The easy way to an efficient

SIGN AUDIT & RECORDS PROGRAM

Part of Lumacurve's
Airfield Sign Management Program

LUMACURVE®
AIRFIELD SIGNS

WHY DO IT

- Enjoy **efficiencies!** Save time, money and headaches.

- **Eliminate confusion** among your crew!
  "Which sign needs maintenance?" "Where it is?" "What should be ordered?"

- **Assemble diagnosis** based on service history.

- Be **better prepared** for FAA inspectors.

- Plan **preventative maintenance** instead of reacting to 'fires'.

WHAT FAA REQUIRES

- Maintenance Records (3.2),

- Preventive Maintenance Program (3.3)

- Reference Library (3.5)

As part of FAA Maintenance of Airport Visual Aid Facilities AC 150/5340-26

They also require the following maintenance of your airfield signs:
- Semi-annual Cleaning and Inspection (5.4.1)
- Semi-annual Current Checks (5.4.3)

OUR SOLUTION

The Lumacurve : *"Airfield Sign Audit & Records Program"*

- Master sign records to capture maintenance history
- High-visibility sign numbering system
- Airfield Sign Map *(to reference and plan maintenance)*
- Maintenance Library
- Annual Inspection Plan & Schedule of Maintenance

How the program works

1. Prepare Today

Assess the following:

- Do you have numbers on your signs for reference in the field? *If no, call us*
- Do you have accurate electrical date nameplates on each sign? *If no, call us*
- Does maintenance have a current map of the airfield?

Put together a plan:

- Schedule the airfield signs "Field Audit"
- Assign the 2 person crew

2. Perform the Field Audit

For each sign, the following will be performed *(allow roughly 10 minutes per sign)*:

- Create "Master Sign Record"
- Perform inspection & complete "Sign Inspection Log"
- Mount high-visibility sign numbers
- Mount electrical data nameplates

3. Set up the Shop

Hang large airfield reference map *(with accurate sign locations)*

Create 3 maintenance binders *(your "binders" & "inboxes" may be electronic)*

- "Sign Records" binder
- "Repair Procedures" binder
- "Completed Work Orders" binder

Create 2 inboxes

- "Work Orders" Inbox
- "Daily Assignments" Inbox

What you need

- Blank copies of Sign Record form   *(page 4)*
- Copies of Audit Instructions for Crew   *(page 3)*
- High-visibility Sign Numbers   *(Order in advance)*
- Electrical Data Nameplates*
- Airfield reference map**   *(large scale for wall mounting)*
- Adhesive labels   *(For tagging sign ID#s on map)*
- 3-ring binders   *(qty 3)*
- Folders   *(qty 2)*

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*Nameplates are now engraved. Older signs had less permanent stickers or labels.
**Connect us to your engineer, we'll help get a current large format map of your airfield.

Allow 10-15 minutes per sign with a crew of 2. One crew member creates the sign records and performs the inspection while the second member attaches the sign numbers and electrical data nameplates. (if necessary)

CREW MEMBER #1

Create a Sign Record & perform a Sign Audit

1.) Create a Sign Record

- Complete sign configuration section
- Document sign legend, Front & Back
- Note sign # and electrical circuit number

2.) Perform Sign Inspection

EXTERIOR OF SIGN
- Evaluate panel fading *(per Faded Panel Guide)*
- Visual inspection of exterior

INTERIOR OF SIGN
- Remove interior debris and wipe down
- Visual inspection of interior
  (Wiring & Electrical components)
- Record input amperage to controller
  (At low & high regulator steps)
- Record output voltage to lamps
  (LED, XTL & LOVA systems)

Sign Record with Maintenance Log Binder

## CREW MEMBER #2

Attach Sign Numbers & Electrical Data

1.) Attach Sign Numbers

- Mount sign ID number *(black on yellow, see below)*
- Document or verify accuracy of Sign ID Number on map.
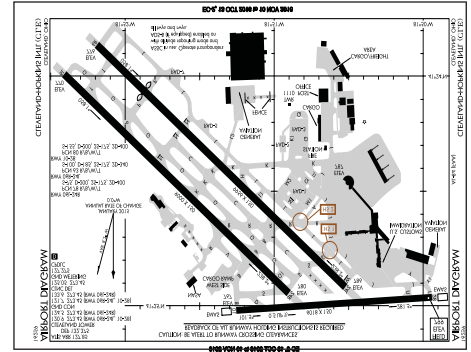
2.) Attach Electrical Data Nameplate

- Mount electrical data nameplate *(see below)*
- Reconcile electrical data with the sign record
- Place form into Sign Records 3-Ring binder
- Assist with completion of Sign Audit

Electrical Data Nameplate:
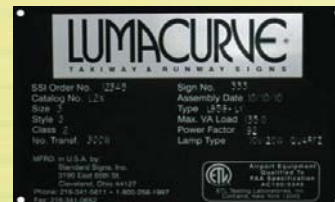
Sign ID Number:

Assemble these Resources

Many airports are moving toward electronic documents and maintenance records. In an effort to convey these concepts in the simplest terms, we have described the program with paper records that are retained in binders. We're hoping that these program concepts can still provide a helpful framework as you move toward electronic record keeping.

Folder #1 *(or Inbox)* **:** *"Maintenance Alerts"* - inbox for all required maintenance

Folder #2 *(or Inbox)***:** *"Today's Assignments"* - maintenance scheduled today

Binder #1: *"Sign Records & Maintenance Logs"*

- ❑ A Master Sign Record, Maintenance Log & Inspection Log must be created for each sign
- ❑ Divide & group sign records by runways or circuits using your map
- ❑ Maintenance & repairs will be documented in Maintenance Log
- ❑ Semi-annual inspections are logged in the Inspection Log

Binder #2: *"Repair Procedures"*

- ❑ Repair procedures & troubleshooting documents
- ❑ Compilation of using reference materials to benefit the crew

Binder #3: *"Complete Work Order"*

- ❑ Completed work orders will go in this binder
- ❑ An entry in the sign maintenance log must be entered as well
- ❑ Becomes an archive for anyone to review

Large Scale Airfield Reference Map

Mount on a wall in a central area where daily maintenance is discussed and use to reference locations & access to fixtures needing repairs.

When Repairs are Required

All airfield maintenance departments are different. The following concepts should be adapted to work within your current system and staffing circumstances.

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1) Create Work Order *(operations personnel)*
- Location of sign on map is circled
- Sign ID# is documented
- Required maintenance is documented
- Work Order is placed in Maintenance Alerts folder for evaluation

2) Schedule Repairs *(crew chief)*
Prioritized then placed into *"Today's Assignments"* inbox.

3) Review Work Orders *(crew member)*
- Consults sign records history for previous symptoms or repairs
- Reviews *"Repair Procedures"* binder *(if unsure)*
- Refers to wall map for precise sign location *(and planning for multiple items)*
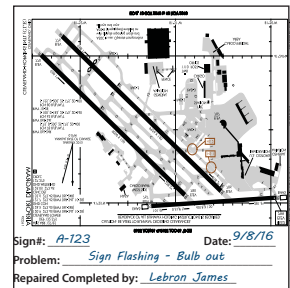
4) Perform Repairs

5) Record Maintenance
- Record in *"Signs Records"* binder *(under individual sign maintenance logs)*
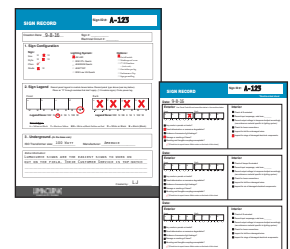
6) File Completed Work Order(s)
- Record in *"Completed Work Orders Reports"* binder

Sign ID #: _____

Creation Date: _____   Electrical Circuit #: _____

1. Sign Configuration

Sign:

Size: ☐1   ☐2   ☐3

Style: ☐2   ☐3   ☐5

Class: ☑

Mode: ☐2   ☐3

Lighting System:

☐ 4W LED

☐ 20W XTL Quartz

☐ 45W/EXM Quartz

☐ 45W/T10P

☐ 20W Low VA Quartz

Options:

☐ On/off switch

☐ Weatherproof cover

☐ 2" I.D. Numbers

　☐ (both ends)

☐ One tether per leg

☐ Performance Top

☐ Sign ground lug

2. Sign Legend

Record panel legend in module boxes below. Record panel type above (see key below).
Place an "X" through modules that don't apply. (1-3 module signs). Circle power leg.

Front

a	b	c	d

Legend faces: NW   N   NE   E   SE   S   SW   W

Back

e	f	g	h

Legend faces: NW   N   NE   E   SE   S   SW   W

Panel Type

L = Yellow on Black   **Y** = Black on Yellow   **R/O** = White w/Black Outline on Red   **D** = White on Black   **B** = Blank (Black)

3 . Underground - *(In the base can)*

ISO Transformer size:_____   Manufacturer: _____

Extra Information:

Created by: _____

:

Sign ID #: _____

Inspection Date:

Exterior Use Panel Fade Kit and record the status in the modules below

Front

a	b	c	d

Back

e	f	g	h

☐ Any cracks in panels or tracks?

☐ Panel delamination or excessive degradation?

☐ Evidence of excessive light leakage?

☐ Damage or cracking of frame?

☐ Mounting and frangible couplings acceptable?

✓ *(Check box to report issues. Make notes on the back of this sheet.)*

Interior

☐ Check all lamps illuminated

☐ Record input amperage, note here:_____

☐ Record output voltage to lamps and adjust accordingly
(see reference material specific to lighting system)

☐ Check for loose connections

☐ Inspect for brittle or damaged wires

☐ Inspect for signs of damaged electrical components

NOTES: _____

_____

_____

_____

Inspection Date:

Exterior Use Panel Fade Kit and record the status in the modules below

Front

a	b	c	d

Back

e	f	g	h

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NOTES: _____

_____

_____

_____

Sign Maintenance Log

Sign ID #: _____

Date: _____

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Date:_____

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Date:_____

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Date:_____

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FAA ADVISORY CIRCULAR 150/5340-26
Maintenance of Airport Visual Aid Facilities

This document includes excerpts from:
FAA Advisory Circular 150/5340-26: Maintenance of Airport Visual Aid Facilities

3.2 MAINTENANCE RECORDS.
Maintenance records are an important part of an effective maintenance management system; they provide a service history of each piece of equipment, ensure regular maintenance without duplication of effort, and provide a data base for statistical analysis of lighting system performance. Without records, knowledge gained from regular inspections will not be retained, and preventive maintenance will be difficult. An effective records system should allow for the recording and retrieval of information with a minimum of effort. The records system should compile data that will document the effectiveness of the maintenance program. By checking the records, a manager should be able to determine whether a particular maintenance task is being done too frequently or not often enough.

3.3 PREVENTIVE MAINTENANCE PROGRAM.
Reliable functioning of airport lighted visual aids is essential to airport safety, capacity, and operation especially for low visibility operations. Therefore, it is essential that a preventive maintenance program be established to ensure reliable service and proper equipment operation. Properly scheduled inspections, testing, and calibrations are essential to the proper functioning of these systems.

3.5 REFERENCE LIBRARY.
3.5.1 Equipment Technical Manuals (ETMs).
ETMs and other manufacturer's literature form an important part of the reference library. Obtain two copies of all technical manuals and related manufacturer's literature. Retain a master copy in the reference library, and provide a separate copy for the shop. In addition, keep a copy of each equipment manual at the equipment location. This facilitates troubleshooting and repairs without the necessity of traveling back to the shop location to retrieve the manual. Do not remove the master copy of the technical manual from the reference library as it can easily become misplaced or lost. In the event the shop copy is lost, make another photocopy of the technical manual from the reference library instead of releasing the master copy.

3.6.6 Use of Original Equipment Manufacturer (OEM) Part.
The use of non-OEM parts or lamps in FAA approved equipment is strongly discouraged. **The FAA has strict specifications for approval of all airport lighting equipment and use of non-OEM parts or lamps in such equipment or systems can render the equipment to be functionally non-FAA approved.** This could possibly lead to serious liability consequences in case of an aircraft incident at an airport following these practices. In the case of runway and taxiway lighting fixtures, the use of a generic, non-approved lamp can render the photometric output of the fixture out of specification with disastrous results in light output and, consequently, safety of low visibility operations. *Warning: The use of non-OEM replacement parts in Lumacurve signs will void the FAA certification (as noted in the ETL Certificate of Conformance), void manufacturer warranties as well as compromise future product support and upgrades.*

5.4 ILLUMINATED RUNWAY AND TAXIWAY GUIDANCE SIGNS.
5.4.1 Cleaning.
Most signs require minimal maintenance aside from lamp replacement. However, with the intrusion of dust, dirt and water it is necessary to inspect and clean the interior of signs periodically to ensure proper light output. Mice and other rodents are known to set up house-keeping in signs. Frequently, this results in damage to wires and other components and the presence of grass, trash and other bedding material. For these reasons, inspect and clean airfield guidance signs at east twice a year.

5.4.2 Lamp Replacement.
As with all airport lighting systems, re-lamping should be accomplished with the sign de-energized to prevent the possibility of electric shock. This has been made an easier task by the addition of switches on signs to disconnect the power. The act of re-lamping has also been made easier and quicker by designs of both incandescent and fluorescent types that allow re-lamping without the use of tools.

5.4.3 Current Check.
At least twice a year, the current through the lamp circuit should be checked to verify that it is correct for the sign in question. If not correct for all steps, make current adjustments on the sign internal regulator board or if a Style 5 sign, check the circuit CCR to make sure it is operating at 5.5A.

We enjoy working with dedicated airfield maintenance folks like yourself to help keep your airfields running smoothly and looking their best. Lumacurve's truly modular design is designed to allow maximum flexibility and serviceability, giving maintenance personnel more control. Our hope is that this maintenance program will offer concepts that will help your workday run a little more efficiently and effectively. Adopting your own version of our **Airfield Sign Audit & Records Program** should prove a real time saver to you and your crew.

Visit the Lumacurve Help Yourself Center
for more maintenance and troubleshooting tips and tricks.
www.lumacurve.com/helpyourself

800.258.1997
www.lumacurve.com