

*Roach*

**Multics Task Report**

MTR - 077

To: Distribution  
From: David M. Jordan  
Date: December 30, 1974  
Subject: System Maintenance Status, November 30 - December 27

**1. Significant Events**

After numerous hardware and scheduling problems Honeywell finally decided that the easiest way to get our processors updated with cache memories would be to ship them to Phoenix rather than to work on them here. This should result in less confusion here at MIT and with fewer hardware difficulties in the long run.

The MCR board decided to reject the latest MCRs for the library tools installations. Apparently several board members felt that the tools really don't meet some standards. Unfortunately, we don't have the person-power required to make the changes they would like to see, so current plans are to install the tools in the IML library. Hopefully this situation can be corrected in the future, as the previously installed tools are considerably less effective without the newer tools; and external sites will be unable to get the newer tools if they're in the IML.

In an effort to cut costs and save money, IPC has decided to back off from its original goal of providing essentially continuous computer availability. Starting with the New Year, services will be cut back with the elimination of third shift during the week and second and third shift on weekends. In addition, new prices have been arrived at and will go into effect on January 2, raising the rates approximately 25% for CPU time.

Roger has left for his yearly three week vacation. We are all hopeful that we'll survive without him and that he'll make it back before everything falls apart.

**A. Online System Installations**

During the past month there were a total of 197 changes to the online libraries. Included in these were a new printer dm, the new version of gcos, and new versions of several administrative commands. With Arlene's work on the library tools and the various holidays, vacation days, and down time a small backlog of installations has built up, but we hope to be caught up again during January.

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## B. Other Installations

During December we were only able to install MSS 24.4 and BOS 1.41. A number of problems contributed to this lack of progress, most notably hardware difficulties, vacations, and problems with the 24.4 system itself. These systems did, however, include a new collection 2 tty dim, several fixes for problems with tape\_, a new BOS FMT command which works on DSU-191 disks (!), and various other minor changes and fixes. In addition, we have received the submission of Bob Mullen's new scheduler, which includes several new and different tuning possibilities.

## C. Crash Analysis

Although the figures below indicate a fairly reasonable level of reliability, they are a bit unrealistic. In addition to the number of crashes, we also had several periods of extended down time and several periods of shaky operation. Hopefully things will quiet down now that the cache update has been moved to Phoenix, but it should be expected that some problems will arise as each processor is added back onto the system.

	Nov 30-6	Dec 7-13	Dec 14-20	Dec 21-27	Total
Hardware	5	4	8	4	21
Hardware Suspected	0	2	1	0	3
Software	2	3	2	1	8
Software Suspected	1	0	0	0	1
Not Yet Analyzed	0	0	0	0	0
Not Available	0	0	2	0	2
Other	1	0	0	0	1
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Total	9	9	13	5	36

## 2. Problem Areas

The MCR board recently decided that the use of smart\_alloc and the PL/1 procedure option rename by the library tools made them unacceptable for installation in the tools library. At this point we have decided to install the tools in IML, but this will mean that the tools will not be distributed to external sites and Phoenix. However, it appears that Phoenix, at least, is extremely interested in getting the tools and that they may be able to get the decision reversed. At the moment, the whole thing is up in the air, leaving everyone a bit unhappy and a bit unsure of future plans.

Gary has been called on to perform various comparisons

between MACSYMA as it runs on Multics and on the MAC PDP-10. It is hoped that this will help convince MAC to make more use of Multics rather than expanding their PDP-10 system. Unfortunately, this is precluding Gary's previous library tools tasks to some degree. However, Peter, Arlene and Grace have assumed some of the work of tools, so the overall affect may not be too bad.

The recent processor swap-out, various holiday's and several lengthy periods of down time have resulted in less system availability than would be desired. This, in turn, has resulted in less progress on some tasks than might have been expected. In addition, holidays and vacation time have also cut into the available person power. It is expected that at least some of these problems will be resolved in January, but continued hardware problems could have a serious impact.

### 3. Task Status

Arlene has submitted a fix for a bug in `get_library_segment`. Hopefully this will be the last change to `gls`, as it is soon to be replaced by the new `library_fetch` command.

Grace has completed work on the changes to backup for user notification of errors, and has submitted it for auditing; and the fixes for `test_tape` and `star_` have been submitted it for installation.

Peter has completed the latest round of fixes for `update_seg` and has submitted them for installation.

The library tools project has had its ups and downs. With Gary being tapped for the MACSYMA benchmark project his work on the tools has slowed considerably. However, Arlene, Grace and Peter have all begun work on different coding tasks for the tools and each appears to be making good progress. As these tasks involve primarily the user interfaces, they should result in a significantly cleaner and easier to use system. Unfortunately, the MCR board's recent decision not to install several new tools in the tools library has left everyone involved a bit unhappy. Hopefully the situation can be corrected in the next month.

### 4. Work Planned for the Coming Month

On January 2 the new operation's schedule and pricing structure will be installed.

During the next month we expect to make significant progress on the various library tools tasks currently underway. The completion of these tasks will result in noticeable improvement, as the work now being done is on utility commands, one of the few remaining steps before final completion.

The HLSUA Multics Subcommittee will be meeting January

17 in Detroit. As the agenda currently calls for a presentation by Honeywell on their Multics marketing strategy the meeting could be quite interesting.

With a little luck Roger will make it back from vacation.











TASK AREA Programming Support

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Look into compare_source_statement as replacement for cpa				Compare p11 source statements ignoring differences in comments and formatting
Design and implement an online system for registering modules being worked on, etc.				Proposal submitted to Gintell. Hope he has man-power
Look into the possibility of maintaining a module change history log.				May be part of sign out log project
Look into the possibility of making the source libraries generally accessible to users				
Create a system for processing backup error files to allow notification to users of errors encountered	Ackerman-Lewis	5/1/74	6/15/74	Being audited (submitted)
Fix test-tape to work with MTS 500's, ioi, etc.	Ackerman-Lewis	5/1/74	12/31/74	
		9/15/74	11/30/74	Submitted
		9/15/74	12/31/74	
Fix bug in star_ (bug # 208)	Ackerman-Lewis	11/15/74	12/31/74	Submitted
		11/15/74	12/31/74	

PROJECT Library Maintenance Tools Project AKA Installation tool enhancements

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
MIS: write Honeywell PLM - Library Maintenance Manual	Kelley				continuing
update_seg: modify documentation task to document unbundled library (MCR 735)	Kelley				Installed
update_seg: modify to set the default max length of segments to their current length; add option to set length if different from current length. (MCR 807)	Kelley	10/29/74	11/18/74		submitted
update_seg: fix bug in documentation program (MCR 819)	Kelley	10/21/74	10/25/74		submitted
cleanjpt: modify to use the library descriptor	Kelley	11/04/74	11/18/74		coding 1/2 done

PROJECT Library Maintenance Tools Project AREA Library descriptor tools

TASK DESCRIPTION	PERSONNEL	SIABI	FINISH	M-W	CHANGES-STATUS
lex_string: code a lexical analyzer to parse a character string into tokens which are processed by the compilers below	Dixon	12/15/73	01/10/74	2.5	Done
reduction_compiler (rdc): code the reduction compiler (used to code the library_descriptor_compiler)	Dixon	12/15/73	02/11/74	2.0	Done
library_descriptor_compiler (ldc): code the library descriptor data	Dixon	12/15/73	01/10/74	2.0	Done
base_compiler	Dixon	12/15/73	07/12/74	3.0	Done
multics_libraries_.ld: code the library descriptor for Multics	Dixon	02/28/74	03/01/74	2	Done
System_Libraries	Dixon	03/05/74	03/18/74		Done
multics_library_search_: recode to use multics_libraries_.ld generated by library_descriptor_compiler	Dixon	01/10/74	01/15/74	2.5	Done
library_Info (li): code, document command which replaces msl_info (HIGH)	Dixon	10/05/73	10/30/73	1.5	Add options to command
library_map (lm): code, document command which replaces msl_global_format (HIGH)	Dixon	10/05/73	01/30/75	3	Done
library_print (lpr): code, document command which prints groups_of_library_segments (HIGH)	Dixon	05/25/73	06/25/73	3	Done
li/lm: get and output ACLs, initial ACLs, extra status (MEDIUM)	Dixon	06/30/73	09/30/74		Done
li/lm/lpr: add sorting options to commands (LOW)	Dixon	05/10/73	04/01/73	1	Done
document the above procedures and subroutines	Dixon	10/02/73	10/04/74	2	Done
	Dixon	12/15/73	12/30/73	1.5	Done
	Dixon		01/30/75		Done
	Dixon	01/01/74	01/15/74	2.5	Done
	Dixon		01/30/75		Done
	Dixon	03/01/74	05/30/74	3	HTB being written
	Dixon	03/01/74	02/30/75	5	Done

PROJECT Library Maintenance Tools Project AREA \_\_\_\_\_ Library descriptor tools \_\_\_\_\_

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
lm/lpr: gather and output statistics on Library segments (LOW)	Dixon			1.5	
library_descriptor (lds): code, document command which lists directories searched by li/lm/lpr for a given library (LOW)	Ackerman-- Lewis	11/04/74 11/04/74	12/20/74 01/15/75	1 2	Coding Underway
library_fetch (lf): rewrite gis to use library descriptor	Scherer	10/21/74 10/21/74	12/30/74 01/30/75	2 2.5	Coding Underway
library_cleanup (lcln): clean up the code; use library descriptor	Kelley	11/04/74 11/04/74	12/30/74 01/15/75	1.5	Coding Underway
library_object_cref (loc): rewrite cross_reference to use library descriptor				2.5	
library_include_cref (llic): 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	