

**PUBLICATIONS
UPDATE**

Operating System/3 (OS/3)

Verify System Build (VSB)

**User Guide/Programmer
Reference**

UP-8278 Rev. 2-B

This Library Memo announces the release and availability of Updating Package B to "SPERRY UNIVAC Operating System/3 (OS/3) Verify System Build (VSB) User Guide/Programmer Reference", UP-8278 Rev. 2.

This update documents the following OS/3 Verify System Build features for the 7.1 release:

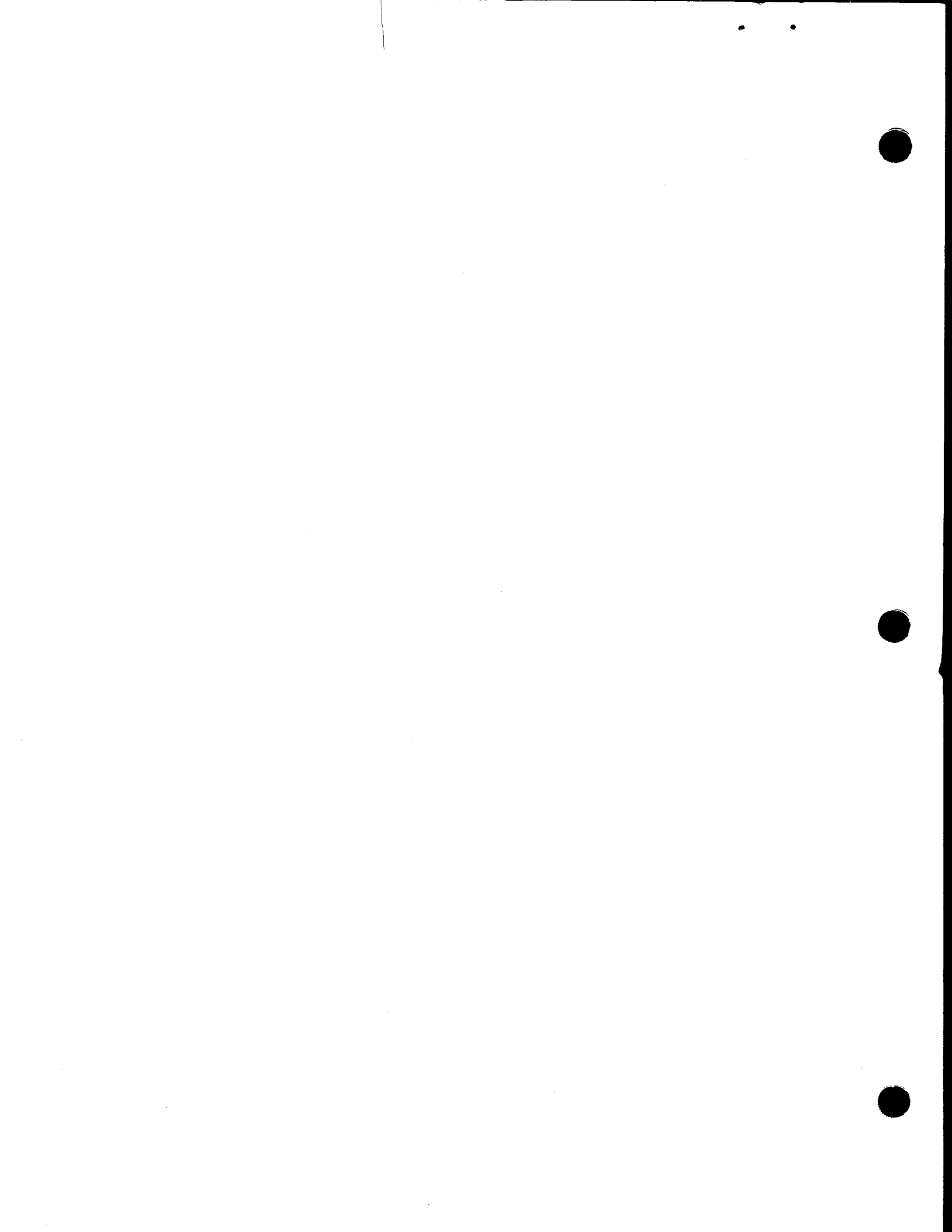
- Additional entries to the VSB job summary table
- Typical run sample for VSB001
- DMSEXEC changed to DMSVSBX

Also, section 2.4.1 showing the TE symbiont output listing has been removed from this manual.

All other changes are corrections or expanded descriptions applicable to features present in the Verify System Build manual prior to the 7.1 release.

Copies of Updating Package B are now available for requisitioning. Either the updating package only or the complete manual with the updating package may be requisitioned by your local Sperry Univac representative. To receive only the updating package, order UP-8278 Rev. 2-B. To receive the complete manual, order UP-8278 Rev. 2.

LIBRARY MEMO ONLY	LIBRARY MEMO AND ATTACHMENTS	THIS SHEET IS
Mailing Lists BZ, CZ and MZ	Mailing Lists 18, 18U, 19, 19U, 20, 20U, 21, 21U, 75, 75U, 76, and 76U (Package B to UP-8278 Rev. 2, 23 pages plus Memo)	Library Memo for UP-8278 Rev. 2-B RELEASE DATE: September, 1981



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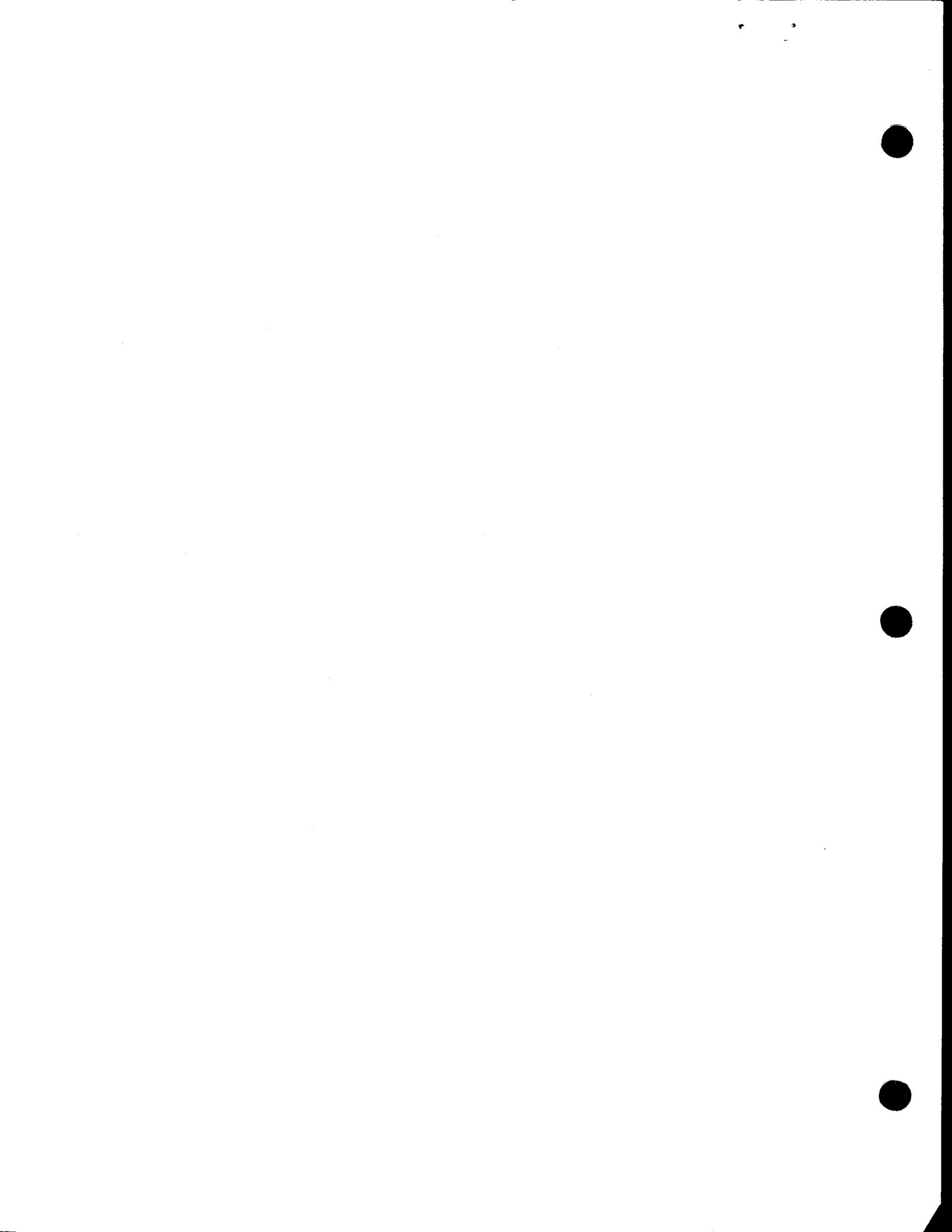
ISSUE: Update B – UP-8278 Rev. 2

RELEASE LEVEL: 7.1 Forward

Part/Section	Page Number	Update Level	Part/Section	Page Number	Update Level	Part/Section	Page Number	Update Level
Cover		Orig.	20	1 thru 4	Orig.			
Title Page		Orig.	21	1 thru 4	Orig.			
PSS	1	B	22	1 thru 3	Orig.			
Preface	1	Orig.	23	1 thru 11	Orig.			
Contents	1	Orig.	24	1 thru 9	Orig.			
	2	B	25	1 thru 10	Orig.			
	3 thru 9	Orig.	26	1 thru 9	Orig.			
	10	B	27	1 thru 4	Orig.			
1	11, 12	Orig.	28	1 thru 8	Orig.			
	1	Orig.	29	1 thru 10	Orig.			
2	2 thru 4	B	30	1 thru 9	Orig.			
	5 thru 43	Orig.	31	1	Orig.			
3	1, 2	Orig.	32	1 thru 18	Orig.			
	3, 4	B	33	1, 2	A			
4	5 thru 37	Orig.	34	3 thru 5	B			
	38 thru 43	B	35	1 thru 5	Orig.			
5	1 thru 6	Orig.	Appendix A	1, 2	Orig.			
6	1 thru 17	Orig.	Appendix B	1, 2	Orig.			
7	1 thru 13	Orig.	User Comment Sheet					
8	1 thru 13	Orig.						
9	1 thru 14	Orig.						
10	1 thru 3	Orig.						
11	1 thru 3	Orig.						
12	1 thru 13	Orig.						
13	1 thru 7	Orig.						
14	1 thru 5	Orig.						
15	1 thru 5	Orig.						
16	1 thru 7	Orig.						
17	1 thru 6	Orig.						
18	1 thru 7	Orig.						
19	1 thru 7	Orig.						

*New pages

All the technical changes are denoted by an arrow (→) in the margin. A downward pointing arrow (↓) next to a line indicates that technical changes begin at this line and continue until an upward pointing arrow (↑) is found. A horizontal arrow (→) pointing to a line indicates a technical change in only that line. A horizontal arrow located between two consecutive lines indicates technical changes in both lines or deletions.



Contents

PAGE STATUS SUMMARY

PREFACE

CONTENTS

1. INTRODUCTION

1.1.	GENERAL	1-1	
1.2.	VSB JOB SUMMARY	1-2	
1.3.	SYSGEN CONSIDERATIONS	1-3	
1.4.	KEYWORD PARAMETERS	1-6	
1.5.	INPUT VIA DATA CARDS	1-8	
1.6.	INPUT VIA 8413 DISKETTE	1-9	
1.6.1.	Operating Instructions	1-9	←
1.7.	VSB I/O SUMMARY	1-11	
1.8.	TOTAL SYSTEM FLOW	1-18	
1.9.	VSB TEST JOB CONTROL STREAMS	1-43	←

2. VSB001 (TEST SYMBIONT-TE)

2.1.	GENERAL	2-1	
2.2.	JCL REQUIREMENTS	2-2	

2.3.	OPERATING INSTRUCTIONS	2-2
2.3.1.	Parameter Conventions	2-2
2.3.2.	Initiation as a Symbiont	2-2
2.3.3.	Manual Mode Type-ins	2-3
2.3.3.1.	Test-ID Defintions	2-3
2.3.3.2.	Output Messages	2-4
→ 2.4.	TYPICAL RUN	2-39
2.5.	ERROR HANDLING	2-43
3.	VSB002 (CREATE VSBRES)	
3.1.	GENERAL	3-1
3.2.	JCL REQUIREMENTS	3-3
3.3.	OPERATING INSTRUCTIONS	3-3
3.4.	ERROR HANDLING	3-5
3.4.1.	Program Output Listing (Disk 8416) - VSB002	3-5
4.	VSB003 (CREATE SDIVSB)	
4.1.	GENERAL	4-1
4.2.	JCL REQUIREMENTS	4-3
4.3.	OPERATING INSTRUCTIONS	4-3
4.4.	ERROR HANDLING	4-4
4.4.1.	Program Output Listing (VSB003)	4-5
5.	VSB004 (ASSEMBLER TEST-SAM OUTPUT)	
5.1.	GENERAL	5-1
5.2.	JCL REQUIREMENTS	5-3
5.3.	OPERATING INSTRUCTIONS	5-3
5.4.	ERROR HANDLING	5-6
5.4.1.	Assembler Output Listing (VSB004)	5-6
5.4.2.	Linker Output Listing (VSB004)	5-10
5.4.3.	VSBAL1 Program Output Listing (VSB004)	5-13
6.	VSB005 (ASSEMBLER TEST-DAM OUTPUT)	
6.1.	GENERAL	6-1
6.2.	JCL REQUIREMENTS	6-3

31. MESSAGE SWITCHING

31.1.	GENERAL	31-1
31.2.	JOB REQUIREMENTS/OPERATING INSTRUCTIONS	31-1

32. VSB030 (IMS 90 TEST)

32.1.	GENERAL	32-1
32.2.	JOB DESCRIPTIONS	32-2
32.3.	IMS/VSB OPERATING INSTRUCTIONS	32-7
32.4.	IMS/VSB ERROR HANDLING	32-11
32.4.1.	Sample IMS/VSB JCL Listing	32-11
32.4.2.	Sample Terminal Commands	32-17

33. VSB031 (DMS 90 TEST)

33.1.	GENERAL	33-1
33.2.	JOB REQUIREMENTS	33-2
33.3.	JOB DESCRIPTIONS	33-3
33.3.1.	DMSBUILD Job Stream	33-3
33.3.2.	DMSCOMP Job Stream	33-4
33.3.3.	DMSEXEC Job Stream	33-4
33.4.	EXECUTION TIMING	33-5
33.5.	OPERATING INSTRUCTIONS	33-5
33.6.	JOB STREAM LISTING	33-5

34. VSB032 (UTS 400 TEST)

34.1.	GENERAL	34-1
34.2.	JOB DESCRIPTIONS	34-2
34.3.	OPERATING INSTRUCTIONS	34-2
34.4.	SAMPLE TERMINAL COMMANDS	34-4

35. VSB033 (1974 ANSI COBOL TEST)

35.1.	GENERAL	35-1
35.2.	JCL REQUIREMENTS	35-3
35.3.	OPERATING INSTRUCTIONS	35-3



35.4.	ERROR HANDLING	35-4
35.4.1.	COBOL Output Listing (VSB033)	35-4
35.4.2.	Linker Output Listing (VSB033)	35-6
35.4.3.	Program Output Listing (VSB033)	35-7

APPENDIXES

A. COMMAND FORMAT CONVENTIONS

B. SPERRY UNIVAC OS/3 REFERENCE MANUALS

USER COMMENT SHEET

FIGURES

1-1.	Operating Instructions for Tests Using Input via 8413 Diskette	1-10
1-2.	VSB Total System Flow	1-18
2-1.	VSB001 Job Functional Flow	2-1
3-1.	VSB002 Job Functional Flow	3-2
3-2.	VSB002 Operating Instructions (Disk 8416)	3-4
4-1.	VSB003 Job Functional Flow	4-2
4-2.	VSB003 Operating Instructions (Disk 8416)	4-4
5-1.	VSB004 Job Functional Flow	5-2
5-2.	VSB004 Operating Instructions (Disk 8416)	5-4
5-3.	VSB004 Operating Instructions, Diskette Option - Nonspooling (Disk 8418)	5-5
5-4.	VSB004 Operating Instructions, Diskette Option - Spooling (Disk 8418)	5-5
6-1.	VSB005 Job Functional Flow	6-2
6-2.	VSB005 Operating Instructions (Disk 8416)	6-4
7-1.	VSB006 Job Functional Flow	7-2
7-2.	VSB006 Operating Instructions	7-3
8-1.	VSB007 Job Functional Flow	8-2
8-2.	VSB007 Operating Instructions	8-4
8-3.	VSB007 Operating Instructions, Diskette Option - Nonspooling (Disk 8418)	8-5
8-4.	VSB007 Operating Instructions, Diskette Option - Spooling (Disk 8418)	8-5
9-1.	VSB008 Job Functional Flow	9-2
9-2.	VSB008 Operating Instructions	9-4
9-3.	VSB008 Operating Instructions, Diskette Option - Nonspooling (Disk 8418)	9-5
9-4.	VSB008 Operating Instructions, Diskette Option - Spooling (Disk 8418)	9-5
10-1.	VSB009 Job Functional Flow	10-2
10-2.	VSB009 Operating Instructions	10-4
11-1.	VSB010 Job Functional Flow	11-1
11-2.	VSB010 Operating Instructions	11-2

1. Introduction

1.1. GENERAL

The Verify System Build (VSB) is a series of tests, distributed on the OS/3 distribution pack. Execution of these tests will verify that your installation's hardware and operating system will completely support a basic operating environment. In addition, VSB is an operable example of diverse SPERRY UNIVAC Operating System/3 (OS/3) jobs, which you can use as a guide in developing your application-oriented job streams and data files in an OS/3 operation. Appendix B lists the documents that provide additional details of the system software components.

The VSB tests are to be executed during the initial installation of the hardware system after the customer engineer has successfully completed all hardware tests. Successful execution of the applicable VSBs will add further confidence in the system by running user programs under control of SPERRY UNIVAC Operating System/3 (OS/3).

The VSB tests are distributed on the official OS/3 release disk pack. The VSB tests have been prefiled as individual job streams in the system file \$Y\$JCS. You can obtain a copy of the JCL required for each test from the system file \$Y\$JCS.

The individual requirements for each job are specified in the job description related to the subject job. You should allow approximately 5 hours to complete this VSB package with SPERRY UNIVAC 8414 disks, about 4 hours using the SPERRY UNIVAC 8416 disks, and about 3 1/2 hours using SPERRY UNIVAC 8418-2 disks.

VSB can be multiprogrammed in cases where there are sufficient resources to run all the jobs desired, such as main storage, printers, and disks. Jobs that are interdependent must be run in sequence. Jobs that may be run independently of others may be multiprogrammed.

All of the tests will run using less than 65K bytes of main storage with the SY\$MIN supervisor.

VSB014 requires a magnetic tape to create a 9200/9300 8410 pack image file for use by VSB015. Similarly, VSB017 requires a magnetic tape to create an IBM 360/20 2311 pack image file for use by VSB018. Both tapes may be obtained from Software Order Services, Blue Bell, Pa. Two 9-track magnetic tapes must be sent to Software Order Services designating either 800 NRZI or 1600 PE recording.

1.2. VSB JOB SUMMARY

Table 1—1 lists the VSB jobs in order of proper execution and presents a brief explanation of the purpose of each job and the approximate execution time for each.

Table 1—1. VSB Job Summary (Part 1 of 2)

Job No.	Job Name	Purpose	Approximate Execution Time (Minutes)
1	VSB001	Verifies/tests supervisor functions	15
2	VSB002	Disk prep-dump restore (disk/tape or disk/disk)	40
3	VSB003	Display libraries, disk prep, disk print (allocation of all files)	18
4	VSB004	Assemble, link, and execute, SAM files creation and retrieval	12
5	VSB005	Assemble, Link, and execute, DAM files creation and retrieval	12
6	VSB006	FUNDEF assemble, FORTRAN compile, link and execute, DAM file creation	10
7	VSB007	RPG compile, link, and execute, SAM or IRAM-NO-INDEX file creation	4
8	VSB008	RPG compile, link, and execute, ISAM or IRAM-INDEX file creation	4
9	VSB009	RPG compile, link, and execute, SAM, ISAM or IRAM-NO-INDEX, IRAM-INDEX file comparison	4
10	VSB010	Independent sort of BALSAM file	2
11	VSB011	Independent sort of RPGSAM file	2
12	VSB012	Data utilities - disk compare, card to card and card to disk	5
13	VSB013	Generation 9200/9300 NCOS emulator	34
14	VSB014	9200/9300 NCOS - restore from tape to disk in 9200/9300 format	12
15	VSB015	Emulator - 9200/9300 NCOS	3
16	VSB016	Generation 360/20 DPS Emulator	40
17	VSB017	360/20 DPS - restore from tape to disk in 360/20 format	11
18	VSB018	Emulator - 360/20 DPS RPG compile, execution-ISAM file creation and IBM disk print utility	4
19	VSB019	Data utilities - disk to printer of RPG-IRAM-NO-INDEX file	2
20	VSB020	Data utilities - disk to printer of RPG-IRAM-INDEX file	2
21	VSB021	Independent sort of RPG-IRAM-NO-INDEX file	2

Table 1—1. VSB Job Summary (Part 2 of 2)

Job No.	Job Name	Purpose	Approximate Execution Time (Minutes)
22	VSB022	COBOL compile, link, and execute, SAM file creation	4
23	VSB023	COBOL compile, link, and execute, DAM file creation	4
24	VSB024	COBOL compile, link, and execute, ISAM file creation	4
25	VSB025	COBOL compile, link, and execute, sort option for SAM file	4
26	VSB026	SYSDUMP	5
27	VSB027	FORTRAN EXT compilation, link, and execution	6
28	VSB028	COBOL compile, link, and execute floating-point program	6
29	VSB029	Interactive and batch terminals run with ICAM (DDI interface)	Varies with terminal type
30	----	Message switching with AUTODIS	Varies
31	VSB030	Preparation and running of IMS	2 hours (including ICAM generation)
32	VSB031	DMS data base built, run against run-unit	45
33	VSB032	UTS 400 interactive capabilities using down-line load	1 hour 15 min. (not including ICAM generation)
34	VSB033	1974 ANSI COBOL compile, link, and execute floating-point program	3

1.3. SYSGEN CONSIDERATIONS

Note that the following modules are contained on the release disk only and will not be automatically copied to the output disk by SYSGEN. A list of all such modules is as follows:

<u>Module</u>	<u>Location</u>	<u>Description</u>
VSB002	\$Y\$JCS	VSB002 test job stream
VSB003	\$Y\$JCS	VSB003 test job stream
VSB004	\$Y\$JCS	VSB004 test job stream
VSB005	\$Y\$JCS	VSB005 test job stream
VSB006	\$Y\$JCS	VSB006 test job stream
VSB007	\$Y\$JCS	VSB007 test job stream

<u>Module</u>	<u>Location</u>	<u>Description</u>
VSB008	\$Y\$JCS	VSB008 test job stream
VSB009	\$Y\$JCS	VSB009 test job stream
VSB010	\$Y\$JCS	VSB010 test job stream
VSB011	\$Y\$JCS	VSB011 test job stream
VSB012	\$Y\$JCS	VSB012 test job stream
VSB013	\$Y\$JCS	VSB013 test job stream
VSB014	\$Y\$JCS	VSB014 test job stream
VSB015	\$Y\$JCS	VSB015 test job stream
VSB016	\$Y\$JCS	VSB016 test job stream
VSB017	\$Y\$JCS	VSB017 test job stream
VSB018	\$Y\$JCS	VSB018 test job stream
VSB019	\$Y\$JCS	VSB019 test job stream
VSB020	\$Y\$JCS	VSB020 test job stream
VSB021	\$Y\$JCS	VSB021 test job stream
VSB022	\$Y\$JCS	VSB022 test job stream
VSB023	\$Y\$JCS	VSB023 test job stream
VSB024	\$Y\$JCS	VSB024 test job stream
VSB025	\$Y\$JCS	VSB025 test job stream
VSB026	\$Y\$JCS	VSB026 test job stream
VSB027	\$Y\$JCS	VSB027 test job stream
VSB028	\$Y\$JCS	VSB028 test job stream
VSBDTA	\$Y\$SRC	Card input data files
VSBDTAP	\$Y\$JCS	Job stream to punch VSBDTA
VSBDPS	\$Y\$LOD	360/20 DPS emulator load module for test VSB018
VSBNCS	\$Y\$LOD	9200/9300 NCOS emulator load module for test VSB015

DUMP

Indicates that a dump should be given upon completion.

MANUAL

Indicates that the manual mode is desired. This allows the operator to skip certain tests or execute only certain tests.

PRINT

Indicates output goes to a printer, if available; if omitted, output goes to the operators console.

Example:

TE ALL, PRINT

2.3.3. Manual Mode Type-ins

Manual mode operation permits the user to specify the specific tests that are to be either executed or skipped. In response to the message "ARE TESTS TO BE SKIPPED OR EXECUTED", reply one of the following:

EXECUTE

SKIP

In response to the message "ENTER TEST-ID(S) TO BE SKIPPED/EXECUTED", enter as many appropriate test-IDs as desired, separated by spaces or commas. If more than one line is necessary, enter an asterisk (*) as a test-ID. The valid test-IDs are:

OPR	PRINT	OCIC	PCIC	TIME	XCPW	ELOD
ABIC	LOAD	XCPR	SPAC	RUNL	MCON	ELOG
INFO	LOCK	LOG	TASK	IOXR	SWLS	DL0D
SPOL	ACCT	ROLL	BLOK	SHAR	MBIO	

2.3.3.1. Test-ID Definitions

OPR - Tests OPR macro

ABIC - Tests ABTERM island code macro

INFO - Tests GETINF macro

PRNT - Tests printer

LOAD - Tests LOAD macro

LOCK - Tests LOCK macro

OCIC - Tests operator communication island code macro

XCPR - Tests EXCP

LOG - Tests LOG macro

PCIC - Tests program check island code

SPAC - Tests space management

TASK - Tests tasking

TIME - Tests timer

RUNL - Tests runlib

IOXR - I/O tests

XCPW - Tests EXCP write to disk

MCON - Tests memory consolidation

SWLS - Tests switch list scan of microcode

SPOL - Tests spooler

ROLL - Rollin/rollout test

ACCT - Job accounting test

BLOK - Tape block numbering

SHAR - Shared code

MBIO - Multiblocked I/O

→ DL0D - Dynamic loading

ELOG - Error logging

2.3.3.2. Output Messages

This section lists all messages that might be issued, along with their interpretations and, if applicable, the required operator action.

Each message has a prefix that indicates which module within the program issued the message. All messages from a given module are grouped together under their prefix.

The messages are further grouped under Response, Error and Information type messages.

The error codes are listed in the system messages programmer/operator reference, UP-8076 (current version).

PREFIX: CTSUP950 TEST-ID: IOXR

Response Messages

ENTER DEVICE TYPE - READ, PR, PUN, DSKET, DISK, DKER, TAPE - NULL TO STOP ←

Reply is one of reader, printer, punch, disk or tape depending on desired devices to be tested. A null reply will end test IOXR.

CHOOSE n ADDRESS (ES) FROM ABOVE, NULL TO SKIP

Where n is either 1 or 2. The reply is the 4-character device address(es) of the device(s) to be tested. Tape test is the only one requiring two devices. A null reply will skip test and ask for additional devices.

DEVICE ON xxxx (VSN=vvvvvv), MAY BE DESTROYED CONT (Y or N)

Where xxxx is the device and vvvvvv is the VSB of the disk to be tested.

Reply Y to continue with disk test, and N to stop disk test.

Error Messages

ERROR IN REPLY

An incorrect response to a message was encountered, the message prompting the reply is reissued.

UNABLE TO ALLOCATE PUB FOR xxxx

Where xxxx is the device address. The PUB for device xxxx is either SYSRES or SYSRUN or already allocated to another job. Enter message will be repeated.

2 TAPES REQUIRED TO RUN TEST

Only one tape PUB was found in system or only one tape address was entered. Enter message will be repeated.

Information Messages

THE FOLLOWING DEVICES ARE AVAILABLE FOR TESTING

ADDR xxxxxxxx TYPE

Where xxxxxxxx is the reply to the message requesting the type of device to be tested. Issued before a list of available devices and the type of device. ←

OPR ERROR

The OPR SVC returned an error condition.

PREFIX: CTSUP9VT MODULE: VTOC I/O

Response Messages

None

Error Messages

None

Information Messages

ERROR - STATUS AND SENSE BYTES xxxxxxxxxxxxxxxxx

An I/O problem was detected on reading a disk label (either a VTOC label or VOL1).



2.4. TYPICAL RUN

The following example shows a typical VSB001 run. The underlined items are what you enter on the console.

TE A

01 CTSUP001 - STARTING TEST MCON
02 CTSUP917 - DO NOT START OTHER PROGRAMS
03 JC01 JOB TSTJOB EXECUTING JOB STEP TSTJOB00 #001
04 JC02 JOB TSTJOB TERMINATED NORMALLY
05 JC01 JOB JOB01601 EXECUTING JOB STEP MCON0000 #001
06 MCONUSER-STARTED
07 JC01 JOB JOB01602 EXECUTING JOB STEP MCON0000 #001
08 MCONUSER-STARTED
09 JC01 JOB JOB01603 EXECUTING JOB STEP MCON0000 #001
0A MCONUSER-STARTED
0B JC02 JOB JOB01601 TERMINATED NORMALLY
0C JC01 JOB JOB03204 EXECUTING JOB STEP MCON0000 #001
0D MCONUSER-STARTED
0E JC02 JOB JOB01602 TERMINATED NORMALLY
0F JC02 JOB JOB01603 TERMINATED NORMALLY
01 J002 JOB JOB03204 TERMINATED NORMALLY
02 CTSUP917-MEMORY CONSOLIDATION WORKS
03 CTSUP001 - COMPLETED TEST MCON
04 CTSUP001 - STARTING TEST ROLL
05 CTSUP920 -NO ROLLOUT/ROLLIN IN THE SUPERVISOR
06 CTSUP920 -TEST SKIPPED FOR PRECEDING REASON(S)
07 CTSUP001 - SKIPPED TEST ROLL
08 CTSUP001 - STARTING TEST ABIC
09 CTSUP001 - COMPLETED TEST ABIC
0A CTSUP001 - STARTING TEST LOAD
0B CTSUP001 - COMPLETED TEST LOAD
0C CTSUP001 - STARTING TEST INFO
0D CTSUP001 - COMPLETED TEST INFO
0E CTSUP001 - STARTING TEST LOG
0F CTSUP914-TEST LOG FILE
01?CTSUP914-PREVIOUS MSG = TEST LOG FILE ?ANS Y OR N
01 Y
02 CTSUP914-WTL MACRO WORKS
03 CTSUP914-TEST WTL D
04?CTSUP914-MSG ON CONSOLE = TEST WTL D ? ANS Y OR N
04 Y



05 CTSUP914-WTLD MACRO WORKS
06? CTSUP914-THIS MSG ON CONSOLE. ENTER Y
06 Y
07 CTSUP914-WTLD MACRO WORKS WITH REPLY
08 CTSUP001 - COMPLETED TEST LOG
09 CTSUP001 - STARTING TEST PRNT
0A? CTSUP902-DID A LINE OF Z PRINT ON THE PRINTER? Y OR N
0A Y
0B CTSUP001 - COMPLETED TEST PRNT
0C CTSUP001 - STARTING TEST XCPR
0D CTSUP001 - COMPLETED TEST XCPR
0E CTSUP001 - STARTING TEST SPAC
0F? CTSUP909 - VSN TO BE USED IS REL040 IS THIS OK (Y,N)
0F Y
01 CTSUP001 - COMPLETED TEST SPAC
02 CTSUP001 - STARTING TEST XCPW
03 CTSUP001 - COMPLETED TEST XCPW
04 CTSUP001 - STARTING TEST IOXR
05? ENTER DVC TYPE:READ,PR,PUN,DSKET,DISK,DKER,TAPE-NULL TO STOP
05 PR
06 CTSUP950-THE FOLLOWING DEVICES AVAILABLE FOR TESTING
07 ADDR PRINTER TYPE
08 0160 0776
09? CHOOSE 1 ADDRESS(ES) FROM ABOVE, NULL TO SKIP
09 0160
0A? ENTER DVC TYPE:READ,PR,PUN,DSKET,DISK,DKER,TAPE-NULL TO STOP
0A PUN
0B CTSUP950- THE FOLLOWING DEVICES AVAILABLE FOR TESTING
0C ADDR PUNCH TYPE
0D 0150 0604
0E? CHOOSE 1 ADDRESS(ES) FROM ABOVE, NULL TO SKIP
0E 0150
0F? ENTER DVC TYPE:READ,PR,PUN,DSKET,DISK,DKER,TAPE-NULL TO STOP
0F READ
01 CTSUP950- THE FOLLOWING DEVICES AVAILABLE FOR TESTING
02 ADDR READER TYPE
03 0110 0716
04? CHOOSE 1 ADDRESS(ES) FROM ABOVE, NULL TO SKIP
04 0110
05? CTSUP953 - IS DATA DECK AVAILABLE? (Y OR N)
05 Y





06?CTSUP953 - PLACE PUNCH TEST OUTPUT IN READER
06
07?ENTER DVC TYPE:READ,PR,PUN,DSKET,DISK,DKER,TAPE=NULL TO STOP
07 READ
08 CTSUP950- THE FOLLOWING DEVICES AVAILABLE FOR TESTING
09 ADDR READER TYPE
0A 0110 0716
0B?CHOOSE 1 ADDRESS(ES) FROM ABOVE, NULL TO SKIP
0B 0110
0C?CTSUP953 - IS DATA DECK AVAILABLE? (Y OR N)
0C Y
0D?CTSUP953 - PLACE PUNCH TEST OUTPUT IN READER
0D
0E?ENTER DVC TYPE:READ,PR,PUN,DSKET,DISK,DKER,TAPE=NULL TO STOP
0E DISK
0F CTSUP950 - THE FOLLOWING DEVICES AVAILABLE FOR TESTING
01 ADDR DISK TYPE
02 0303 8418H
03 0440 8414
04?CHOOSE 1 ADDRESS(ES) FROM ABOVE, NULL TO SKIP
04
05?ENTER DVC TYPE:READ,PR,PUN,DSKET,DISK,DKER,TAPE=NULL TO STOP
05
06 CTSUP001 - STARTING TEST TIME
07 CTSUP001 - COMPLETED TEST TIME
08 CTSUP001 - STARTING TEST OPR
09 CTSUP901 - INITIAL SIXTY BYTE MESSAGE60
0A?CTSUP901 - BASIC OPR - REPLY Y
0A Y
0B CTSUP001 - COMPLETED TEST OPR
0C CTSUP001 - STARTING TEST PCIC
0D CTSUP001 - COMPLETED TEST PCIC
0E CTSUP001 - STARTING TEST RUNL
0F CTSUP911 NO FORMAT6 IN THE DISK
01 CTSUP001 - COMPLETED TEST RUNL
02 CTSUP001 - STARTING TEST TASK
03 CTSUP001 - COMPLETED TEST
04 CTSUP001 - STARTING TEST LOCK
05 CTSUP001 - COMPLETED TEST LOCK
06 CTSUP001 - STARTING TEST SWLS
07 CTSUP918 - SWLS TEST COMPUTES FOR 45 SECS
08 CTSUP001 - COMPLETED TEST SWLS





09 CTSUP001 - STARTING TEST SEEK
0A? CTSUP916 - ENTER ALT SYSRUN DVC ADDR OR NULL TO SKIP TEST
0A
0B CTSUP001 - SKIPPED TEST SEEK
0C CTSUP001 - STARTING TEST OCIC
0D CTSUP903 - ENTER UNSOLICITED MESSAGE OF 01 LETTER A
00 TEA
0E CTSUP903 - TEST WORKED FOR 01
0F CTSUP001 - COMPLETED TEST OCIC
01 CTSUP001 - STARTING TEST SPOL
02 CTSUP921 - SPOOLING HAS NOT BEEN SYSGENED
03 CTSUP001 - SKIPPED TEST SPOL
04 CTSUP001 - STARTING TEST ACCT
05 CTSUP922 - SPOOLING HAS NOT BEEN SYSGENED
06 CTSUP001 - SKIPPED TEST ACCT
07 CTSUP001 - STARTING TEST BLOK
08? CTSUP923 - MOUNT WORK TAPE ON 0100
08
09 CTSUP001 - COMPLETED TEST BLOK
0A CTSUP001 - STARTING TEST SHAR
0B CTSUP001 - COMPLETED TEST SHAR
0C CTSUP001 - STARTING TEST MBIO
0D? CTSUP925 - ENTER DEVICE ADDR OR END
0D END
0E CTSUP001 - COMPLETED TEST MBIO
0F CTSUP001 - STARTING TEST DLOD
01 CTSUP927 - BASIC TEST STARTED
02 CTSUP927 - DLODC LOADED BY FETCH
03 CTSUP001 - COMPLETED TEST DLOD
04 CTSUP001 - STARTING TEST ELOG
05? CTSUP928 - MUST KEY-IN: SE EL,OF,CO
SE EL,OF,CO
0E
0F? CTSUP928 - MUST KEY-IN: SE EL,ON,MC
SE EL,OF,MC
0F
01 CTSUP001 - COMPLETED TEST ELOG
02 CTSUP001 - EXIT

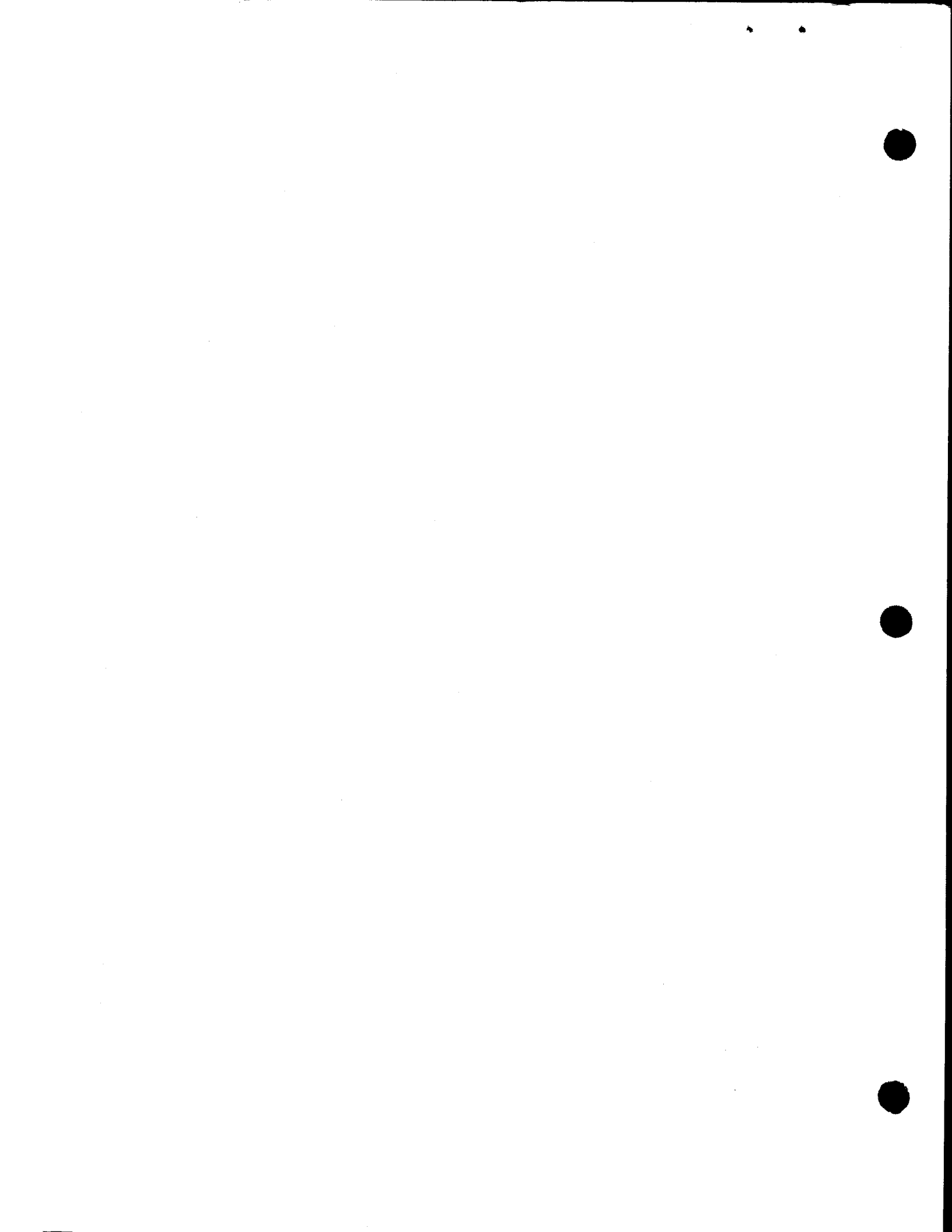


2.5. ERROR HANDLING

For the OS/3 system error handling, refer to the OS/3 system messages manual, UP-8076 (current version).

For more details on each OS/3 system software component, refer to the manuals indicated in Appendix B.

The supervisor test (TE) error messages are included with the operator instructions (2.3).



33.3. JOB DESCRIPTIONS

The DMS 90 VSB is divided into five job streams as follows:

1. DMSBUILD - Allocates the necessary files and executes the DDL.
2. DMSCOMP - Compiles the run-unit.
3. DMSVSBX - Executes the run-unit and the recovery utilities. ←
4. DMSSCR - Scratches the files allocated by DMSBUILD.
5. DMSLIST - Lists DMS/90 VSB jobs.

Each job stream is complete within itself and may be restarted or rerun without going back to the previous job stream. The job steps for the DMSBUILD, DMSCOMP, and DMSVSBX job streams are described in the paragraphs that follow. ←

33.3.1. DMSBUILD Job Stream

The DMSBUILD job stream includes the following steps:

1. SCR - The data dictionary file is scratched and reallocated. Page size is 2048 bytes, and 35 pages are allocated.
2. SCR - The database file is scratched and reallocated. Page size is 2048 bytes, and 40 pages are allocated.
3. DMCLP - Reads the source module and compiles DMCL for the data dictionary in primitive mode. The output from DMCLP is assembled and link-edited.
4. DBINT - Initializes the data dictionary.
5. DBMS - This job stream is activated. Execution of the DMSBUILD job stream is halted and must be reactivated by the operator when the message DBMS INITIALIZED appears on the console.
6. SCHMAP - Reads the source module from the job stream and compiles the schema.
7. SUBSP - Reads the global subschema from the job stream and compiles the subschema. Output is assembled and link-edited.
8. DMCLP - Reads the source module and compiles DMCL for user database. Its output is assembled and link-edited.
9. Console - A message appears on the console instructing the operator to shut down DBMS.

33.3.2. DMSCOMP Job Stream

The DMSCOMP job stream includes the following:

1. DBMS job stream is activated. Execution of DMSCOMP job stream is halted and must be reactivated by the operator when the message DBMS INITIALIZED appears on the console.
2. DMLP reads the run-unit source from the job stream and outputs it to the temporary library.
3. COBOL calls from and outputs to the temporary library. Maps are suppressed.
4. LNKEDT automatically includes the DBMS modules from the system object library and outputs to the temporary library. The module XU7PAG is specifically included only to test its presence in the system library. This module is not needed in the VSB, but is needed by a user who uses his own XR7CALC module in place of the standard one supplied with DMS 90.

↓

33.3.3. DMSVSBX Job Stream

↑

The DMSVSBX job stream includes the following:

1. DBINT initializes the database prior to executing the run-unit. This allows for rerunning if desired.
2. VSBRUN - A scratch tape is prepped as a journal tape and the test run-unit is executed. Every DMS 90 verb is executed and pass/fail information is printed and displayed on the console. A message is displayed on the console to shut down DBMS. A new job stream is activated to exercise the utilities.
3. DBDUM is executed but, with no TFILE assigned, it produces only a report of the state of the database.
4. DBPAG prints the user page (1) in both decimal and hexadecimal. These two steps, DBDUM and DBPAG, establish a reference for the restoration steps described below.
5. DBREC performs a backward restore of the database from the journal tape.
6. DBPAG prints page 1 (hexadecimal). Because the previous execution of DBREC negated the effect of the run-unit execution, page 1 should be empty.
7. DBREC performs a forward restore of the database.
8. DBPAG prints page 1 (decimal). The page should be restored to the (reference) condition following the run-unit execution.
9. The scratch tape is redefined as a dump tape.
10. DBDUM performs a TOTAL dump of the database.
11. DBINT initializes page 1.

12. DBRES performs a TOTAL restore of the database.
13. DBPAG prints page 1 (decimal). The page should be restored to the (reference) condition following the run-unit execution.

33.4. EXECUTION TIMING

The VSB segments require approximately:

- DMSBUILD - 10 minutes
- DMSCOMP - 10 minutes
- DMSVSBX - 12 minutes

33.5. OPERATING INSTRUCTIONS

To run the DMS 90 tests, it is necessary only to mount the system disk. All work is performed on this one pack. (Note that because this layout is convenient but inefficient, the execution times of the DMS 90 processors, especially DMLP, are much longer than would be the case in a well-planned production installation.) Operator intervention is required to reactivate the execution of DMSBUILD and DMSVSBX job streams upon initialization of DBMS. Operator intervention is also required to shut down DBMS to mount a scratch tape.

Enter the following commands from the system console:

1. RUN DMSBUILD

(Wait for completion.)

2. RUN DMSCOMP

(Wait for completion.)

3. RUN DMSVSBX

(Mount the scratch tape as requested by the system.)

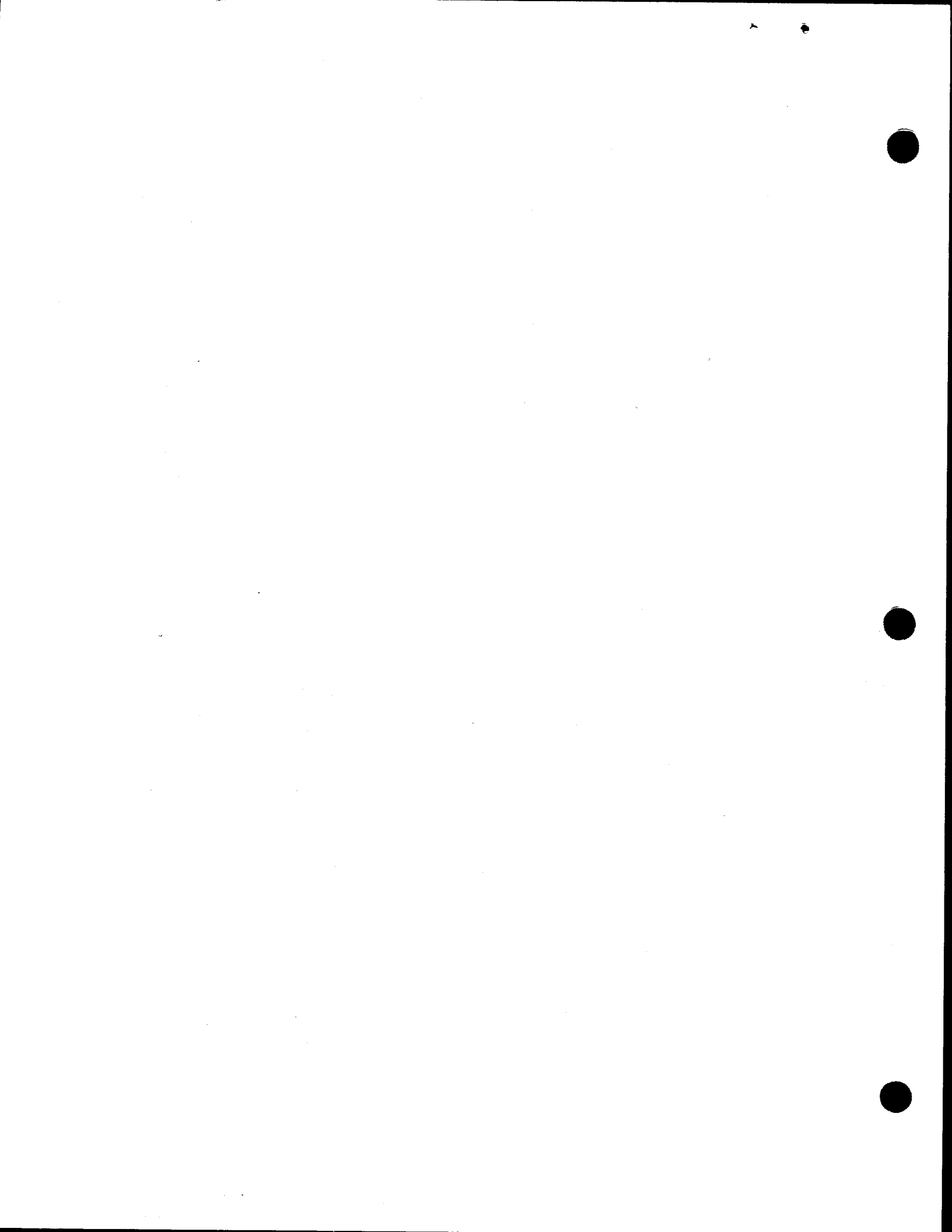
4. Each job is complete within itself and may be rerun without going back to the previous one. When execution of all three jobs is completed, enter the following to scratch the temporary files:

RUN DMSSCR

33.6. JOB STREAM LISTING

To list the DMS/90 VSB jobs, both JCL and DMS 90 source, enter the following command from the system console:

RUN DMSLIST



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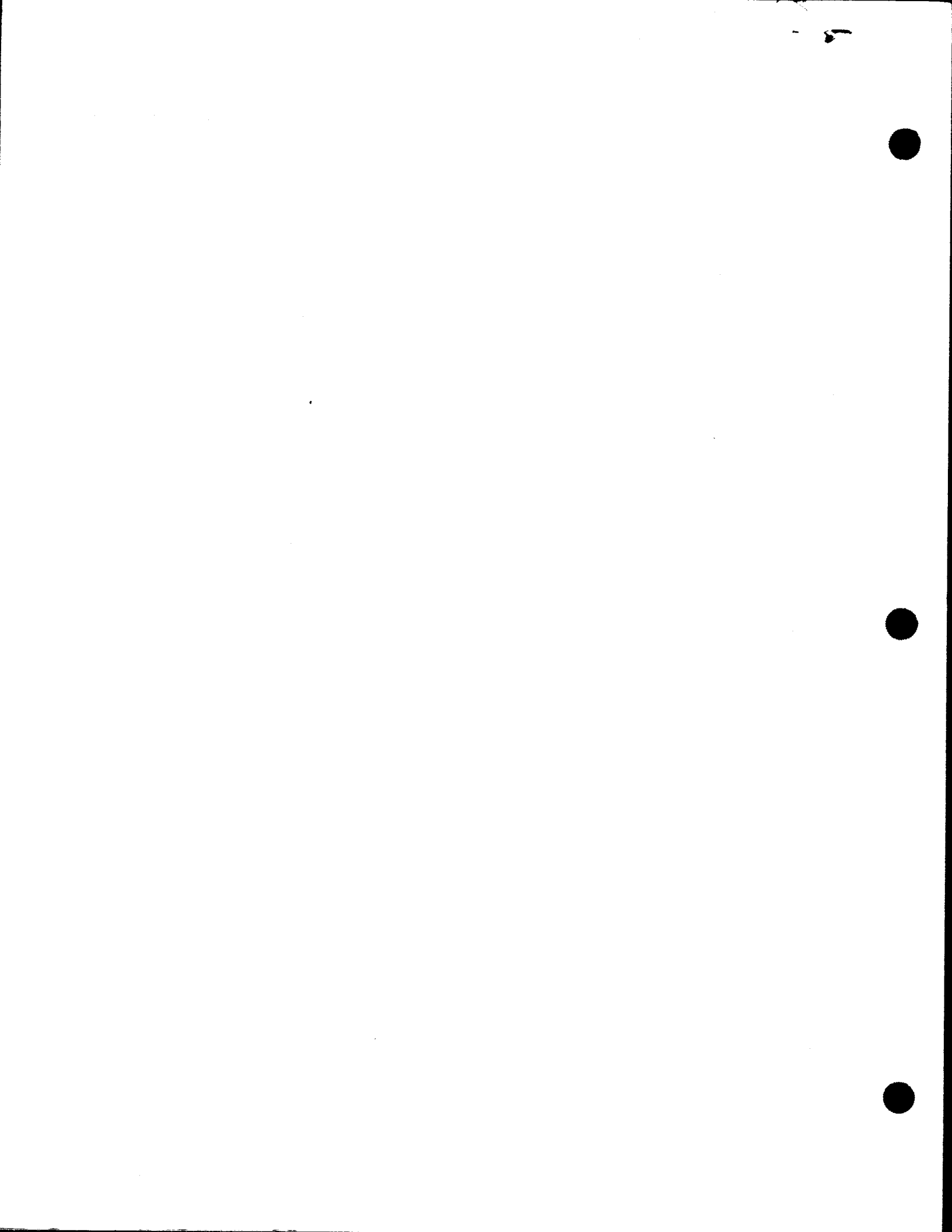
This Library Memo announces the release and availability of Updating Package A to "SPERRY UNIVAC Operating System/3 (OS/3) Verify System Build (VSB) User Guide/Programmer Reference", UP-8278 Rev. 2.

This update documents changes to the existing VSB test 031 for DMS 90.

Copies of Updating Package A are now available for requisitioning. Either the updating package alone, or the complete manual with the updating package may be requisitioned by your local Sperry Univac Representative.

To receive the updating package alone, order UP-8278 Rev. 2-A. To receive the complete manual, order UP-8278 Rev. 2.

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PAGE STATUS SUMMARY

ISSUE: Update A – UP-8278 Rev. 2

Part/Section	Page Number	Update Level	Part/Section	Page Number	Update Level	Part/Section	Page Number	Update Level
Cover		Orig.	24	1 thru 9	Orig.			
Title Page		Orig.	25	1 thru 10	Orig.			
PSS	1	A	26	1 thru 9	Orig.			
Preface	1	Orig.	27	1 thru 4	Orig.			
Contents	1 thru 12	Orig.	28	1 thru 8	Orig.			
1	1 thru 43	Orig.	29	1 thru 10	Orig.			
2	1 thru 49	Orig.	30	1 thru 9	Orig.			
3	1 thru 6	Orig.	31	1	Orig.			
4	1 thru 17	Orig.	32	1 thru 18	Orig.			
5	1 thru 13	Orig.	33	1 thru 5	A			
6	1 thru 13	Orig.	34	1 thru 7	Orig.			
7	1 thru 14	Orig.	35	1 thru 7	Orig.			
8	1 thru 10	Orig.	Appendix A	1, 2	Orig.			
9	1 thru 10	Orig.	Appendix B	1, 2	Orig.			
10	1 thru 14	Orig.	User Comment Sheet					
11	1 thru 3	Orig.						
12	1 thru 3	Orig.						
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33. VSB031 (DMS 90 Test)

33.1. GENERAL

The VSB for DMS 90 is a fully automatic execution sequence which exercises all parts of DMS 90 including processors, DBMS functions, and utilities. It is not a real-life application, but was developed as a complement to a larger, existing test bed and, as such, includes a number of minimum conditions not covered in the larger test bed. The data is artificial in nature and limited in quantity in order to satisfy the extreme minimum conditions. As with most of the VSB tests, a major goal is to execute the complete DMS 90 component in a short time.

The flow of the VSB follows normal usage of DMS 90. It is divided into three logical job streams (Figure 33-1). The first corresponds to a user's initial installation of DMS 90. A database is allocated and built using the normal sequence of DMS 90 components. All listings are printed by the processors. In the second job stream, a run-unit is compiled and readied for execution. This program includes the use of all DMS 90 verbs and most of the major variations of the FIND/OBTAIN and other functions. The system status locations and record, set, and area currencies are checked after many of the verb executions. The third job stream of the VSB corresponds to actual production use of the database. The run-unit compiled in the previous job stream is now executed. All of the verb tests are self-checking, and an audit trail is provided listing each DMS 90 verb executed and the system status location contents after each execution. Following this execution, the security and journal recovery utilities are exercised.



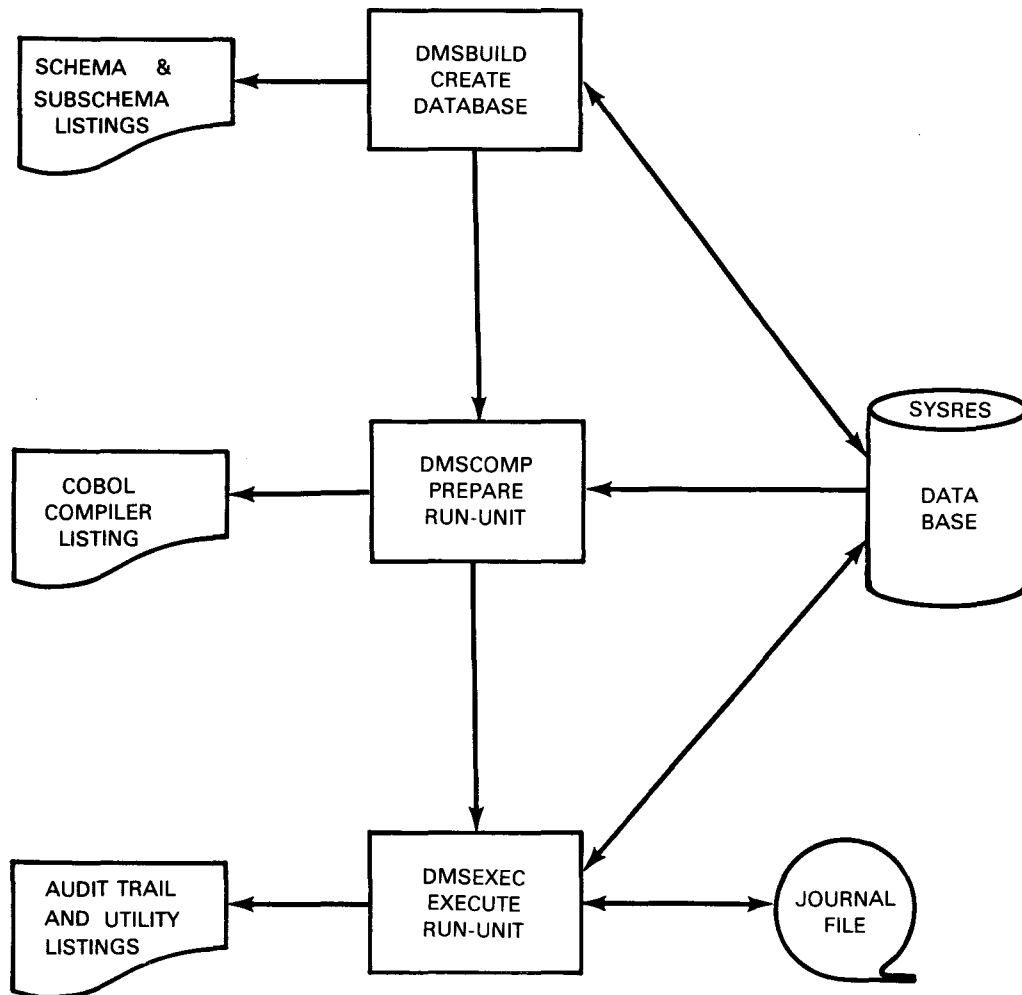


Figure 33-1. DMS 90 VSB Overview

33.2. JOB REQUIREMENTS

The following configuration requirements must be available:

1. Minimum of 131K main storage.
2. Space on the system resident volume for the test database (501 blocks of 256 bytes each). The JCL automatically scratches and reallocates this file.
3. Space on the system resident volume for a temporary library to hold the intermediate and final outputs of the language processing steps. The JCL automatically scratches and reallocates this library.
4. A tape drive (for the run-unit execution phase only) and a scratch tape; the JCL includes volume initialization as required. If the 90/30 installation does not have a tape subsystem, then the JCL for the execution must be modified for disk by the user.

33.3. JOB DESCRIPTIONS

The DMS 90 VSB is divided into five job streams as follows:

1. DMSBUILD - Allocates the necessary files and executes the DDL.
2. DMSCOMP - Compiles the run-unit.
3. DMSEXEC - Executes the run-unit and the recovery utilities.
4. DMSSCR - Scratches the files allocated by DMSBUILD.
5. DMSLIST - Lists DMS/90 VSB jobs.

Each job stream is complete within itself and may be restarted or rerun without going back to the previous job stream. The job steps for the DMSBUILD, DMSCOMP, and DMSEXEC job streams are described in the paragraphs that follow.

33.3.1. DMSBUILD Job Stream

The DMSBUILD job stream includes the following steps:

1. SCR - The data dictionary file is scratched and reallocated. Page size is 2048 bytes, and 35 pages are allocated.
2. SCR - The database file is scratched and reallocated. Page size is 2048 bytes, and 40 pages are allocated.
3. DMCLP - Reads the source module and compiles DMCL for the data dictionary in primitive mode. The output from DMCLP is assembled and link-edited.
4. DBINT - Initializes the data dictionary.
5. DBMS - This job stream is activated. Execution of the DMSBUILD job stream is halted and must be reactivated by the operator when the message DBMS INITIALIZED appears on the console.
6. SCHMAP - Reads the source module from the job stream and compiles the schema.
7. SUBSP - Reads the global subschema from the job stream and compiles the subschema. Output is assembled and link-edited.
8. DMCLP - Reads the source module and compiles DMCL for user database. Its output is assembled and link-edited.
9. Console - A message appears on the console instructing the operator to shut down DBMS.

33.3.2. DMSCOMP Job Stream

The DMSCOMP job stream includes the following:

- ↓ 1. DBMS job stream is activated. Execution of DMSCOMP job stream is halted and must be reactivated by the operator when the message DBMS INITIALIZED appears on the console.
- ↑ 2. DMLP reads the run-unit source from the job stream and outputs it to the temporary library.
3. COBOL calls from and outputs to the temporary library. Maps are suppressed.
4. LNKEDT automatically includes the DBMS modules from the system object library and outputs to the temporary library. The module XU7PAG is specifically included only to test its presence in the system library. This module is not needed in the VSB, but is needed by a user who uses his own XR7CALC module in place of the standard one supplied with DMS 90.

33.3.3. DMSEXEC Job Stream

The DMSEXEC job stream includes the following:

- 1. DBINT initializes the database prior to executing the run-unit. This allows for rerunning if desired.
2. VSBRUN - A scratch tape is prepped as a journal tape and the test run-unit is executed. Every DMS 90 verb is executed and pass/fail information is printed and displayed on the console. A message is displayed on the console to shut down DBMS. A new job stream is activated to exercise the utilities.
- 3. DBDUM is executed but, with no TFILE assigned, it produces only a report of the state of the database.
4. DBPAG prints the user page (1) in both decimal and hexadecimal. These two steps, DBDUM and DBPAG, establish a reference for the restoration steps described below.
5. DBREC performs a backward restore of the database from the journal tape.
6. DBPAG prints page 1 (hexadecimal). Because the previous execution of DBREC negated the effect of the run-unit execution, page 1 should be empty.
7. DBREC performs a forward restore of the database.
8. DBPAG prints page 1 (decimal). The page should be restored to the (reference) condition following the run-unit execution.
9. The scratch tape is redefined as a dump tape.
10. DBDUM performs a TOTAL dump of the database.
11. DBINT initializes page 1.

12. DBRES performs a TOTAL restore of the database.
13. DBPAG prints page 1 (decimal). The page should be restored to the (reference) condition following the run-unit execution.

33.4. EXECUTION TIMING

The VSB segments require approximately:

- DMSBUILD - 10 minutes
- DMSCOMP - 10 minutes
- DMSEXEC - 12 minutes

33.5. OPERATING INSTRUCTIONS

To run the DMS 90 tests, it is necessary only to mount the system disk. All work is performed on this one pack. (Note that because this layout is convenient but inefficient, the execution times of the DMS 90 processors, especially DMLP, are much longer than would be the case in a well-planned production installation.) Operator intervention is required to reactivate the execution of DMSBUILD and DMSEXEC job streams upon initialization of DBMS. Operator intervention is also required to shut down DBMS to mount a scratch tape.

Enter the following commands from the system console:

1. RUN DMSBUILD

(Wait for completion.)

2. RUN DMSCOMP

(Wait for completion.)

3. RUN DMSEXEC

(Mount the scratch tape as requested by the system.)

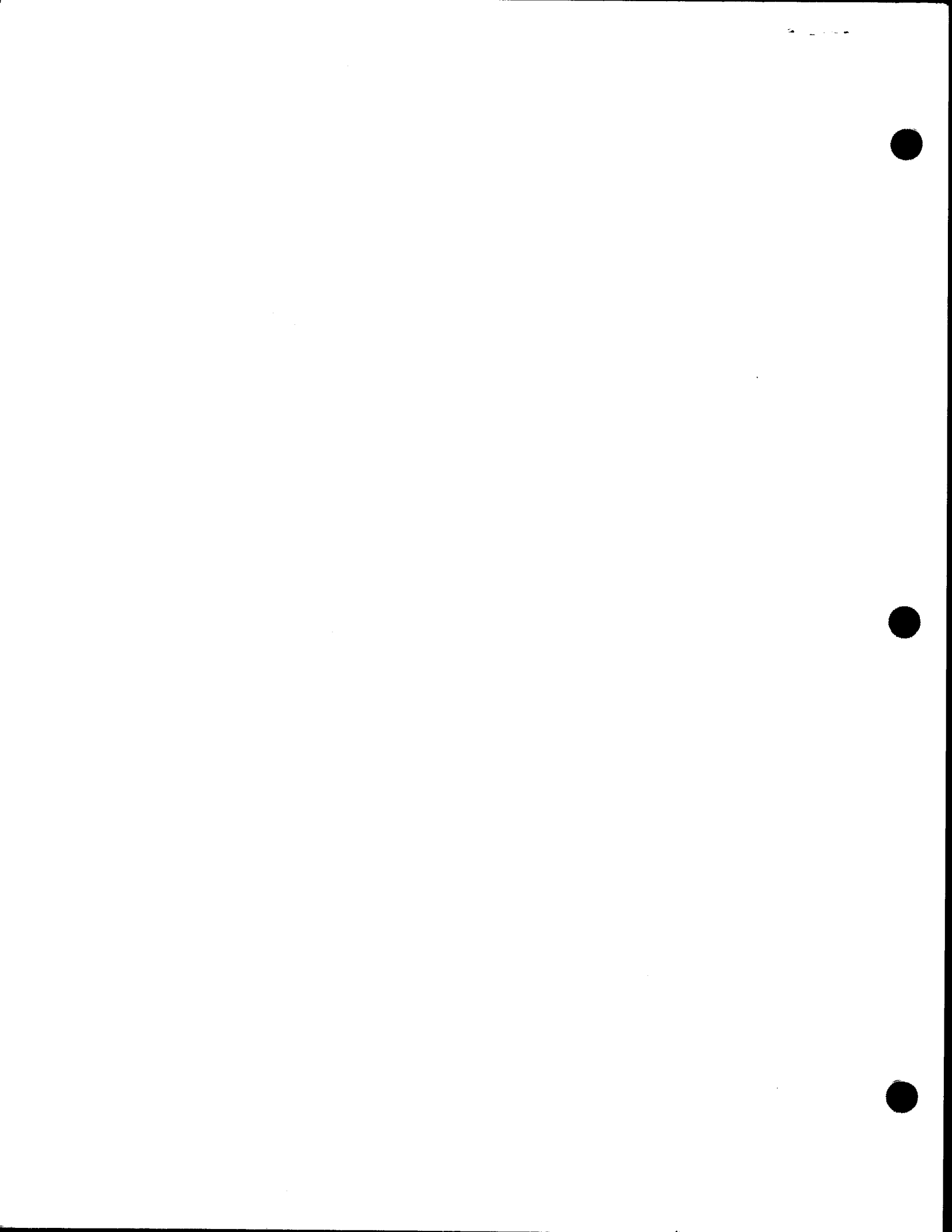
4. Each job is complete within itself and may be rerun without going back to the previous one. When execution of all three jobs is completed, enter the following to scratch the temporary files:

RUN DMSSCR

33.6. JOB STREAM LISTING

To list the DMS/90 VSB jobs, both JCL and DMS 90 source, enter the following command from the system console:

RUN DMSLIST



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