Installation Engineering Handbook 269
Western Electric Company, Incorporated
Northern Illinois Works

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NO. 3 ESS GENERAL INFORMATION ON OVERWRITE PROCEDURES AND HASH SUMS

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1. GENERAL INFORMATION

1.1 This procedure may be used to implement an overwrite for either resident or nonresident programs. System abnormalities mut be corrected and it must be in a switchable state before this procedure is applied.

1.2 The documentation should include a Chips listing of messages required in the procedure.

1.3 The messages can be input manually at the maintenance TTY or via a TTY paper tape reader. Both will be explained in this section.

2. REFERENCES

2.1 The appropriate issues of the following documents may be useful as references:

Document	Description
PG-3H902	Documentation Index for Issue X.Y of Generic SO-2
IM-3H300-02	Input Message Manual
OM-3H300-02	Output Message Manual
PA-3H300-02	Office Data Tables Layout Specifications
PK-1C900-01	Maintenance Reference Manual (Common Systems)
PK-1C901-01	Common Manual
J3H0015-01	Main Store Memory Backup Cartridge for Standard No. 3 ESS Offices

3. GENERAL PROCEDURE ON OVERWRITES

1 - Maintenance TTY

Step 1. Check that CU0 and CU1 are in a switchable state.

Step 2. Make sure both TDCs ATP

Step 3. Type [ALW:OW!]
Wait for an [ALW OW COMPL]

Step 4. Type [IN:GENID:SOX!]
Reply [OK]

Step 5. Type [IN:ISSID:ISxPxx!]
Reply [OK]

Step 6. Type [IN:OW xxxx;TTY]
Immediate Reply [PF]
Wait for an [IN OW COMPL]
xxxx = OW NO.

Step 7. Type [IN:OWDATA:o,ss,aa,oo,nn!]
Reply [OK] Refer to IM for description of variable fields.

Step 8. After loading overwrite type [VFY:OW:OLD!]
Immediate reply [PF]
Wait for reply [VFY OW COMPL]

Step 9. Type [OP:OW;TTY!]
Reply [OP OW xxxx.] Compare output to Chips Listings.

Step 10. Type [OP:OW xxxx;TAPE!]
Immediate reply [PF]
Wait for reply [OP OW COMPL]

Step 11. Type [LOD:OW:NEW!]
Wait for reply [LOD OW COMPL]

Step 12. Repeat Steps 3 thru 11 as many times as required for additional overwrites.

Step 13. Type [SW:SYC!]
Reply [SYC x ACT]

Step 14. Let Patches soak for 15 minutes.

Step 15. Type [IN:OW xxxx;TAPE!]

(xxxx - overwrite number from Step 6)

Wait for reply [IN OW COMPL]

Step 16. Type [LOD:OW:NEW!]

Immediate reply [PF]

Wait for reply [LOD OW COMPL]

Step 17. Type [ACT:OW!]

Immediate reply [PF]

Reply [ACT OW COMPL]

Step 18. Type [UPD:OW!]

Immediate reply [PF]

Reply [UPD OW COMPL]

At this point the overwrites should be on both tapes and active.

2. Paper Tape

Step 1. Check that CU0 and CU1 are in a switchable state.

Step 2. Make sure both TDCs ATP.

Step 3. Type [ALW:OW]

Wait for reply [ALW OW COMPL]

Step 4. Place the paper tape in TTY tape reader and push the key to manual start. The tape will automatically input messages listed in General Procedure 1, Steps 4, 5, 6 and then stop.

Step 5. Start tape operation again by pushing the manual key to manual start. The tape will automatically input messages listed in General Procedure 1, teps 6 and 7 and then stop.

Step 6. When tape has completed, continue manual operation for General Procedure 1, Step 9.

4. TROUBLESHOOTING TIPS

4.1 Overwrite Removal Procedure

To remove a No. 3 ESS overwrite if system has a problem follow the following steps:

1. Type [ALW:OW!]
   Reply [ALW OW COMPL]
2. Type [IN:OW xxxx;TAPE!]
   Reply [IN OW COMPL]
3. Type [LOD:OW:OLD!]
   Reply [LOD OW COMPL]
4. Type [SW:SYC!]
   Reply [SYC x ACT]
5. Type [LOD:OW:OLD!]
   Reply [LOD OW COMPL]
6. Type [CNL:OW!]
   Reply [CNL OW COMPL]
7. Type [RMV:OW!]
   Reply [RMV OW COMPL]
8. Type [STOP:OW!]
   Reply [STOP OW COMPL]

4.2 Troubleshooting Tips

[IN OW STOPPED] This message can mean an error in the generic point or issue no. check the OW file number.

0 = INACTIVE
1 = ACTIVE
3 = OW NUMBER CAN'T BE USED

[IN OW DATA ERROR] Address field matches with one in buffer, this is a warning message; ignore the message if you are correcting a previous message.

[VFY OW ERR] The verification of the OW has encountered a mismatch between the alleged old (new) data in the input message and the actual data retrieved from MAS or Tape. Check the input message for typing errors in the segment, address, new, and/or old data fields of the [IN:OWDATA] message. Make sure the overwrite belongs to the current version of the generic and the overwrite is in the RIGHT sequence.

[OP OW STOPPED] A verify error (mismatch) was found or an address within a specified segment could not be found. Use the data from the [VFY OW ERR] message to determine the reason for mismatch.

[LOD OW STOPPED] The address within a specified segment could not be found. Possible bad CU, tape or TDC.

[ACT OW STOPPED] Overwrite is active in both MAS already or already dead or didn't load on the overwrite file.

[UPD OW STOPPED] Tape handler could not open the checksum file. Translation overwrites may not be updated. Verify all addresses on the overwrite.

5. HASHSUM PROCEDURES FOR S02 ISSUE 3 GENERIC

A hashsum mechanism is being implemented to check the contents of the Generic Program. The hashsums will be calculated for only the resident portion of the Generic Program. Difference between offices using S02 issue 3 and S02 issue 4 of the Generic Program requires different preparations, for S02 issue 3 is as follows:

5.1 The office must currently be running on S02 issue 3.4 with the following OWs active and loaded into program store.

BWT 251 - 255
266 -
268 - 301
303 - 310
313 - 328

5.2 Input OW 1706 in issue 3, BWT 368 into main store using General Procedure 1, Page 3. OW1706 enables the hashsum capabilities.

5.3 Type in the following TTY messages:

[STOP:OW!]
Reply [OW STOPPED]
Type [ALW:TAPEUTIL!]
Reply [ALW TAPEUTIL COMPL]
Type [STOP:TAPEUTIL!]
Reply [TAPEUTIL STOPPED]
Type [ALW:OW!]
Reply [ALW OW COMPL]

The above TTY communication will reload the overwrite program with OW 1706 in it, back into main store.

5.4 The following TTY communication should be used to calculate hashsums in issue 3.4 offices:

Type [VFY:OW ADR 077777!]> Refers to Mod 0 Sys Response [VFY OW ADR 077777 37739]

Type [VFY:OW ADR 177777!]> Refers to Mod 1 Sys Response [VFY OW ADR 177777 48807]

Type [VFY:OW ADR 222777!]> Refers to Mod 2 Sys Response [VFY OW ADR 222777 3642]

6. HASHSUM PROCEDURES FOR S02 ISSUE 4 GENERIC

6.1 In S02 issue 4 offices: The office must be running on issue S02 issue 4.2 and no patches should be applied to the generic. [An empty overwrite file]

6.2 Input BWT154-0001 into main store using General Procedure 1, Page 3. BWT 154-0001 enables the hashsum capabilities.

6.3 Type in the following TTY messages:

[STOP:OW!]
Reply [OW STOPPED]
Type [ALW:TAPEUTIL!]
Reply [ALW TAPEUTIL COMPL]
Type [STOP:TAPEUTIL!]
Reply [TAPEUTIL STOPPED]
Type [ALW:OW!]
Reply [ALW OW COMPL]

The above TTY communication will reload the overwrite program, with BWT 154-0001 back into main store.

6.4 The following TTY communication should be used to calculate hashsums in issue 4.2 offices:

Type [VFY:OW:ADR 77777!]> Refers to Mod 0 Sys Response [VFY OW ADR 077777 62701]

Type [VFY:OW:ADR 177777!]> Refers to Mod 1 Sys Response [VFY OW ADR 177777 33217]

Type [VFY:OW:ADR 247777!]> Refers to Mod 2 Sys Response [VFY OW ADR 247777 39162]

If the office hashsum values do not agree with the above values, an overwrite to the Generic Program is incorrect. See Troubleshooting Tips (Hashsums).

Troubleshooting Hashsums

All overwrites to the resident generic will be checked by the hashsums and any error must be corrected. All overwrites to the resident generic with the segment number in the [IN:OWDATA message equal to 000] because hashsums are a check over the resident generic. Future BWTs must be applied in sequence, for a specific generic issue. But in no case will more than 5 BWTs be issued without hashsum numbers.

No arrows shown due to extensive changes.

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Extensive changes.