

**ORDER**

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
WESTERN REGION**

WE 6190.3

5/29/79

**SUBJ:** ARTS-II FAULT LOG

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1. PURPOSE. This order establishes responsibilities for preparation, retention, and distribution of ARTS-II Fault Logs.
2. DISTRIBUTION. This order is distributed to branch level in Airway Facilities and Air Traffic Divisions, Air Traffic ARTS Facilities, and Airway Facilities Sectors that have Automated Radar Terminal System (ARTS-II) equipment.
3. BACKGROUND.
  - a. Types of Failures. There are two types of processor failures - hardware and software - and when a failure occurs, it is not known initially which is the cause of the failure. Effective fault diagnosis requires that Airway Facilities and Air Traffic personnel establish standardized cooperative fault recording and analysis practices.
  - b. Current Federal Aviation Administration Orders.
    - (1) Order 1100.121A, Management of Air Traffic Control Automation Systems, defines management of air traffic control automation systems.
    - (2) Order 1100.134A, Maintenance of National Airspace Systems Automation Subsystems, describes the procedures for centralized maintenance and engineering support of the National Air Space System.
    - (3) Order 1100.139, Air Traffic and Airway Facilities Responsibilities at NAS Computer-Equipment Terminal Facilities, defines the working relationship and the responsibilities of the AT/AF staffs.
4. ACTION.
  - a. Recording of faults shall be in accordance with the instructions provided in the ARTS-II Fault Log Document. In view of the difficulty in identifying the causes of each fault, Airway Facilities and Air Traffic personnel shall cooperate in fault recording and analysis. When a fault situation occurs, the responsible persons from both Airway Facilities and Air Traffic should jointly record the appropriate data on the fault log, if both parties are available. If one or the other party is not available, then the remaining persons shall complete the fault log and provide fault information to the absent party upon his/her arrival.

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**Distribution:** A-X (AF/AT)-3; A-FAF-2/7 (AFS WJF, AFS RNO, Initiated By: AWE-430  
AFS RIV only) (LTD); FAT-8 (LTD)

b. If the Air Traffic Chief or his/her designee requests that the ARTS be returned immediately to service, the persons recording the data should comply with the request, provided the system is certifiable and a minimum of fault log data recording has been recorded. It shall be noted on the fault log that the data is incomplete due to Air Traffic requirements. Indicate on the fault log, "Unable to complete because of Air Traffic requirements (state requirement) per (name of A. T. Designee)", however, every effort should be made to take a complete fault log.

c. The Airway Facilities and/or Air Traffic personnel should attempt to obtain a memory dump for all recurring faults, except as provided under paragraph 4b.

## 5. RESPONSIBILITIES.

### a. Airway Facilities Sector Managers/Air Traffic Facility Chief.

(1) A faulted ARTS System shall not be returned to service prior to taking a complete fault log unless operational requirements make it necessary to restore service immediately.

(2) An ARTS-II fault log central file shall be developed and maintained for the facility. The central file will contain a complete record of all faults occurring at the facility. Each fault log shall be retained for a two year period, numbered consecutively by calendar year and number of facility outage; i.e. EDW 79-001.

(3) Responsibility and physical location of this file shall be determined by mutual agreement between local AF and AT personnel.

b. Airway Facilities Sector Managers should forward a copy of each fault log direct to the Maintenance Engineering Branch (AWE-430), Attention: Terminal Automation/Radar Section (AWE-438) and to the Automation Staff (AWE-550) within three working days of the associated outage.

c. Air Traffic Facility Chief. When a fault has been attributed to software, information including program number, patch level, and reason for the fault shall be provided to the Sector Manager or his/her designee.

d. Airway Facilities Division/Air Traffic Division. The appropriate AF/AT Division representatives from AWE-430 and AWE-550 will review all ARTS faults and take the necessary action to correct hardware and software deficiencies that are adversely affecting system reliability.

6. FORMS. Use ARTS II Fault Log Form FAA Form 6190-2 (7/79). Forms are available through the NAS Documentation Facility, ANA-64A, Building 53, NAFEC, Atlantic City, New Jersey 08405 (FTS 346-2603). Use the FAA Form 1750-3 "NAS Documentation Request" to place your request.

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Appendix 1

APPENDIX 1. SAMPLE OF ARTS II FAULT LOG

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ RTS: \_\_\_\_\_

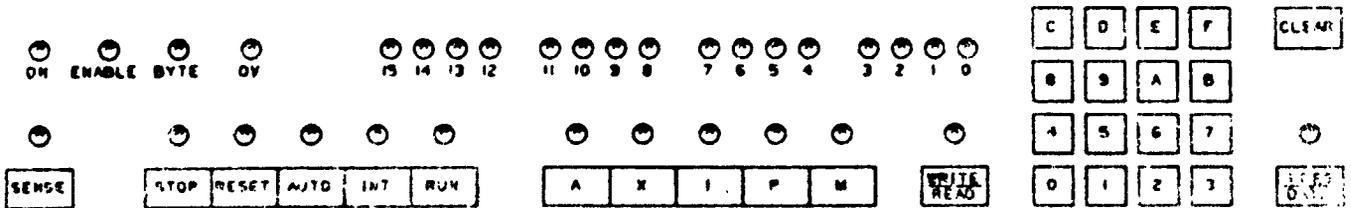
OPERATIONAL PROGRAM VERSION: \_\_\_\_\_

ARTS SITE: \_\_\_\_\_

DSS NAME: \_\_\_\_\_ AF TECHNICIAN NAME: \_\_\_\_\_

The following procedures should be followed when a fault occurs to ensure that the contents of the appropriate registers and memory are recorded.

1. Do not press RESET.
2. Place an "X" in each indicator (circle) that is lighted.



3. If the S REG/DATA light is OFF, press the S REG/DATA switch to enable the Console Sense Register, or if the S REG/DATA light is already ON:

- a. Place an "X" in each indicator (circle) that is lighted.



4. If the Enable light is OFF, Enable the Console by pushing the Enable Slide Switch (located on the right edge of the Programmer's Console) UP. The Console Enable light will turn ON.

5. Enable the Console Data Register by pressing the S REG/DATA switch. S REG/DATA light will turn OFF.

6. Press the STOP switch. STOP light will turn ON.

- 7. Press RESET switch, if the RUN light is ON, it will turn OFF and the STOP light will remain ON.
- 8. If the WRITE/READ light is ON, press the WRITE/READ switch, WRITE/READ light will turn OFF.
- 9. Press the following switches, in the order shown, and place an "X" in each indicator (circle) that is lighted after the associated switch has been pressed.

a. A-REGISTER

<input type="checkbox"/>																			
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	_____			

b. X-REGISTER

<input type="checkbox"/>																			
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	_____			

c. I-REGISTER

<input type="checkbox"/>																			
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	_____			

d. P-REGISTER

<input type="checkbox"/>																			
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	_____			

e. M-MEMORY

<input type="checkbox"/>																			
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	_____			

- 10. Mount and thread the Magnetic Tape labeled "ARTS II MEMORY DUMP PROGRAM" with a write ring installed on the MTU.
  - a. On the MTU, press LOAD twice and ON LINE once.
  - b. Press RESET.
  - c. If S REG/DATA light is OFF, press S REG/DATA switch, light will turn on.

- d. Enter an "A" in the S REG via the Hexidecimal Keyboard.
- e. Press S REG/DATA switch, light will turn OFF.
- f. Press WRITE/READ switch, light will turn ON.
- g. Enter :7E00 in the Hexidecimal Keyboard.
- h. Press the X REGISTER switch to transfer :7E00 to the X Register.
- i. Press STOP switch, light will turn OFF.
- j. Press AUTO switch, tape will move forward, loading the "ARTS II MEMORY DUMP PROGRAM" into memory.
- k. Press STOP, light will turn ON.
- l. If the S REG/DATA light is OFF, press the S REG/DATA switch to enable the Console Sense Register S REG/DATA light to turn ON.
- m. Enter :0 in the S REG via the Hexidecimal Keyboard.
- n. Press the S REG/DATA switch to disable the Console Sense Register and enable the Console Data Register, light will turn OFF.
- o. Press the WRITE/READ switch, light will turn ON.
- p. Enter the appropriate value for your site, from the list below, into the Hexidecimal Keyboard.

	MEMORY	A REG =
1.	24K	0
2.	32K	1
3.	40K	2

- q. Press the A REGISTER switch to transfer the value to the A REGISTER.
- r. Enter :7E00 in the Hexidecimal Keyboard, press P REGISTER switch to transfer :7E00 to the P REGISTER.
- s. Press STOP, light will turn OFF.
- t. Press RUN, tape will rewind, move forward, rewind and move forward a second time.
- u. Press STOP, light will turn ON.

