardcore and Hardware) _____ AREA _____

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
Crash Analysis	Kelley (Jordan)	Continuing Task			
Hardcore Installations	Ackerman-- Lewis (Kelley)	Continuing Task			
Operator Interface	Jordan (Roach)	Continuing Task			
Maintain Hardcore Cross Reference	Jordan	Continuing Task			New lists should be generated after MSS 25.0 installed

PROJECT_____User Interface_____   AREA_____

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
Consulting	All		Continuing Task		IPC will provide consulting 9-12 every day.
MPRF Handling	All		Continuing Task		IPC handling the administration
MMTU Handling	Williams		Continuing Task		IPC has taken over this responsibility

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
Maintain and improve library submission tests	Kelley	Continuing Task			
Convert cross reference to v2		4/15/73			
Upgrade all online installation tool exec_coms for the 6180 and install in the libraries and document them.	Kelley	3/26/73			Work beginning with study of current ec's

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
Look into compare_source_statement as replacement for cpa					Compare pl/1 source statements ignoring differences in comments and formatting
Design and implement an online system for registering modules being worked on, etc.					
Look into the possibility of making the source libraries generally accessible to users.			3-7-75		DONE! (forgot to mention it last time)
Create a system for processing backup error files to allow notification to users of errors encountered	Ackerman-- Lewis	5/1/74 5/1/74	6/15/74 2/15/75		Installed. Work now being done to make it operational.

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PROJECT _____Library Maintenance Tools Project_____ AREA____Installation tool enhancements____

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
Honeywell PLM - AN80: Library Maintenance Manual	Kelley				continuing
library_cleanup: to replace cleanup using the library descriptor	Kelley	11/04/74 11/04/74	11/18/74		little progress
upd_log_task_: fix bug in locking strategy	Kelley				MCR submitted - coding, testing done
object_test_: fix bug when testing ALM segments	Kelley				not begun

PROJECT ____Library Maintenance Tools Project_____ AREA _____ library descriptor tools____

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
reduction_compiler (~dc): make relative syntax functions PL/I quick blocks	Dixon	01/27/75 01/27/75	01/29/75 01/29/75	.1	INSTALLED
library_descriptor_compiler (ldc): simplify/increase-flexibility-of root naming strategy to meet requirements of Multics library descriptor	Dixon	01/29/75 01/29/75	01/31/75 03/12/75	.1	DONE
library_descriptor_compiler (ldc): document the compiler	Dixon	12/09/74 12/09/74	12/20/74 02/16/75	.6 .8	DONE
multics_libraries_.l: recode according to documentation using upgraded lgc	Dixon	02/03/75 02/03/75	02/05/75 03/12/75	.2	DONE
multics_library_search_: implement search technique for library_fetch, library_cleanup, library_info	Dixon	01/27/75 01/27/75	02/07/75 03/15/75	.6	DONE
lib_output_node_: implement info entry point for use by library_info; this entry formats output for terminal	Dixon	02/05/75 02/05/75	02/07/75 03/16/75	.1	DONE
library_info (li): code command which replaces msl_info	Dixon	10/05/73 10/05/73	10/30/73 03/30/75	1.5	DONE
li/lm: get and output ACLS, initial ACLS, access class, extra status	Dixon	12/15/73 12/30/73	04/25/75	1.0	ACL, IACL code done; just received documentation for AIM primitives

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TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
document the above procedures and subroutines	Dixon	03/01/74 03/01/74	05/30/74		* Documentation effort merged with PLM writing effort; unable to estimate required effort
lm/lpr: gather and output statistics on library segments				1.5	
library_descriptor (lds): code, document command which lists directories searched by li/lm/lpr for a given library	Ackerman-- Lewis	11/04/74 11/04/74	12/20/74	1 4	* 1 PM work remains; unable to estimate real time required
library_fetch (lf): rewrite gls to use library descriptor	Scherer	10/21/74 10/21/74	12/30/74 03/15/75	2 2.5	DONE
library_fetch (lf): fix anomalous error message; change search procedure to stop on first match	Dixon	04/30/75 04/30/75	05/09/75 05/09/75	.4 .4	* A New Task
library_cleanup (lcln): clean up the code; use library descriptor	Kelley	11/04/74 11/04/74	12/30/74	1.5 3	* 1 PM work remains; unable to estimate real time required
library_object_cref (loc): rewrite cross_reference to use library descriptor				2.5	
library_include_cref (lic): rewrite lcref to use library descriptor & source maps in standard obj segs				2	
library_check (lck): write program to check on consistency of libraries	Ackerman-- Lewis			3	