U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

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Effective Date: 12/15/2006

SUBJ: MAINTENANCE OF RUNWAY VISUAL RANGE (RVR) EQUIPMENT TYPE FA-10268

1. This maintenance handbook cover page is updated to:

a. Comply with Order 1700.6C, FAA Branding Policy, Use of the FAA Logo, FAA Signature, and DOT Seal.

b. Comply with Order JO 1320.1, Air Traffic Organization (ATO) Prefixes for Directives.

c. To identify new Office of Primary Responsibility (OPR) within the ATO organizational structure.

2. A hardcopy cover page will be issued when a handbook revision is performed and may be issued with the next page change if deemed appropriate by the office of primary responsibility.

for Richard A. Thoma
Director, Safety and Operations Support

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ORDER

6560.31

MAINTENANCE OF RUNWAY VISUAL RANGE (RVR) EQUIPMENT
TYPE FA-10268

April 14, 1999

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Distribution: Selected Airway Facilities Field and Regional Offices; ZAF-604

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RECORD OF CHANGES

DIRECTIVE NO. XXXXXX

CHANGE TO BASIC	SUPPLEMENT			OPTIONAL	CHANGE TO BASIC	SUPPLEMENT			OPTIONAL

FAA Form 1320-5 (6-80) USE PREVIOUS EDITION

FOREWORD

1. PURPOSE.

a. This order provides guidance and prescribes technical standards, tolerances, and procedures applicable to the maintenance of the runway visual range (RVR) system, type FA-10268. It also provides information on special methods and techniques that will enable maintenance personnel to achieve optimum performance from the equipment. This information augments information available in instruction books and other handbooks, and complements the latest edition of Order 6000.15, General Maintenance Handbook for Airway Facilities.

b. This order implements Configuration Control Decision (CCD) No. N20877, Handbook for RVR FA-10268 will Provide Guidance and Augment Information Available in the Instruction Book.

2. DISTRIBUTION. This order is distributed to selected offices and services within Washington headquarters, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, regional Airway Facilities divisions, and Airway Facilities field offices having the following facilities/ equipment: RVR, type FA-10268.

3. MAINTENANCE AND MODIFICATION POLICY.

a. Order 6000.15, this handbook, the applicable equipment instruction books, and other applicable handbooks shall be consulted and used together by the maintenance technician in all duties and activities for the maintenance of the RVR type FA-10268 equipment. These documents shall be considered collectively as the single official source of maintenance policy and direction authorized by Operational Support. References located in the chapters of this handbook entitled Chapter 3, Standards and Tolerances, Chapter 4, Periodic Maintenance, and Chapter 5, Maintenance Procedures, shall indicate to the user whether this handbook and/or the equipment instruction books shall be consulted for a particular standard, key inspection element or performance parameter, performance check, maintenance task, or maintenance procedure.

b. The latest edition of Order 6032.1, Modification to Ground Facilities, Systems and Equipment in the National Airspace System, contains comprehensive direction concerning the development, authorization, implementation, and recording of modifications to facilities, systems, and equipment in commissioned status. It supersedes all instructions published in earlier editions of maintenance technical handbooks and related directives.

4. FORMS. In addition to the forms required by Order 6000.15, FAA Form 6000-8, Technical Performance Record - Continuation or Temporary Record/Report Form, is to be maintained for each facility. FAA Form 6000-8 is available from the FAA Logistics Center under NSN 0052-00-686-0001.

5. RECOMMENDATIONS FOR IMPROVEMENT. Preaddressed comment sheets are provided at the back of this handbook in accordance with the latest edition of Order 1320.58, Equipment and Facility Directives - Modification and Maintenance Technical Handbooks. Users are encouraged to submit recommendations for improvement.

Teresa E. Hudson
Acting Program Director for Operational Support

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TABLE OF CONTENTS

CHAPTER 1. GENERAL INFORMATION AND REQUIREMENTS

Paragraph *Page*

100. Objective 1
101. Safety 1
102. Maintenance Conditions 1
103. Maintenance Concept 1
104. Coordination of Maintenance Activities 1
105. Aircraft Accidents 1
106. Certification 2
107.-199. Reserved. 2

CHAPTER 2. TECHNICAL CHARACTERISTICS

200. Purpose or Function 5
201. Description 5
202. Theory of Operation 6
Figure 2-1. RVR System Functional Interface 7
Figure 2-2. CD Front Panel 8
Figure 2-3. Typical CD Display With RVR Output 9
Table 2-1. CD Controls and Indicators 9
203.-299. Reserved. 10

CHAPTER 3. STANDARDS AND TOLERANCES

300. General 11
301. References 11
302.-334. Reserved. 11
335. DPU/SIE Fault Diagnostics 11
336. Parameter Values 11
337. Controller Display Performance Checks (CD BIT's) 11
338. DPU Voltages 11
339. SIE Voltages 12
340. RLIM Outputs 12
341. ALS/SIE 13
342. VS/SIE 14
343. Soft Alarms 15
344. RVR Product Accuracy 15
345. Product Limits 15
346. Sensor Limits 15
347. RVR System Parameters 16

TABLE OF CONTENTS (Continued)

Paragraph *Page*

348. System Time 17
349. SIE Battery Test 17
350.-399. Reserved. 17

CHAPTER 4. PERIODIC MAINTENANCE

400. General 19
401. References 19
402.-405. Reserved 19

SECTION 1. PERFORMANCE CHECKS

406. Biweekly 19
407. Quarterly 19
408. Semiannually 20
409.-419. Reserved 20

SECTION 2. OTHER MAINTENANCE TASKS

* 420. As Required ..... 20 *
421. Quarterly 21
422. Semiannually 21
423. As Required 21
424. Every Two Years 21
425. Every Five Years 22
* 426.-427. Reserved. 22
428. Every Ten Years 23
429.-499. Reserved ..... 23 *

CHAPTER 5. MAINTENANCE PROCEDURES

500. General 23
501. FAA Form 6000-8 Entries 23
502. Test Equipment Required 23
503.-509. Reserved. 23

SECTION 1. PERFORMANCE CHECK PROCEDURES

510. Performance Measurements 23
511. Parameter Values (Soft Alarms) 23
Figure 5-1. RVR Biweekly Performance Checks 24
Figure 5-2. RVR Quarterly Performance Checks 25
* Figure 5-3. Withdrawn--CHG 1 *

TABLE OF CONTENTS (Continued)

Paragraph *Page*

512. System Time Verification 27
513. SIE Battery Test. 27
514. SIE Deice Heater Voltage 28
* 515. Withdrawn--CHG 1 *
516.-549. Reserved. 28

SECTION 2. OTHER MAINTENANCE TASKS PROCEDURES

550. Maintenance Procedures 29
551. RVR Product Accuracy 29
552.-579. Reserved. 29

SECTION 3. SPECIAL MAINTENANCE PROCEDURES

580. Incident Data Collection and Preservation 30
581. Retrieving Archive Data and Saving to Diskette 31
582. System Time Correction 32
583. System Certification 33
584.-599. Reserved. 33

APPENDIX 1. CERTIFICATION REQUIREMENTS

Table 1. Teledyne RVR System, Type FA-10268 1

CHAPTER 1. GENERAL INFORMATION AND REQUIREMENTS

100. OBJECTIVE. This handbook provides the necessary guidance, to be used in conjunction with information available in instruction books and other handbooks, for the proper maintenance of the runway visual range (RVR) system, type FA-10268.

101. SAFETY.

a. Maintenance personnel shall observe all pertinent safety precautions when performing duties on the equipment. For guidance, refer to Order 6000.15.

b. Heating Teflon above 400 °C (752 °F) creates small quantities of toxic gases. The temperatures of the tips of different soldering irons range from 260° to 538 °C (500° to 1000 °F) and will produce toxic gases when they come into contact with Teflon material. Maintenance personnel shall avoid breathing the fumes and shall ensure that adequate ventilation is provided when soldering or heating cables or components that contain Teflon material. Refer to chapter 6 of Order 6000.15 for additional safety precautions.

102. MAINTENANCE CONDITIONS. Meter readings may be different if taken under different conditions. Therefore, it is important that maintenance tests, measurements, and adjustments be made under similar conditions each time. The conditions shall be those that exist during normal, unattended operation. Ensure that the equipment is at normal operating temperature, shields are in place, unnecessary lights are OFF, and the buildings housing the equipment are at their normal temperature.

103. MAINTENANCE CONCEPT. The RVR system, type FA-10268, is designed to minimize the requirements for preventive maintenance. The FAA standard two-level maintenance concept (site and depot) applies to the RVR equipment. Site maintenance is limited primarily to failure identification and replacement of failed modules. The failed modules will be returned to the supporting depot maintenance facility.

104. COORDINATION OF MAINTENANCE ACTIVITIES. Maintenance activities shall be closely coordinated with operations personnel to preclude unanticipated interruption of the operation of the RVR equipment. This procedure is especially important when visibility conditions are degraded. Sufficient advance notice shall be given to operations personnel enabling them to take appropriate action. Likewise, operations personnel are expected to recognize the need for releasing equipment for routine maintenance work, and to offer cooperation in furtherance of practices which ensure continuous and reliable equipment operation. Refer to Order 6000.15 for further guidance.

105. AIRCRAFT ACCIDENTS. Among the responsibility of the Airway Facilities personnel in the investigation of an aircraft accident are the evaluation and * documentation of the facilities which were or might have been, involved in the accident. This requires that facility operational data be obtained and recorded on the maintenance logs and technical performance records along with retrieving the RVR product archive data and placing in an Incident Archive data file. These records are official documents and may be used by an accident investigation board in the determination of facility operational status at the time of the accident. Thus, to avoid any misinterpretation of the date, the entries shall be complete, clear, concise, and accurate. See the latest edition of Order 8020.11, Aircraft Accident and Incident Notification, Investigation, and Reporting, and any regional or sector supplements for general responsibilities, designation of the accident representative, and other aspects of accident procedures.

106. CERTIFICATION. Refer to Order 6000.15, for general guidance on the certification of systems, subsystems, and equipment. Refer to appendix 1 of this handbook for the specific certification requirements of the runway visual range (RVR) system, type FA-10268.

107.-199. RESERVED.

CHAPTER 2. TECHNICAL CHARACTERISTICS

200. PURPOSE OR FUNCTION. The runway visual range (RVR) system, type FA-10268, monitors and reports runway visual range conditions at up to three locations along the runway; i.e., touchdown, midpoint, and rollout. The system gathers data from three sources: visibility sensors, utilizing Forward Scatter Technology, an ambient light sensor (one per system) and induction pickup current loop sensors of the Runway Light Step Settings Monitor. The system can report runway visual range conditions for up to eighteen (18) sensor locations. It processes this data, which represents the extinction coefficients, ambient light, and edge and centerline runway light step settings, to produce an output that indicates the distance a pilot in a moving aircraft can expect to see at the three locations along the runway. This instrumentally derived value, called the RVR product, and the edge and centerline runway light step settings levels are distributed to various display units to be used by air traffic control personnel in support of instrument landing system/ microwave landing system (ILS/MLS) category I, II, and III a/b landing and takeoff operations. The system will also support Global Position System (GPS) operations.

201. DESCRIPTION.

a. The now generation RVR system, type FA-10268, utilizes Forward Scatter Technology consisting of the following major assemblies: (Refer to figure 2-1.)

(1) Visibility Sensor (VS)

(2) Ambient Light Sensor (ALS)

(3) Runway Light Intensity Monitor (RLIM) Current Sensor

(4) Sensor Interface Electronics (SIE)

(5) Data Processing Unit (DPU)

(6) Controller Display (CD)

b. The visibility sensors are normally mounted on low-impact-resistant structures along the runways at the touchdown, midpoint, and rollout locations. Their function is to collect data relative to visibility conditions. To prevent interference with their operation by snow and ice accumulations, they are equipped with built-in heaters. The associated sensor interface electronics (SIE) unit is mounted near the VS and attached with two 37-foot cables; one for the transmitter and one for the receiver.

c. The ambient light sensor is mounted in a location that provides unobstructed ambient light. It is mounted on a vertical pipe with the window facing in a northerly direction. It also has built-in heaters. Its SIE is mounted nearby and attached with a 37-foot cable.

d. The runway light intensity monitor current sensors are usually located in the power vault at the airport. They provide an indication of the intensity of the runway centerline and edge lighting. The intensity is proportional to the current though the lamps. The magnitude of the light intensities are controlled by airport lighting constant current regulators. The RLIM current sensor senses the magnitude of the current and develops a voltage proportional to it. The associated SIE may be located close to the sensors or as far away as 150 feet with added cable. The RLIM SIE current loop sensors and their associated interconnecting cables must be in an enclosed environment.

e. A sensor interface electronics unit is associated with each type sensor. It acquires the sensor output signals, performs quality control checks, and formats the data for transmission to the data processing unit.

f. The data processing unit is usually located in the airport traffic control tower (ATCT) equipment room. It can be as far as 5 nautical miles from the sensors. It collects, from the SIE's operational and maintenance data from all sensors, processes the data, archives it, and distributes it to CD's.

g. The controller displays (local) are located in the control tower and may be as far as 2,000 feet from the data processing unit. There can be up to 26 local CD's per system. Additional remote units can be added if desired. The CD displays information relative to runway visual range, runway edge and centerline light step settings and equipment status, to aid air traffic controllers in advising pilots regarding takeoff and landing operations.

202. THEORY OF OPERATION.

a. Overview. The following is a brief summary of the purpose, and theory of the operation of each of the major assemblies and the maintenance data terminal (MDT). Refer to figure 2-1. For more details, refer to the manufacturers instruction book. The sensors collect data reflecting the visibility conditions along the runways, the ambient light level, and the intensity level of the edge and centerline runway lights. The data is sent via the sensor interface electronics (SIE) to the data processing unit (DPU) where it is processed to develop visibility readings at up to three points along the runway (touchdown, midpoint, and rollout). This processed data, referred to as the RVR product, is distributed to the controller displays (CD) to be used by air traffic controllers in advising pilots regarding takeoff and landing operations. This processed data is also provided to the remote maintenance processing system. The data may also be engineering data available to external users.

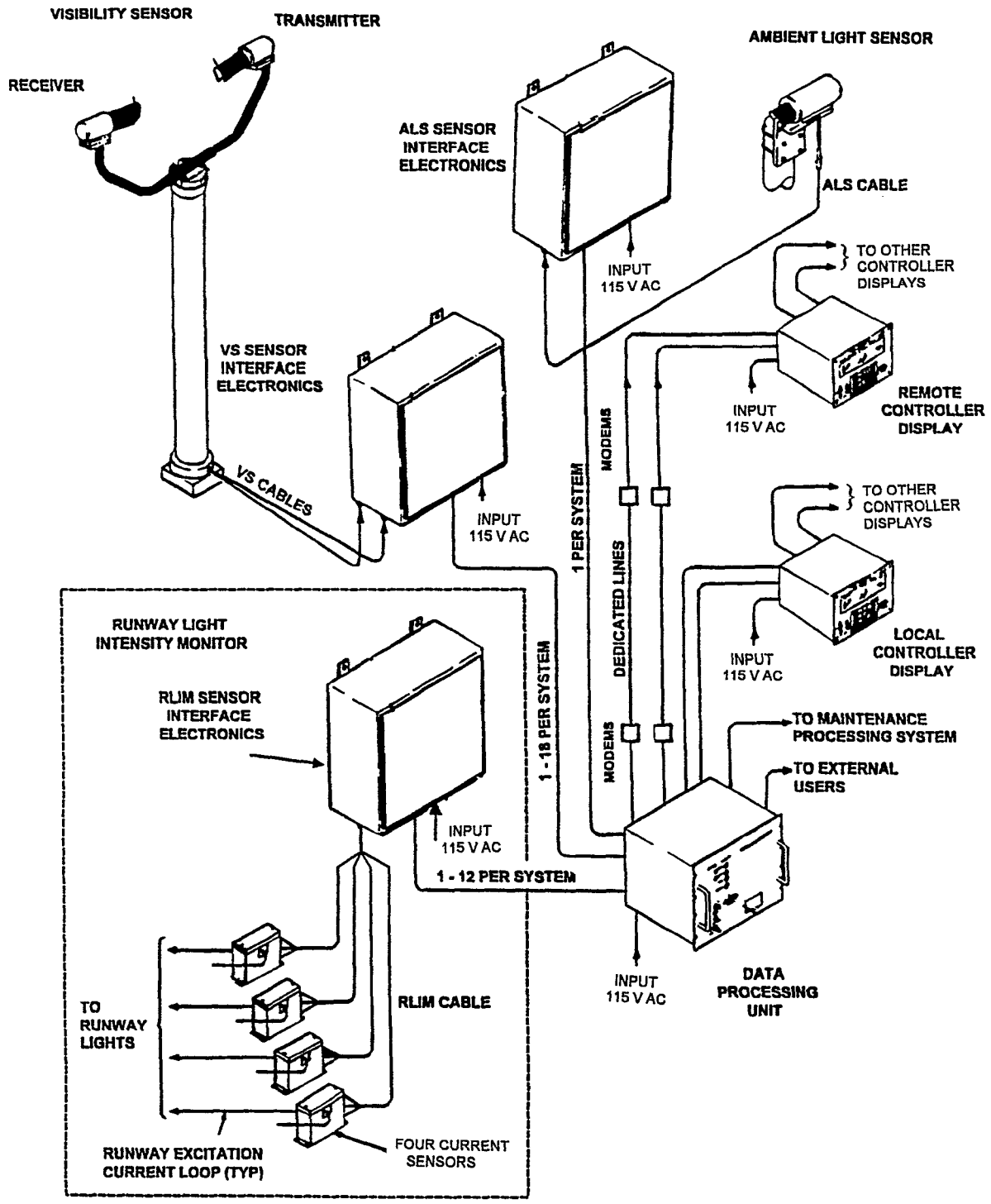
b. Visibility Sensor (VS). Extinction coefficient is defined as the sum of the absorption coefficient and the scattering coefficient for a medium that both absorbs and scatters radiation. The visibility sensor measures the extinction coefficient of light in the atmosphere. It does this by transmitting a narrow beam of light from an infrared light-emitting diode towards a scatter volume of air, from which, particles scatter the light into the receiver which has an infrared detector that develops a voltage proportional to the amount of light received by the detector. The transmitter and receiver are not aimed directly toward each other, but rather at an angle of about 42° from each other. If the air is perfectly clear, the transmitted infrared beam will pass by the receiver and no light will be detected. But if the air becomes hazy or if precipitation is present, the beam will be scattered; and some of the infrared light will strike and be detected by the receiver, the amount being proportional to the amount of haze or precipitation. The input to the receiver is passed through an infrared filter to reduce the effects of other light. To further minimize extraneous effects, the transmitted beam is modulated at 4 kHz and the receiver output voltage is passed through a 4 kHz filter.

c. Ambient Light Sensor (ALS). This sensor measures the incoming ambient light level through the use of a photodiode. It has a field of view of 6° and is aimed 6° above the north horizon. The sensor provides two output light-level ranges; one is a low range of 0 to 120 footlamberts (fl), the other is a high range of 0 to 12,000 fl. A photoptic filter and lens are incorporated to adjust the photodiode response to approximate the response of the human eye.

d. Runway Light Intensity Monitor (RLIM). The intensity of the runway center and edge lighting is controlled by constant current regulators. A current sensor (CS) in the RLIM monitors the current and provides an output that is essentially a square wave pulse train of 0 to 25 volts amplitude which represents the amplitude of the output current from the constant current regulators. The RLIM is usable with 6.6-amp and 20.0-amp regulators. The system software converts the pulse train into one of six level indications for presentation on the controller displays.

e. Sensor Interface Electronics (SIE) The SIE unit provides the interface between the sensor and the data processing unit (DPU). Each sensor requires its own SIE unit, and the SIE unit must be configured to support that particular type of sensor. The SIE unit acquires the sensor output signals, performs quality control checks, and formats the data for transmission to the DPU. It samples the raw data from the VS and RLIM every 2 seconds, and data from the ALS every 10 seconds. It also incorporates built-in test (BIT) features that provide the remote maintenance system (RMS) with continuous information on the operation and status of the sensor assemblies. In addition, the SIE unit provides dc voltages to its associated sensor, and interfaces with the maintenance data terminal (MDT) to enable a technician to perform onsite maintenance activities.

FIGURE 2-1. RVR SYSTEM FUNCTIONAL INTERFACE



f. Data Processing Unit (DPU). The DPU is a self-testable microcomputer that executes the data gathering, processing, and logging functions for the system. It also provides the capability to interface with various subsystems and with users through an external users port. The DPU gathers data from the SIE's, processes the data to develop the RVR product for each runway, and disseminates data to the various users. Also, the DPU initiates diagnostics in response to faults detected by the built-in tests (BIT's). It has a self-contained maintenance processing unit (MU) with its own microprocessor, battery-backed archived memory and real time clock. The MU archives system maintenance, performance and failure data and disseminates this data to the MPS. Failure data also goes to the CD's. Archived data can be retrieved to support accident/incident investigations. Only one of the processing units is active at a given time, the other remains on standby. However, the active unit communicates data to the standby unit at the end of each system cycle ensuring that the standby unit is kept updated and ready for immediate operation if needed.

g. Controller Display (CD). The controller display receives the RVR products from the data processing unit, performs error-check comparisons to ensure good data quality, then formats and displays the data. The CD maintains established limits and configuration in NVRAM. See figures 2-2, 2-3, and table 2-1. If the data exceeds established limits or if a failure or fault occurs, the CD initiates visual and/or audible alarms. The small arrow heads adjacent to the four-digit numbers show the trend of visibility change. Upward pointing arrows indicate an improvement and downward arrows indicate deterioration. The CD is controlled through a keypad and front panel switches. At periodic intervals or when initiated by the operator, the CD executes built-in tests (BIT's)

FIGURE 2-2. CD FRONT PANEL

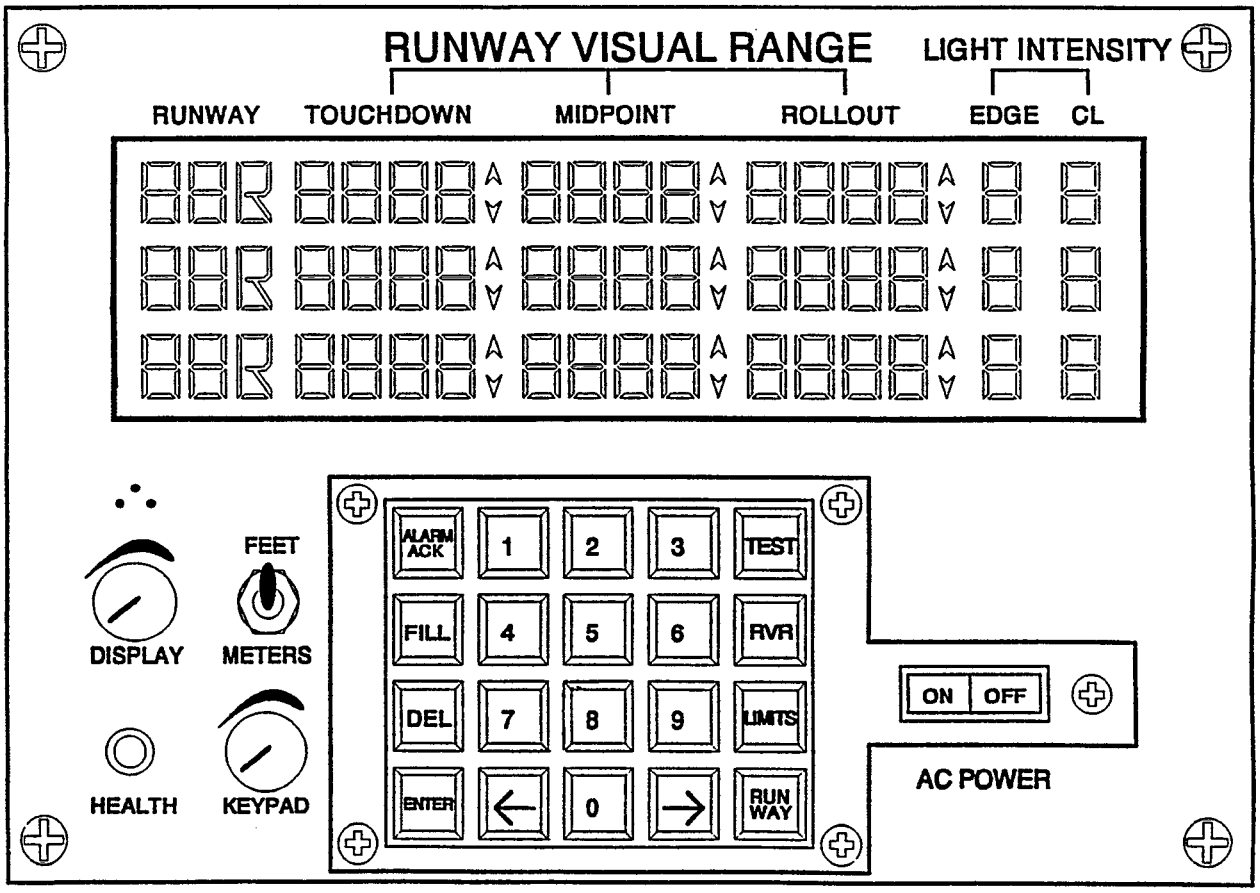
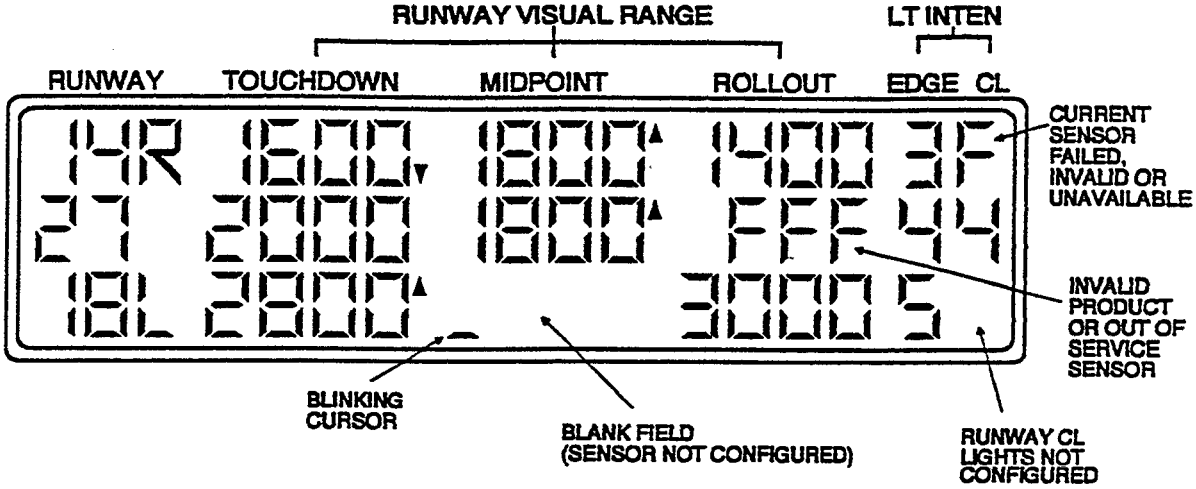


TABLE 2-1. CD CONTROLS AND INDICATORS

Control/Indicator	*Function*
AC POWER Switch	Circuit breaker - turns CD on and off by controlling primary power input.
Keypad Control	Controls the brightness of the keypad illumination.
Meters/Feet Switch	The setting of this switch determines whether the RVR output for touchdown, midpoint, rollouts, and the alarm thresholds are displayed in meters or feet.
Display Control	Controls the brightness of the CD display.
HEALTH LED (GRN/RED)	Green indicates that CD has passed all off-line BIT diagnostics, or red indicates failure of diagnostic. Indicates failure of CD or power loss if extinguished.
Display	Allows viewing of the RVR product for up to three runways simultaneously. Also displays the Low Visibility Alarm Threshold (LVAT) fields and status failure indications of the CD hardware.
Keypad	Enables an operator to interact with the CD to perform such tasks as selecting a runway to display its RVR output or setting the LVAT's for touchdown, midpoint, and rollout.

FIGURE 2-3. TYPICAL CD DISPLAY WITH RVR OUTPUT



to review CD operations for nonfatal failures. The CD utilizes high-contrast liquid crystal displays that are readable under lighting conditions from direct sunlight to full darkness.

h. Maintenance Data Terminal (MDT). The MDT is government-furnished equipment (GFE) and is not manufactured by Teledyne as a part of the Teledyne RVR system. However, it is compatible with the system and plays a vital role in testing and maintenance activities. When connected to the data processing unit the MDT allows the technician to perform maintenance functions at the DPU. These functions include status requests, product and archive data retrieval, system diagnostics, system initialization, and system reconfiguration. When connected to the sensor interface electronics (SIE), the MDT allows the technician to perform maintenance functions at the SIE, including status requests, calibrations, and diagnostics.

203.-299. RESERVED.

CHAPTER 3. STANDARDS AND TOLERANCES

300. GENERAL. This chapter prescribes the standards and tolerances for the runway visual range (RVR) system, type FA-10268, as defined and described in Order 6000.15. All key performance parameters and/or key inspection elements are clearly identified by an arrow (→) placed to the left of the applicable item.

301. REFERENCES. Unless otherwise indicated, references in this chapter refer to paragraphs in this order, or in the instruction book, TI 6560.17, Runway Visual Range System On-Site Requirements. For example, 331 refers to paragraph 331 of this order; 6.3.1 refers to paragraph 6.3.1 of the equipment instruction book.

302.-334. RESERVED.

Parameter	*Reference Paragraph*	*Standard*	*Tolerance/Limit*	
			Initial	*Operating*
→**335. DPU/SIE FAULT DIAGNOSTICS**	7.6.2, 7.6.3	Normal	Same as standard	Same as initial
→**336. PARAMETER VALUES**	511, 6.8.10	Normal	Same as standard	Same as initial
337. CONTROLLER DISPLAY PERFORMANCE CHECKS (CD BIT'S).[1]	6.2.2			
a. BIT No. 0		0000	≤5/week	Same as initial
b. BIT No. 1		0000	≤5/week	Same as initial
c. BIT No. 2		0000	≤5/week	Same as initial
d. BIT No. 3		0000	≤5/week	Same as initial
e. BIT No. 4		0000	≤5/week	Same as initial
f. BIT No. 5		0000	≤5/week	Same as initial
g. BIT No. 6		0000	≤5/week	Same as initial
h. BIT No. 7		0000	≤5/week	Same as initial
338. DPU VOLTAGES	6.3.6.3			
a. +5 V dc		+5 V dc	+4.75 to +5.25 V dc	Same as initial
b. –5 V dc		–5 V dc	–4.75 to –5.25 V dc	Same as initial

[1]The permissible number of nonfatal failures will be determined locally at commissioning.

STANDARDS AND TOLERANCES (Continued)

Parameter	Reference Paragraph	Standard	Tolerance/Limit Initial	Tolerance/Limit Operating
c. +12 V dc		+12 V dc	+11.4 to +12.6 V dc	Same as initial
d. –12 V dc		–12 V dc	–11.4 to –12.6 V dc	Same as initial
339. SIE VOLTAGES	6.3.6.4			
a. +5 V dc		+5 V dc	+4.81 to +5.225 V dc	Same as initial
b. –5 V dc		–5 V dc	–4.81 to –5.225 V dc	Same as initial
c. +12 V dc		+12 V dc.	+11.584 to +12.56 V dc	Same as initial
d. –12 V dc		–12 V dc	–11.584 to –12.56 V dc	Same as initial
* **e. Deice Heater Voltage**	514	49 V dc	≥33 V dc	Same as initial *
f. Battery Voltage	6.3.2.2	≥26 V dc	Same as standard	Same as initial
340. RLIM OUTPUTS	6.3.6.5			
a. Low Range Input (6.6 A).				
(1) Step 0		0.0 V ac	0.0 to 2.25 V ac	Same as initial
(2) Step 1		2.6 V ac	2.35 to 2.85 V ac	Same as initial
(3) Step 2		3.2 V ac	2.95 to 3.45 V ac	Same as initial
(4) Step 3		3.9 V ac	3.55 to 4.20 V ac	Same as initial
(5) Step 4		4.8 V ac	4.30 to 5.40 V ac	Same as initial
(6) Step 5		6.4 V ac	5.50 to 7.15 V ac	Same as initial

STANDARDS AND TOLERANCES (Continued)

Parameter	Reference Paragraph	Standard	Tolerance/Limit Initial	Tolerance/Limit Operating
b. High Range Input (20.0 A).				
(1) Step 0		0.0 V ac	0.0 to 2.25 V ac	Same as initial
(2) Step 1		8.2 V ac	7.35 to 8.95 V ac	Same as initial
(3) Step 2		10.0 V ac	9.05 to 10.95 V ac	Same as initial
(4) Step 3		12.5 V ac	11.05 to 13.90 V ac	Same as initial
(5) Step 4		15.5 V ac	14.00 to 17.00 V ac	Same as initial
(6) Step 5		20.0 V ac	17.10 to 21.95 V ac	Same as initial
→ **c. RLIM Indications**	6.5b(6)	No errors	Same as standard	Same as initial
341. ALS/SIE.				
a. Calibration	6.10.1 Table 2-3			
(1) High range gain (fl/V)		3000	Same as standard	Same as initial
(2) Low range gain (fl/V)		30	Same as standard	Same as initial
→ **b. Calibration Verification**	6.10.1.1 Table 2-3			
(1) Zero plug installed.				
* Corrected ambient light (fl)		0.0 fl	≤0.5 fl	Same as initial *

STANDARDS AND TOLERANCES (Continued)

Parameter	Reference Paragraph	Standard	Tolerance/Limit Initial	Tolerance/Limit Operating
(2) Plug removed (noon, sunny day).				
* (a) Corrected ambient light (fl).....		≥500 fl	Same as standard	Same as initial
(b) Window contamination (WC).....		0%	±3%	Same as initial
(c) WINDOW-CONTAM		0%	≤3%	Same as initial *
342. VS/SIE.				
a. Calibration.....	6.10.2			
(1) High range extinction coefficient		Value printed on plate	± 5%	Same as initial
(2) Low range extinction coefficient.....		Value printed on plate	± 3%	Same as initial
→ **b. Calibration Verification**	6.10.2.1			
(1) DPU/SIE communication.....		OK	Same as standard	Same as initial
(2) Low range extinction coefficient.....		Value printed on plate	±3%	Same as initial
(3) TX window contamination (TWC).....		0.0%	±3%	Same as initial
(4) RX window contamination (RWC)		0.0%	±3%	Same as initial
(5) High range extinction coefficient		Value printed on plate	±5%	Same as initial
(6) TX WINDOW CONTAM	7.6.4	0.0	≤3.0%	Same as initial
(7) RX WINDOW CONTAM	7.6.4	0.0	≤3.0%	Same as initial

STANDARDS AND TOLERANCES (Continued)

Parameter	Reference Paragraph	Standard	Tolerance/Limit Initial	Tolerance/Limit Operating
343. SOFT ALARMS	511, 6.8.10	No warnings	Same as standard	Same as initial
→ **344. RVR PRODUCT ACCURACY**	551	=reporting value	Within one reporting increment	Same as initial
345. PRODUCT LIMITS[1]	6.4.8			
a. VS Cross-Consistency Differential		0%	Within one reporting increment	Same as initial
b. SIE Link Msg Error Rate		0/hr	≤004/hr	Same as initial
346. SENSOR LIMITS[1]	6.4.8			
a. VS Sensor.				
(1) Low		0000	Same as standard	Same as initial
(2) High		0000	Same as standard	Same as initial
b. VS Sensor Standard Deviation.				
(1) Low		000	Same as standard	Same as initial
(2) High		0000	Same as standard	Same as initial
c. VS Sensor Consistently Low Value		0000	Same as standard	Same as initial
d. VS Sensor Unvarying Value		000	Same as standard	Same as initial
e. ALS Sensor.				
(1) Low		0000	Same as standard	Same as initial
(2) High		0000	Same as standard	Same as initial
f. ALS Sensor Standard Deviation.				
(1) Low		000	Same as standard	Same as initial
(2) High		0000	Same as standard	Same as initial

[1]When set to 000, the parameter is not checked.

STANDARDS AND TOLERANCES (Continued)

Parameter	Reference Paragraph	Standard	Tolerance/Limit Initial	Tolerance/Limit Operating
g. ALS Sensor Consistently Low Value		0000	Same as standard	Same as initial
h. ALS Sensor Unvarying Value.....		000	Same as standard	Same as initial
347. RVR SYSTEM PARAMETERS	6.4.9			
a. MPU DPU +5 V Soft Alarm.				
(1) High		520	Same as standard	Same as initial
(2) Low		481	Same as standard	Same as initial
b. MPU DPU –5 V Soft Alarm.				
(1) High		–481	Same as standard	Same as initial
(2) Low		–520	Same as standard	Same as initial
c. MPU DPU +12 V Soft Alarm.				
(1) High		1248	Same as standard	Same as initial
(2) Low		1154	Same as standard	Same as initial
d. MPU DPU –12 V Soft Alarm.				
(1) High		–1154	Same as standard	Same as initial
(2) Low		–1248	Same as standard	Same as initial
e. VS SIE TX WIND CONTAM.				
(1) Hard alarm high		20	Same as standard	Same as initial
(2) Soft alarm high		12	Same as standard	Same as initial
f. VS SIE RX WIND CONTAM.				
(1) Hard alarm high		20	Same as standard	Same as initial
(2) Soft alarm high		12	Same as standard	Same as initial
g. VS SIE RATE OF CHANGE ..... Hard Alarm High.		0000	Same as standard	Same as initial

STANDARDS AND TOLERANCES (Continued)

Parameter	Reference Paragraph	Standard	Tolerance/Limit Initial	Tolerance/Limit Operating
h. ALS SIE WIND CONTAM.				
(1) Hard alarm high		30	Same as standard	Same as initial
(2) Soft alarm high		15	Same as standard	Same as initial
i. ALS SIE RATE OF CHANGE.....		000	Same as standard	Same as initial
→ **348. SYSTEM TIME**	512, 582, 6.4.4	±2 seconds	Same as standard	±1 minute
349. SIE BATTERY TEST	513, 6.3.2.2	Normal operation for 3 minutes or longer	Same as standard	Same as initial
350.-399. RESERVED.				

CHAPTER 4. PERIODIC MAINTENANCE

400. GENERAL. This chapter establishes all the maintenance activities that are required for the Teledyne RVR system, Type FA-10268, on a periodic, recurring basis, and the schedules for their accomplishment. The chapter is divided into two sections. The first section identifies the performance checks (i.e., tests, measurements, and observations) of normal operating controls and functions which are necessary to determine whether operation is within established tolerances/limits. The second section identifies other tasks which are necessary to prevent deterioration and/or ensure reliable operation. Refer to Order 6000.15 for additional guidance.

401. REFERENCES. Entries in the reference column of sections 1 and 2 refer to either instruction book TI 6560.17, Runway Visual Range System On-Site Requirements, or this handbook. An instruction book reference is identified by a section and paragraph number; e.g., 6.8.10. A handbook reference is identified by a paragraph number only; e.g., 336.

402.-405. RESERVED.

SECTION 1. PERFORMANCE CHECKS

Performance Checks	*Reference Paragraph*	
	Standards and Tolerances	*Maintenance Procedures*
406. BIWEEKLY.		
a. Check system parameters using maintenance data terminal (MDT).	336, 343	511, 6.8.10
(1) MPU		
(2) DPU		
(3) ALS		
(4) VS		
(5) RLIM		
* **b.** Check DPU health LED's	NA	6.5d(1), (2), (3). (4)
c. Check system time	348	512, 6.4.4 *
407. QUARTERLY.		
a. Execute system diagnostics (MDT)	335	7.6.2, 7.6.3, 6.8.8

SECTION 1. PERFORMANCE CHECKS (Continued)

Performance Checks	Reference Paragraph: Standards and Tolerances	Reference Paragraph: Maintenance Procedures
(1) DPU		
(2) SIE		
(3) ALS		
(4) VS		
(5) RLIM		
b. Check limits	345, 346	6.4.8
* **c.** Verify ALS and calibrate if necessary	341	6.10.1.1, 6.10.1
d. Verify VS and calibrate if necessary	342	6.10.2.1, 6.10.2 6.10.2.2 *
e. Check RLIM operation	340c	6.5b(6)
408. SEMIANNUALLY.		
a. Test ALS SIE batteries under load *	349	513, 6.3.2.2 See Order 6980.25 for additional guidance *
b. Test VS SIE batteries under load *	349	513, 6.3.2.2 See Order 6980.25 for additional guidance *
c. Check SIE de-ice heater voltage	339e	514
409.-419. RESERVED.		

SECTION 2. OTHER MAINTENANCE TASKS

Maintenance Checks	Reference Paragraph: Standards and Tolerances	Reference Paragraph: Maintenance Procedures
* **420. AS REQUIRED.**		*

SECTION 2. OTHER MAINTENANCE TASKS (Continued)

Performance Checks	*Reference Paragraph*	
	Standards and Tolerances	*Maintenance Procedures*
a. Check ALS windows (Clean if necessary)	NA	6.3.1.2
b. Check VS windows (Clean if necessary)	NA	6.3.1.3
c. Clean CD glass (if necessary)	NA	6.3.5
421. QUARTERLY.		
a. ALS Sensors. Apply a new coat of spider paint (if necessary) to the sensor hood.	NA	6.3.1.2
b. VS Sensors. Apply a new coat of spider paint (if necessary) to all sensor hoods.	NA	6.3.1.3
c. Measure and record the following voltages on FAA form 6000-8.		
RLIM CS	340	6.3.6.5
422. SEMIANNUALLY.		
* **a.** Inspect SIE battery and battery compartment for leakage of acid, and clean as needed.	NA	6.3.2 6.3.2.3
b. Inspect all cables and cable connections for damage or corrosion, and repair as necessary.	NA	NA
423. AS REQUIRED Check the RVR product accuracy.	344	551
424. EVERY TWO YEARS Replace the SIE batteries.	NA	6.3.3 6.3.2.3 *

SECTION 2. OTHER MAINTENANCE TASKS (Continued)

Performance Checks	Reference Paragraph	
	Standards and Tolerances	*Maintenance Procedures*
* **425. EVERY FIVE YEARS** ..... Replace the DPU batteries.	NA	6.3.4
426.-427. RESERVED.		
428. WITHDRAWN BY CHG 2		
429.-499. RESERVED.		*

CHAPTER 5. MAINTENANCE PROCEDURES

500. GENERAL. This chapter establishes the procedures for accomplishing the various essential maintenance activities which are required for the Teledyne runway visual range (RVR) system, type FA-10268, on either a periodic or incidental basis. The chapter is divided into three sections. The first section describes the procedures to be used in making the performance checks listed in chapter 4, section 1. The second section describes the procedures for performing the tasks listed in chapter 4, section 2. The third section describes the procedures for performing special tasks, usually nonscheduled and not listed in chapter 4. Refer to Order 6000.15 for additional general guidance.

501. FAA FORM 6000-8 ENTRIES. Order 6000.15 contains policy, guidance, and detailed instructions for field use of FAA Form 6000-8, Technical Performance Record (formerly FAA Form 418-00), as applicable to the RVR system, type FA-10268. Entries shall be made in accordance with the instructions published in Order 6000.15. Figures 5-1, RVR Biweekly Performance Checks; 5-2, RVR Quarterly Performance Checks; and 5-3, RVR Quarterly Other Maintenance Checks are sample FAA Forms 6000-8 that show typical entries for normal and unsatisfactory conditions that may be encountered.

502. TEST EQUIPMENT REQUIRED. A list of tools, test equipment, and other materials required for the maintenance of the RVR system is given in Table 7-1, Tools and Equipment, in the instruction book, TI 6560.17.

503.-509. RESERVED.

SECTION 1. PERFORMANCE CHECK PROCEDURES

510. PERFORMANCE MEASUREMENTS. The performance check procedures given in section 6 of instruction book, TI 6560.17, Runway Visual Range System On-Site Requirements, Type FA-10268, are referenced in chapters 3 and 4, and will not be repeated here.

511. PARAMETER VALUES (SOFT ALARMS).

a. Object. The object of this procedure is to ensure that the parameter values are within the established operating limits.

b. Discussion. When a parameter is within the established operating limits, it will be shown as NORMAL in the status column of the parameter values page. If it exceeds the allowable tolerance or limit, it will be shown as a warning, indicating that corrective action is required.

c. Test Equipment Required. MDT.

d. Procedure.

(1) Connect the MDT to the DPU.

(2) Log on and display the MAIN MENU screen (figure 6-3).

(3) Select <P> for parameter menu (figure 6-16).

(4) When the parameters screen appears, select <V> for parameter values (figure 6-47).

(5) Parameter values appear.

(6) Select <N> to scan all pages for WARNINGS (inverse video) in the status column.

(7) If there is a warning, note the unit and value.

(8) Take the appropriate corrective action.

(9) Select <ESC> twice to return to main menu.

(10) Press <L> to logout.

FIGURE 5-1. RVR BIWEEKLY PERFORMANCE CHECKS

TECHNICAL PERFORMANCE RECORD — CONTINUATION OR TEMPORARY RECORD/REPORT FORM

FACILITY: ATCT (ATCT, FSS, ARTCC, VOR, LOC, ETC.)

DATES: FROM TO

SUPERVISOR'S SIGNATURE: Wink Clogonoski

LOCATION: OKLAHOMA CITY, OK (CITY, STATE, AIRPORT, OTHER)

EQUIPMENT: RVR (A/G, DF, COMPONENTS, ETC.)

FREQ.:

DATE 1997	TIME UTC	SYSTEM PARAMETERS: MPU	DPU	ALS	VS	RLIM	CD OPERATION	DPU HEALTH LED'S	SYSTEM TIME (SEC)	REMARKS	INITIALS
NOMINAL		✓	✓	✓	✓	✓	✓	✓	0		
5-1	1500	✓	✓	✓	✓	✓	✓	✓	+2		JD
5-16	1600	✓	✓	✓	✓	✓	✓	✓	+6		JD

SAMPLE FORM

FAA Form 6000-8 (3-76) FORMERLY FAA FORM 416-24

U. S. GOVERNMENT PRINTING OFFICE 1983-673.913/574

FIGURE 5-2. RVR QUARTERLY Y PERFORMANCE CHECKS

TECHNICAL PERFORMANCE RECORD — **CONTINUATION OR TEMPORARY RECORD/REPORT FORM**

FACILITY: ATCT (ATCT, FSS, ARTCC, VOR, LOC, ETC.)
DATES: FROM TO
SUPERVISOR'S SIGNATURE: Wink Clogonoski
LOCATION: OKLAHOMA CITY, OK (CITY, STATE, AIRPORT, OTHER)
EQUIPMENT: RVR (A/G, DF, COMPONENTS, ETC.)
FREQ.:

DATE 1997	TIME UTC	RLIM LOW RANGE 6.6A (Vac) STEP 0	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	RLIM HIGH RANGE 20.0A (Vac) STEP 0	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	ALS CHECKS AMB. LIGHT ZERO PLUG (fl)	AMB. LIGHT SUNNY (fl)	WC (%)	VS CHECKS DPU Communication	LOW EXT. COEF. (%)	TWC (%)	RWC (%)	HIGH EXT. COEF. (%)	REMARKS	INITIALS
NOMINAL		0.0	2.6	3.2	3.9	4.3	6.4	0.0	8.2	10.0	12.5	15.5	20.0	0.0	≥500	0	OK	± 3	0	0	± 5		
5-1	1600	0.1	2.6	3.3	3.9	4.7	6.1							0.0	550	1	OK	0	0	0	0		7ID
8-1	1600	0.1	2.6	0.0																		REPLACE SENSOR	7ID
		0.1	2.6	3.2	3.9	4.7	6.2							0.0	550	1	OK	1	1	1	0		7ID

NOTE: THE FACILITY WILL HAVE EITHER THE RLIM LOW RANGE 6.6A (Vac) OR THE RLIM HIGH RANGE 20.0A (Vac) ENTRIES BUT NOT BOTH.

SAMPLE FORM

FAA Form 6000-8 (3-76) FORMERLY FAA FORM 416-24

U. S. GOVERNMENT PRINTING OFFICE 1983-673.913/574

FIGURE 5-3. WITHDRAWN--CHG 1

512. SYSTEM TIME VERIFICATION.

a. Object. The object of this procedure is to verify that the system time is within the allowable limits specified in chapter 3 of this handbook.

b. Discussion. All figures referred to in this procedure are located in the instruction book TI 6560.17, Runway Visual Range System On-Site Requirements.

c. Test Equipment Required. MDT.

d. Procedure.

(1) Log-on the MDT at the DPU and from the Main Menu (figure 6-3) select <S> for Status (figure 6-30).

(2) Observe the update rate multiplier number. If the number is zero (Update Rate: 0 (* 10 sec)) skip to step (7). If the update rate multiplier is not zero, proceed with step (3).

(3) Use <ARROW> to position the cursor under the Update Rate multiplier number.

(4) Type in zero <0>.

(5) Press <ENTER> to accept the data.

(6) With Update Rate: 0 (* 10 sec) the TIME:hh: mm:ss will be updated every two seconds, approximately. Compare the system time with the Julian/Coordinated Universal Time (UTC).

(7) If the system time is within operating tolerance of the UTC, select <ESC> to return to the Main Menu, then press <L> to logout.

(8) If the system time is not within operating tolerance of the UTC, take appropriate action to correct it. Refer to paragraph 582, below.

513. SIE BATTERY TEST.

a. Object. The object of this procedure is to verify the condition and performance of the SIE batteries.

b. Discussion. This procedure shall be performed only after the SIE has been operating normally on ac power, uninterrupted, for at least 12 hours. It has been noted during moderate temperatures that when a battery is becoming weak, the top of the battery housing feels warmer than the top of the EMI housing beside it. This can be a quick check, made during other maintenance work, that might detect a weakening battery and indicate that additional checks are necessary.

c. Test Equipment Required. MDT and Volt-Ohm Meter (VOM).

d. Procedure.

(1) With the ac power switch and battery switch both ON (normal operating position), verify that the EMI housing ac power lamp is illuminated. Verify that the controller CCA (2A2) health LED is illuminated. Verify that the power supply (2A3PS1) health LED is illuminated. For VS SIE or ALS SIE, verify that the personality module (2A5) sensor heater voltage health LED is illuminated.

* (2) Turn the SIE power switch OFF for approximately 10 minutes. Verify that the controller CCA * health LED remains illuminated. Verify that the power supply health LED remains illuminated. If the power supply health LED stays ON, verify that the controller health LED does not go OFF either momentarily or permanently.

(3) Connect the MDT and perform diagnostics in accordance with TI 6560.17, paragraph 7.6.4. Verify that the AC POWER parameter is FAIL (power supply is running on battery) and that the BATTERY CONDITION parameter is OK (battery charge is not low). Otherwise perform corrective maintenance in accordance with paragraph 7.5.1g.

(4) Turn the SIE battery switch OFF.

(5) Using voltmeter, connect the positive lead to battery housing subassembly 2A4TB1-3. Connect the negative lead to 2A4TB-4. Verify that the battery voltage * is greater than or equal to 24.0 V dc. If the voltage is not * within tolerance, refer to TI 6560.17, paragraph 7.5.1g.

(6) Turn the ac power switch ON and turn the battery switch ON.

(7) With the voltmeter still connected as in step (5) measure the battery float voltage. If the voltage is not
* ≥25Vdc refer to TI 6560.17, paragraph 7.5.1g. *

(8) Remove voltmeter connections and return the SIE to normal operation.

514. SIE DEICE HEATER VOLTAGE.

a. Object. The object of this procedure is to verify the SIE de-ice heater voltage.

b. Discussion. This procedure is performed to verify the presence and amplitude of the SIE deice heater voltage.

c. Test Equipment Required. VOM.

d. Procedure.

(1) With the ac power switch and battery switch both ON (normal operating position), verify that the EMI housing ac power lamp is illuminated. Verify that the controller CCA (2A2) health LED is illuminated. Verify that the power supply (2A2PS1) health LED is illuminated. For VS SIE or ALS SIE, verify that the personality module (2A5) sensor heater voltage health LED is illuminated.

(2) Using a voltmeter, connect the negative lead to 2A5TP1 (GND). Connect the positive lead to 2A5F1 (heater voltage). Verify that the dc voltage is within specified tolerances.

(3) Remove the voltmeter connections and return the SIE to normal operation.

* **515. WITHDRAWN--CHG 1**

*

516.-549. RESERVED.

SECTION 2. OTHER MAINTENANCE TASKS PROCEDURES

550. MAINTENANCE PROCEDURES. Maintenance and checkout procedures given in instruction book TI 6560.17, adequately describe the procedures for calibration and maintenance of the RVR equipment. They are referenced in chapters 3 and 4 and will not be repeated here.

* **a.** The calibration plate used to calibrate the VS is made of Plexiglas. The bottom layer (which scatters the light) is acrylic acolyte 020-4. The high and low side hole pattern is silk screened onto the plate and permits a set amount of the scattered light to be received by the VS receiver. The top layer is clear Plexiglas.

b. Each time the calibration plate is used, the technician should perform a visual inspection of the plate.

(1) If the plate is dirty it should be cleaned using a soft cotton cloth and a glass cleaner (preferably without ammonia). Tissue paper will scratch the Plexiglas. Do not submerge the plate in water.

(2) If the milky colored bottom layer of acrylic acolyte has darkened around the edges, the calibration plate's extinction coefficients must be re-verified. Return the calibration plate to the logistics center.

(3) Has the clear Plexiglas top of the calibration plate become sufficiently scratched so as to potentially alter the extinction coefficients calibration numbers?, If so, the calibration plate should be returned for verification of its extinction coefficients.

(4) Is the calibration plate cracked? If so, the calibration plate should be replaced. *

551. RVR PRODUCT ACCURACY.

a. Object. This procedure provides a comparison of the instrumentally derived RVR product with the actual visibility as determined by observing the runway lights during limited visibility.

b. Test Equipment Required. Two-way communications.

c. Conditions. Perform this procedure when visibility is less than 1 mile, stable, uniform in all directions, and the runway lights are ON.

d. Procedure.

(1) Select an observation site near (or on the runway, if possible) at the midpoint visibility sensor.

(2) Count the runway lights visible in each direction along one side of the runway. If there is much arch in the runway it may be helpful to have an elevated observation point (stepladder or pickup).

(3) Add the two numbers obtained above and divide by 2 to obtain the average value.

* (4) Multiply the average value by the distance between runway lights at that airport to obtain the observed visibility. The maximum runway light spacing is 200 feet and 200 feet is the distance between runway lights at most airports, however, there are airports where the distance between runway lights is less than 200 feet. *

(5) Compare the observed visibility with the RVR product being displayed on the CD at that time.

(6) Ensure that the RVR product is within the tolerance specified in chapter 3.

* (7) Reportable RVR values are;

0000	1000	3500
0100	1200	4000
0200	1400	4500
0300	1600	5000
0400	1800	5500
0500	2000	6000
0600	2200	6500
0700	2400	
0800	2600	
	2800	
	3000	

*

552.-579. RESERVED.

SECTION 3. SPECIAL MAINTENANCE PROCEDURES

580. INCIDENT DATA COLLECTION AND PRESERVATION.

a. Object. The object of this procedure is to declare an incident and gather data showing visibility conditions along the runway over a period of time covering some event such as an aircraft accident, to preserve the data, and to verify the proper operation of the RVR equipment.

b. Equipment Required. An operating RVR system, and maintenance data terminal (MDT).

NOTE: If this procedure is being performed pursuant to an aircraft accident in the area, a second technician or supervisor shall be present as an observer. Referenced figures are in TI 6560.17, Runway Visual Range System On-Site Requirements.

c. Procedure.

(1) Within 5 hours after an accident:

(a) Log-on the MDT at the data processing unit (DPU).

(b) From the main menu (figure 6-3) select <O> to display the control screen (figure 6-4).

(c) Press <ENTER> once to raise security level to 2.

(d) Press <ESC> to return to the main menu.

(e) Press <A> to display the archive data menu (figure 6-33).

(f) Press <ENTER> to set current date/time. This will be the declared incident time.

(g) Press <ARROW> to select <Enable Overwrite of Older Incident Archive>.

(h) Press <Y> for yes.

(i) Press <ENTER>.

(j) Press <Y> for yes. The cursor moves to <Declare Incident>.

(k) Press <ENTER>.

(l) Press <Y> for yes.

NOTE: The status of the incident archive data file being used is set to 1 to indicate busy. Thirteen hours of historical RVR product data, running from 12 hours before to 1 hour after the incident was declared, is put into the Incident-1 or Incident-2 archive data file. The data is in three segments. The oldest segment includes 7 hours of data in 5-minute increments starting 12 hours before the incident was declared. This is followed by 5 hours of data in 1-minute increments immediately preceding the time the incident was declared. One hour of data in 5-minute increments immediately following the time the incident was declared is added. At the completion of 1 hour (5-minute data), the status of the incident file is set to 2, indicating that the file is filled.

(m) From the archive data menu use <ARROW> to position the cursor, and enter the date/time of the accident. Select, as appropriate, <A> to display Incident-1 or <B> to display Incident-2 archive data.

NOTE: The Date/Time at the top of each screen shows the time (Julian/Coordinated Universal Time (UTC)) of that particular data record. Determine the Julian day and UTC time of the accident. The RVR product data immediately preceding and following the accident can be very important in the accident investigation that follows each incident.

(n) Press <N> to advance in time or press <P> to go back in time to locate the data records immediately preceding and following the time of the accident. Record this data.

(2) Between 5 and 12 hours after an accident:

NOTE: The data obtained for the time of the accident (over 5 hours previously) is in 5-minute increments, since the 1-minute increment window has passed that time.

(a) Perform the steps in subparagraph (1).

(b) Preserve this data for future reference.

(3) Beyond 12 hours after an accident has occurred:

NOTE: No 1-minute or 5-minute increment data at the time of the accident is available. However, data collected at hourly intervals is stored for 15 days and can be retrieved within that time.

(a) Log-on the MDT at the DPU

(b) From the main menu select <A>, the archive data menu.

(c) When the archive data menu is displayed, use <ARROW> to position the cursor and enter the date/time of the accident. Press <H> to select the 1-hour product archive data screen.

NOTE: The Date/Time at the top of each screen shows the Julian day and UTC for that data record.

(d) Press <N> to advance in time or press <P> to locate the data records immediately preceding and following the time of the accident.

(e) Record this data.

(4) Verify the operational status of the RVR equipment:

NOTE: Do not make any changes or adjustments to the equipment at this time.

(a) Check the facility maintenance log (FAA Form 6030-1) and determine which units of the system were in operation at the time of the accident. If any unit substitutions have been made since the accident, data on both units are recorded.

(b) Check all certification parameters and record the results on the official facility records (Technical Performance Record, FAA Form 6000-8, or Facility Maintenance Log, FAA Form 6030-1). Record any other data or information considered necessary or helpful in establishing the operational condition of the equipment at the time of the accident.

(c) Note and record on FAA Form 6030-1, Facility Maintenance Log, any physical, electrical, or electronic conditions that are abnormal.

(d) Note and record on form 6030-1 the general weather conditions such as fair and hot, ice storm, foggy, et cetera.

(e) Certify the entries made on forms 6000-8 and 6030-1. Also have an observer, another electronic technician or the supervisor, certify the entries, including date and time of entry.

(f) If the system was known to be operating on standby power at the time of the accident, a complete set of data, as indicated above, is recorded while operating on standby power.

(g) If the system meets certification requirements, make a certification entry in the Facility Maintenance Log.

(h) After all of the above data has been recorded, and the system does not meet certification requirements, make any adjustments or repairs necessary to meet certification requirements, and make an appropriate entry in the Facility Maintenance Log.

(i) Review the forms 6030-1 and 6000-8 and compile all data pertinent to the accident. Provide your supervisor with this information.

581. RETRIEVING ARCHIVE DATA AND SAVING TO DISKETTE.

a. Object. The object of this procedure is to retrieve archive data and save it on a diskette for future analysis.

b. Discussion. This procedure provides a method of saving archived data on diskette so the data will be permanently stored for future dissemination to interested parties.

c. Test Equipment Required. Data terminal with telecommunication program (i.e., Procomm Plus).

d. Procedure.

(1) Logon the RVR system at the DPU.

(2) From the main menu (figure 6-3) select <O> to display the control screen (figure 6-4).

(3) Press <ENTER> once to raise security level to 2.

(4) Press <ESC> to return to main menu.

(5) Press <A> to display the archive data menu (figure 6-33).

(6) Position cursor to the asterisk(*) in the upper left corner of the screen and press <ENTER>.

(7) Using the <arrow> keys, position the cursor to Dump Archive. Change N to Y. Press <ENTER> and press <Y> to the prompt asking are you sure?

(8) In Procomm Plus enter <ALT F1> to turn log ON. Enter a <NAME> for the file. Press <ENTER>.

(9) Use the cursor to select the product archive data to be dumped (O = 1 min, F = 5 min, H = 1 hour). Press <ENTER> and wait for data to stop scrolling on the screen.

(10) Press <ALT F1> to turn the log OFF.

(11) View the file by pressing <ALT V> and entering the <NAME> assigned in step (8).

(12) Copy the file onto a blank formatted diskette.

582. SYSTEM TIME CORRECTION.

a. Object. The object of this procedure is to set the system time to meet the requirements specified in chapter 3.

b. Discussion. If only a minor correction is needed (i.e., minutes and seconds), steps 6 through 9 may be omitted. Position the cursor over the minutes field by use of the <ARROW> key and proceed to step 10, below.

c. Test Equipment Required. MDT.

d. Procedure.

(1) Logon the MDT at the DPU and from the main menu (figure 6-3) select <O> for Control Screen (figure 6-4).

(2) Press <ENTER> twice to raise the security level to 3.

(3) Press <ESC> twice to return to the main menu.

(4) Select <C> for Configuration Menu (figure 6-8).

(5) Select <D> for Date/Time Screen (figure 6-9).

(6) Use <ARROW> to position the cursor over the year field.

(7) Type in the last two digits of the calendar year (i.e., 97 for 1997). Press <ENTER> to accept this data and move the cursor to the Julian day field.

(8) Type in the Julian day (i.e., 040 for Feb. 9). Then press <ENTER> to accept this data and move the cursor to the hour field of TIME.

(9) Type in the hour in UTC. Press <ENTER> to accept this data.

(10) Move the cursor to the minute field and type in a number that is 2 minutes ahead of the present UTC.

(11) Press <ENTER> to accept this data and to move the cursor to the seconds field.

(12) Type in two zeros (00).

(13) Press <ENTER> to accept this data and to move the cursor to the *Execute Time Change symbol.

(14) Press <ENTER>, wait until 2 seconds before the UTC time selected in step (10) above, then press <Y> to confirm.

(15) Press <ESC> twice to return to main menu.

(16) Verify the system time.

583. SYSTEM CERTIFICATION.

a. Object. The object of this procedure is to ensure that the RVR system is providing, or is capable of providing, its intended services.

b. Discussion. Part of this procedure must be accomplished at the sensors and the other part accomplished at the DPU. All references are to TI 6560.17.

c. Test Equipment Required. MDT and calibration kit, manufacturer part number 470R-7003.

d. Procedure.

(1) Clean the ALS window and verify the ALS calibration per paragraph 6.10.1.1.

(2) Clean the VS windows and verify the calibration of each visibility sensor per paragraph 6.10.2.1.

(3) Verify that all of the DPU front panel health LED's are illuminated and that the active LED is illuminated for the PPU (A or B) that is selected by the PPU select switch.

(4) Check the equipment status:

(a) Logon the MDT at the DPU, and from the main menu (figure 6-3), select <S> for the status screen (figure 6-30).

(b) Verify that the status of each of the following units is as indicated:

1	MPU	On-line-auto
2	Selected PPU	On-line-auto
3	Standby PPU	Hot-standby
4	All configured SIE's	On-line-auto

(c) Change the PPU select switch to the other position, and repeat steps (3) and (4)(b).

(5) Check all monitored parameters:

(a) From the main menu (figure 6-3), select <P> for parameters (figure 6-16), then <V> for values (figure 6-47).

(b) Verify the condition listed below on each of the following units: MPU, active PPU, standby PPU, and all configured SIE's.

1	Availability.....	On-line Auto (hot standby for the standby PPU)
2	Faulty LRU..... (Most Likely)	None
3	All other parameters	Normal (or not monitored)
4	Status Column	No LRU's listed

(c) If any warnings or alarms are observed, take action as necessary to clear them.

(6) Check the operation of the runway light intensity monitor (RLIM).

(a) From the main menu (figure 6-3), select <D> for the data menu (figure 6-19), select <S> for the sensor data menu (figure 6-21), select <A> for the sensor data for all sensors screen (figure 6-26).

(b) Verify that the RLIM indicates the correct runway light intensity on all steps.

(7) Make an appropriate certification entry in the Facility Maintenance Log, FAA Form 6030-1 or 6030-2.

584. - 599. RESERVED.

APPENDIX 1. CERTIFICATION REQUIREMENTS

TABLE 1. TELEDYNE RVR SYSTEM, TYPE FA-10268

Service	*Certification Parameter*	*Reference Paragraph STDS and TOL/Limits*
Assessment of runway visibility	1. System Parameters	336, 347
	2. Equipment Status	335
	3. RLIM Operation	340c
	4. ALS/SIE Calibration Verification	341b
	5. VS/SIE Calibration Verification	342b

NORMAL CERTIFICATION INTERVAL: Quarterly.

MAXIMUM CERTIFICATION INTERVAL: 120 days.

PERSON RESPONSIBLE FOR CERTIFICATION: Electronics technician (as assigned on RVR).

CERTIFICATION ENTRY IN FACILITY MAINTENANCE LOG: RVR Certified.

Memorandum

U. S. Department
of Transportation

Federal Aviation Administration

Subject: INFORMATION: Suggested improvements to Order 6560.31, Maintenance of Runway Visual Range (RVR) Equipment, Type FA-10268

Date:

From: _____
Signature and Title

Reply to Attn. of: _____
Facility Identifier
AF Address

To: Manager, National Airway Systems Engineering Division, AOS-200

Problems with present handbook.

Recommended improvements.

CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

6560.31
CHG 1

4/24/2002

SUBJ: MAINTENANCE OF RUNWAY VISUAL RANGE (RVR) EQUIPMENT TYPE FA-10268

1. PURPOSE. This change revises the parameters and maintenance intervals for Teledyne's RVR Type FA-10268. This directive implements Configuration Control Decision (CCD) No. N23241, Update Maintenance Handbook Order 6560.31.

2. DISTRIBUTION.

a. This directive is distributed to selected offices and services within Washington headquarters, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, regional Airway Facilities divisions, and Airway Facilities field offices having the following facilities/equipment: RVR, Type FA-10268.

b. An electronic version and distribution report of this directive is available on an Intranet site located at **http://aos-ext.amc.faa.gov/** under the "Technical Documentation" heading.

c. To obtain additional hard copies of this publication, contact Printing & Distribution, AMI-700B, at (405) 954-3771.

3. DISPOSITION OF TRANSMITTAL. Retain this transmittal.

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		12 thru 14	4/24/2002
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		23	4/14/1999
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Wed Apr 24 12:58:34 2002

Gregg W. Dvorak
Program Director for Operational Support

Distribution: Selected Airway Facilities Field and Regional Offices, ZAF-605

Initiated By: AOS-240

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CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

6560.31
CHG 2

12/15/2004

SUBJ: MAINTENANCE OF RUNWAY VISUAL RANGE (RVR) EQUIPMENT TYPE FA-10268

1. PURPOSE. This change eliminates the requirement to return the RVR calibration plate for extinction coefficient verification. This directive implements Configuration Control Decision (CCD) No. N25412, Change the Calibration Plate Re-verification Interval in Order 6560.31.

2. DISTRIBUTION.

a. This directive is distributed to selected offices and services within Washington headquarters, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, regional Airway Facilities divisions, and Airway Facilities field offices having the following facilities/equipment: RVR 47AM Teledyne Type FA-10268.

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for Richard A Thoma
Director for Technical Operations Support

Distribution: 47AM

Initiated By: Navigation and Landing Branch

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

CHANGE 3
6560.31

Effective Date:
09/28/2006

SUBJ: MAINTENANCE OF RUNWAY VISUAL RANGE (RVR) EQUIPMENT TYPE FA-10268

1. PURPOSE. This change adds a reference paragraph from technical instruction book, TI 6560.17, Runway Visual Range System On-Site Requirements to chapter 4. This directive implements Configuration Control Decision (CCD) No. N30769, RVR Type FA-10268 Battery Box Leak.

2. DISTRIBUTION.

a. This document is made available to sites with this Facility, Service, and Equipment Profile (FSEP): RVR.

b. Administrative offices do not receive printed copies since 2004. Documents and reports are available at **http://nas.amc.faa.gov/** under "Technical Documentation".

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for Richard A. Thoma
Director, Safety and Operations Support

Distribution: 47AM **Initiated By:** AJW-143