



Biological Reviews

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Federal Communications Commission



Biological Review Considerations

- Wetlands
- Threatened and Endangered Species
- Migratory birds
- Bald Eagles and Golden Eagles



Biological Review Considerations

- http://wireless.fcc.gov/nepa/EA_checklist.pdf
- Located in: Wilderness Area, Wildlife Preserve, Floodplain, or Wetland?
 - If no, provide documentation (maps, etc.)
 - If yes, provide appropriate approvals, permits, or grants



The Value of Wetlands

- Flood control
- Water quality -transform nutrients & pollutants
- Diversity of wetland plants, wildlife and ecosystems
- Recreation (hunting, fishing, bird watching)
- Natural heritage

Wetlands

- Wetlands' ecological value is recognized in international law (RAMSAR), federal and state law, Executive Orders, programs, and local policies and regulations.
 - Clean Water Act, Section 404 regulates dredging and filling of wetlands
 - US Army Corps of Engineers
 - Permits and/or other authorization may be required



Wetlands

- If the proposed facility would be located in a wetland, provide a copy of the permit from the U.S. Army Corps of Engineers permitting the construction of the proposed antenna structure and a U.S. Army Corps map.
- If not in wetland, indicate in application materials and maintain maps for your records.





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Threatened & Endangered Species

- Section 1.1307(a)(3) of the Commission's rules, 47 C.F.R. §1.1307(a)(3), requires applicants, licensees, & tower owners to consider the impact of proposed facilities under the Endangered Species Act (ESA), 16 U.S.C. §1531 et seq.
- Applicants must determine whether any proposed facilities may affect listed, threatened or endangered species or designated critical habitats, or are likely to jeopardize the continued existence of any proposed threatened or endangered species or designated critical habitats. Applicants are also required to notify the FCC & file an environmental assessment if any of these conditions exist.

Threatened & Endangered Species

- Plants and animals
- Determine if T&E species at your proposed facility site





Threatened & Endangered Species

- Information, Planning, and Conservation (IPaC)
 - USFWS tool
 - Provides species lists, critical habitat designations
 - <http://ecos.fws.gov/ipac/>

IPaC Information for Planning and Conservation

U.S. Fish & Wildlife Service

1 Find Location

Search or zoom to find the project location

2 Define Area

Draw or upload the area where activities will occur

3 Confirm

Verify the area where project activities will occur

AREA: 22.61 acres

CONTINUE

CHANGE AREA



Layers

ADD



POWERED BY esri



Project information

Project name

Project description

Describe the location, size, scope, and timing of this project.



Project activities

Add the activities you plan to conduct as part of this project to see recommended conservation measures.

There are no species in your project area with conservation measure recommendations available. Please contact the local U.S. Fish & Wildlife office to review impacts for this project.

Contact information

Full name

Email

Phone



Endangered species



Migratory birds



Wildlife refuges



Wetlands

Endangered species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

Birds



Piping Plover *Charadrius melodus*

Endangered



Red Knot *Calidris canutus rufa*

Threatened

Conditiona

Flowering Plants



Pitcher's Thistle *Cirsium pitcheri*

Threatened

OVERVIEW

DESIGN

RESOURCES

IMPACT ANALYSIS

REGULATORY DOCUMENTS

SAVE



Endangered species



Migratory birds



Wildlife refuges



Wetlands

Mammals



Indiana Bat *Myotis sodalis*

Endangered



Northern Long-eared Bat *Myotis septentrionalis*

Threatened

Reptiles



Eastern Massasauga (=rattlesnake) *Sistrurus catenatus*

Candidate

Critical habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered



IPaC Information for Planning and Conservation

U.S. Fish & Wildlife

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Endangered species



Migratory birds



Wildlife refuges



Wetlands

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

[Data limitations](#)

[Data exclusions](#)

[Data precautions](#)

Riverine

R2UBH	11
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Threatened & Endangered Species

- If listed or proposed threatened or endangered species or designated or proposed critical habitats *are present* in the county or counties where the “action” is located and would not be affected by the proposed antenna structure:
 - Explain how the applicant determined that there would be no effect and provide the materials (with citations) that formed the basis for this determination (e.g., maps or lists from relevant FWS databases.)



Threatened & Endangered Species

- If the proposed antenna structure may affect, but is not likely to adversely affect, listed or proposed threatened or endangered species or designated or proposed critical habitats in the action area:
 - Provide a letter from FWS concurring with the applicant's informal biological assessment. If any measures are proposed to mitigate any effects on species or habitats, the assessment must outline those measures with FWS concurrence.
 - e.g., Indiana bat



Threatened & Endangered Species

- If present and if the proposed antenna structure may affect, and is likely to adversely affect, listed or proposed threatened or endangered species or listed or proposed designated critical habitats in the action area
 - Prepare a formal biological assessment as outlined in 50 C.F.R. § 402.01 *et seq.* The applicant should provide the formal biological assessment to the FCC for formal consultation with the FWS.



Threatened & Endangered Species

- Protected species not present
 - Relevant documentation (e.g., IPaC)
- Protected species present, but not affected
 - Determination by USFWS or qualified biologist
- Not likely to Adversely Affect protected species
 - USFWS concurrence
- Likely to Adversely Affect protected species
 - USFWS incidental take statement



Biological Review Considerations

- Wetlands
- Threatened and Endangered Species
- **Migratory birds**
- Bald Eagles and Golden Eagles

Estimated 4 million – 50 million bird fatalities at communication towers annually in U.S.

Almost all are considered violations of the Migratory Bird Treaty Act.



Detected Bird Mortality

- Most frequently detected
 - Songbirds
 - Vireos
 - Warblers
 - Thrushes
 - Sparrows
 - Shorebirds
 - Waterfowl



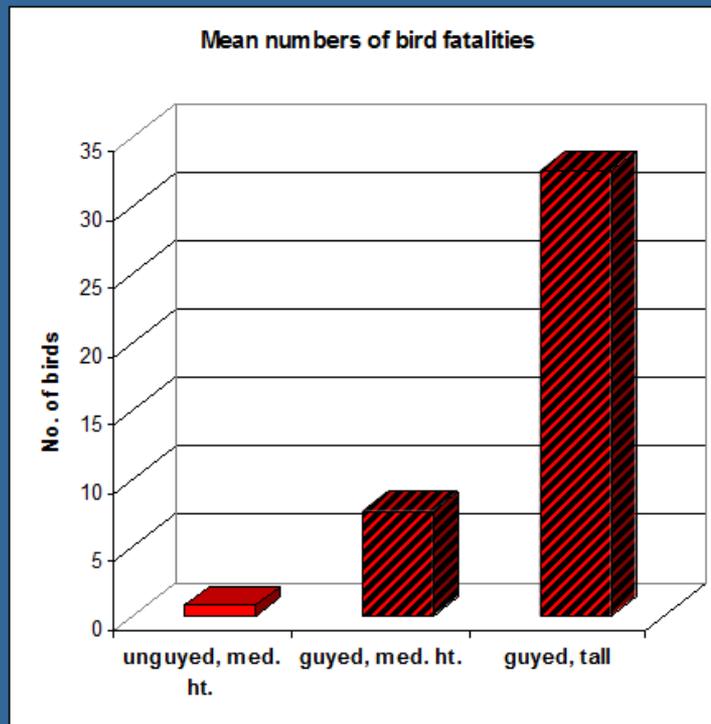
Variables Related to Bird Collisions

- Weather
- Location in the landscape
- Tower support systems
- Tower heights
- Tower lighting systems



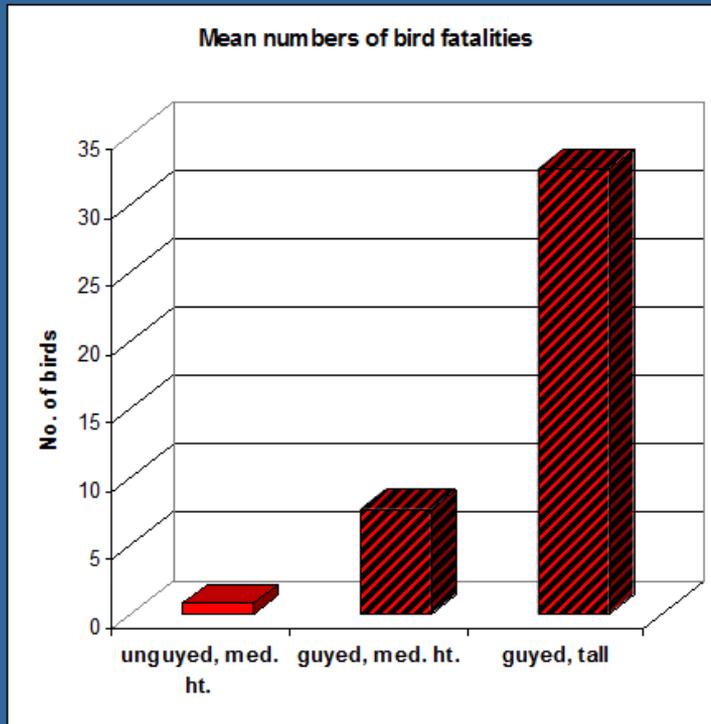


Towers with guy wires result in higher levels of avian mortality than towers without guy wires.



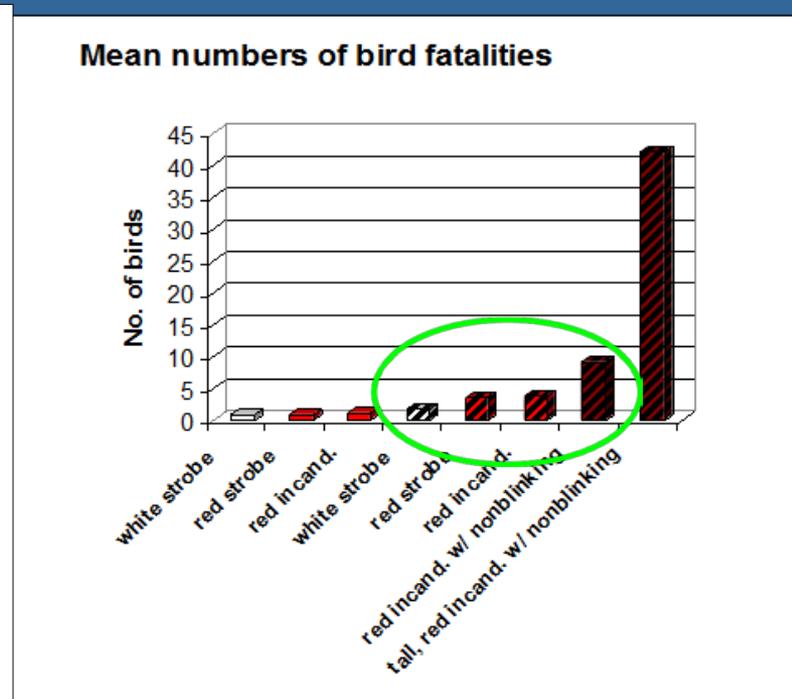
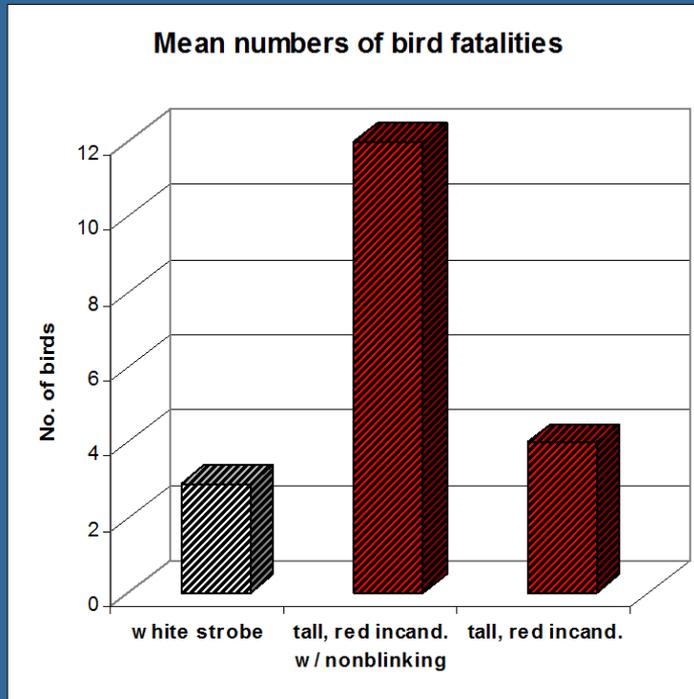


Taller towers result in higher levels of avian mortality than shorter towers.





Steady-burning lights on towers result in higher levels of avian mortality than flashing lights.





50-70% reduction in fatalities via elimination of non-flashing lights

L-865

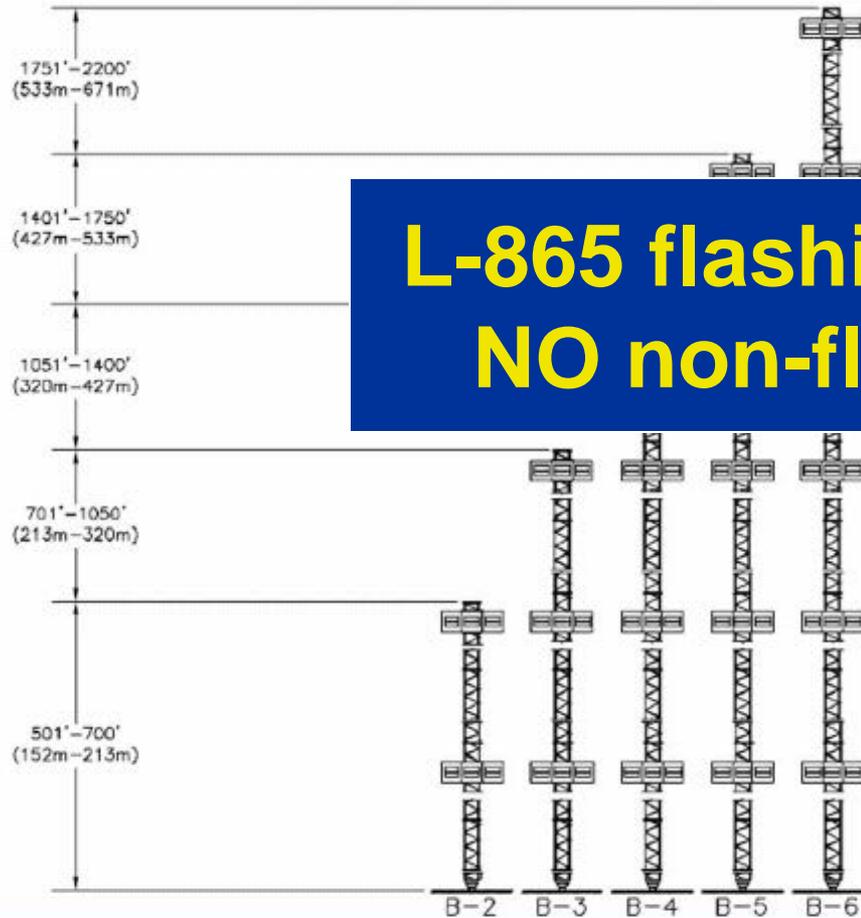
L-864

L-864

L-864 and L-810

HIGH INTENSITY OBSTRUCTION LIGHTING STANDARDS (FAA Style B)

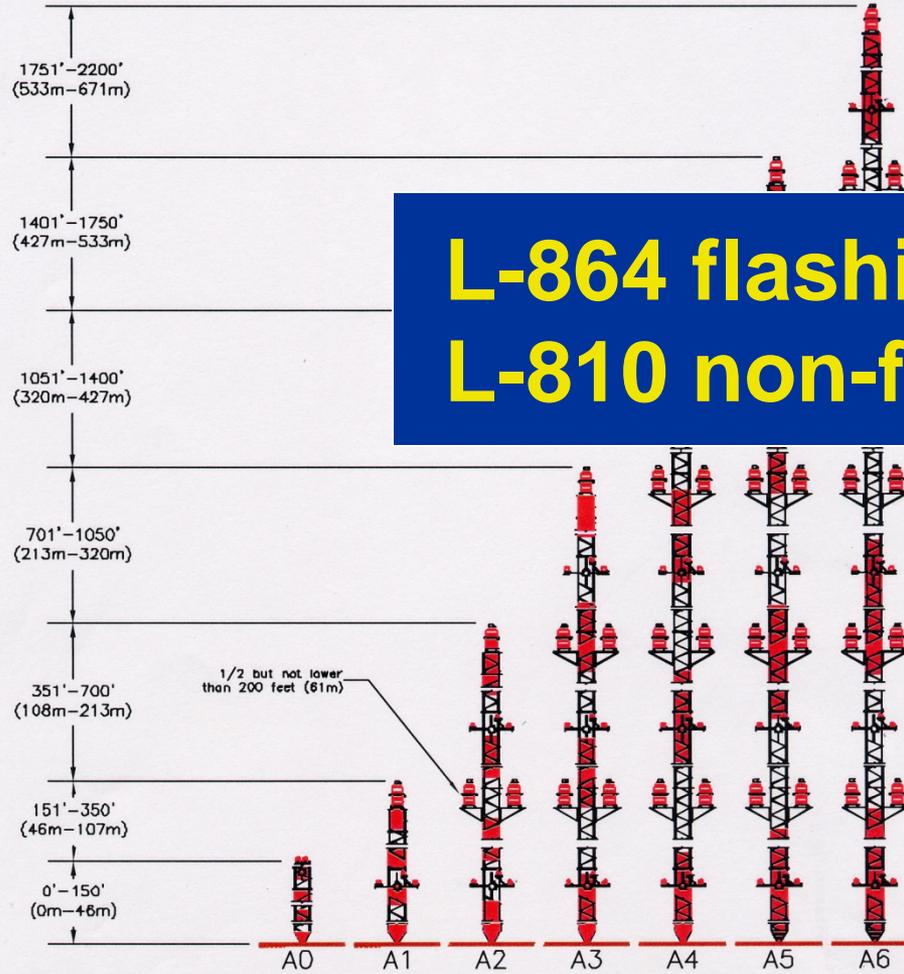
Day Protection = 200,000cd White Strobe
Twilight Protection = 20,000cd White Strobe
Night Protection = 2,000cd White Strobe



 - L-865 High Intensity Strobe
(3 Flashheads required per level for 360° coverage)

RED OBSTRUCTION LIGHTING STANDARDS (FAA Style A)

Day Protection = Aviation Orange/White Paint
Night Protection = 2,000cd Red Beacon and sidelights



L-864 flashing red
L-810 non-flashing red



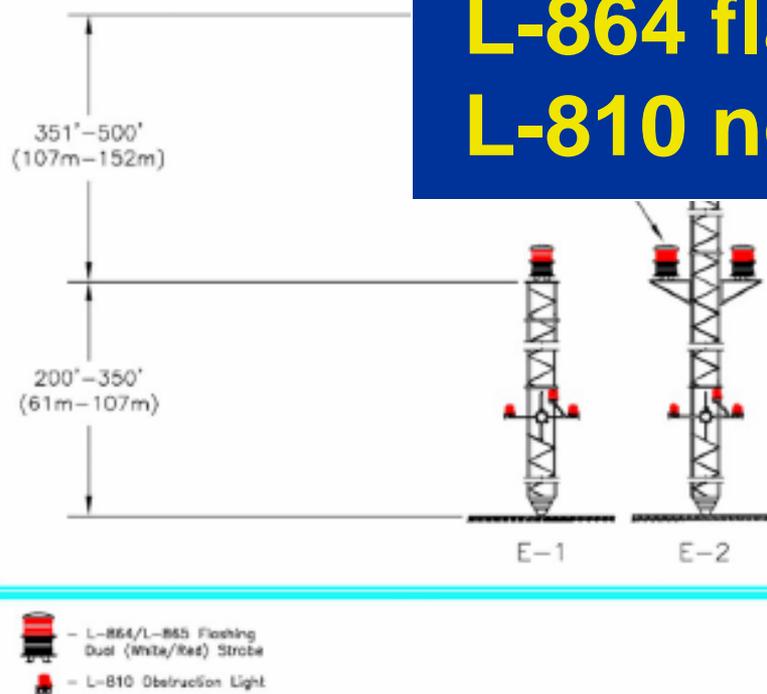
– L-864 Flashing Beacon



– L-810 Obstruction Light

MEDIUM INTENSITY DUAL OBSTRUCTION LIGHTING STANDARDS (FAA Style E)

Day/Twilight Protection = 20,000cd White Strobe
Night Protection = 2,000cd Red Strobe and sidelights
Painting of tower is typically not required.

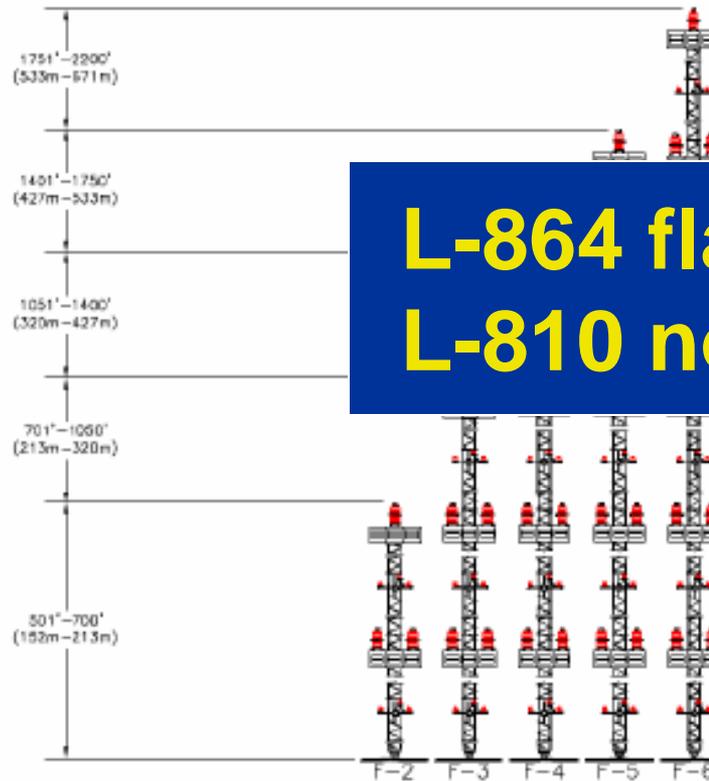


L-864 flashing red
L-810 non-flashing red

FIG 17

DUAL HIGH INTENSITY OBSTRUCTION LIGHTING STANDARDS (FAA Style F)

Day Protection = 200,000cd White Strobe
 Twilight Protection = 20,000cd White Strobe
 Night Protection = 2,000cd Red Beacon and sidelights

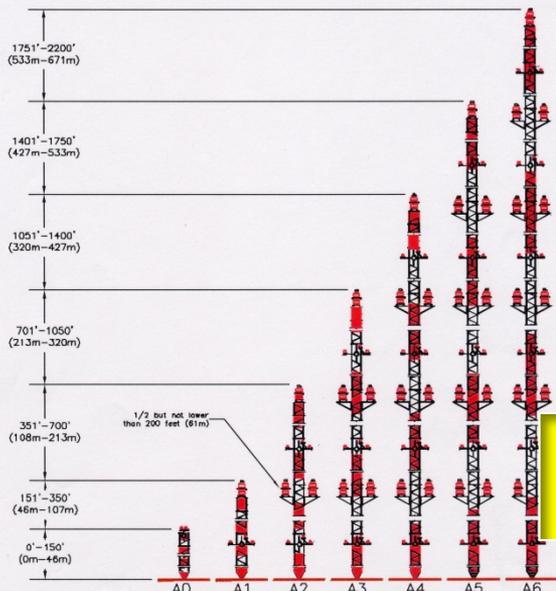


-  - L-864 Flashing Beacon
-  - L-810 Obstruction Light
-  - L-856 High Intensity Strobe
(3 Flashcode required per level for 360° coverage)

FIG 18

RED OBSTRUCTION LIGHTING STANDARDS (FAA Style A)

Day Protection = Aviation Orange/White Paint
Night Protection = 2,000cd Red Beacon and sidelights



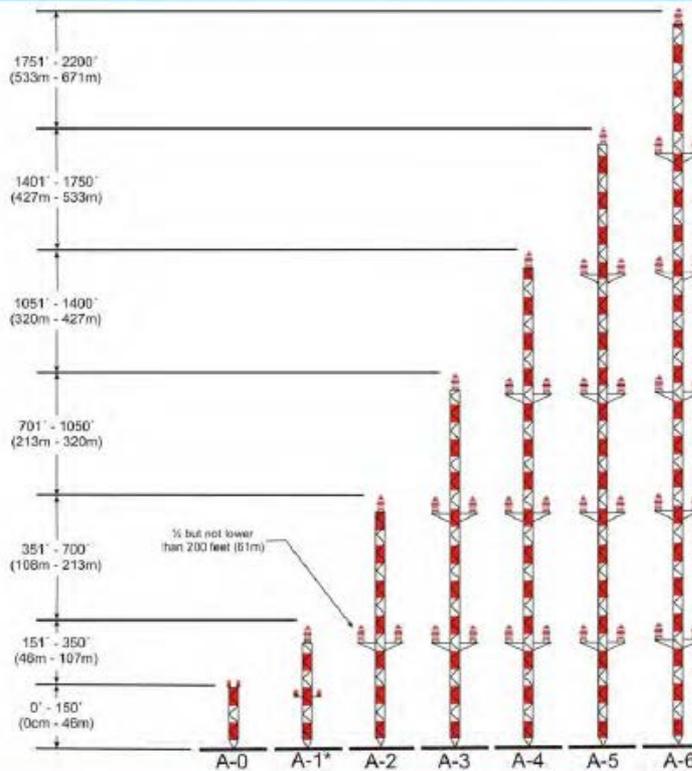
- L-864 Flashing Beacon
- L-810 Obstruction Light

Option to extinguish non-flashing lights from towers >350 ft. AGL which reduces tower lighting costs

APPENDIX C—PROPOSED FEDERAL AVIATION ADMINISTRATION OBSTRUCTION LIGHTING STYLES

PROPOSED RED OBSTRUCTION LIGHTING STANDARDS (FAA Style A)

Day Protection = Aviation Orange/White Paint
Night Protection = 2,000cd Red Beacon and sidelights

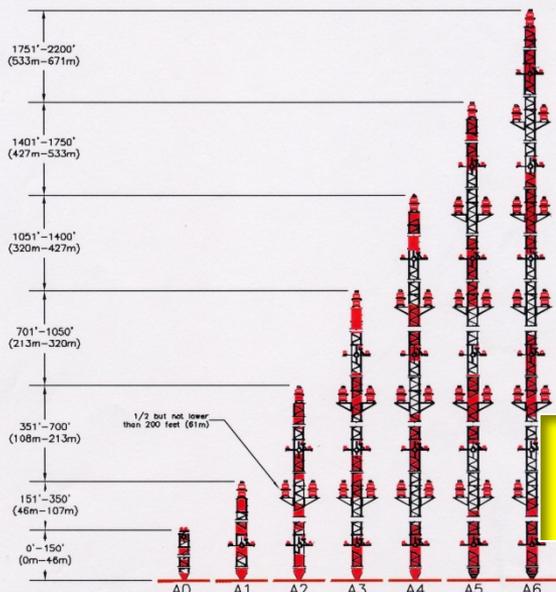


- L-864 Flashing Beacon
- L-810 Obstruction Light (*Configured to flash at same rate as L-864 on style A-1)

Figure C-1. Proposed Federal Aviation Administration Style A Lighting Configuration

RED OBSTRUCTION LIGHTING STANDARDS (FAA Style A)

Day Protection = Aviation Orange/White Paint
Night Protection = 2,000cd Red Beacon and sidelights



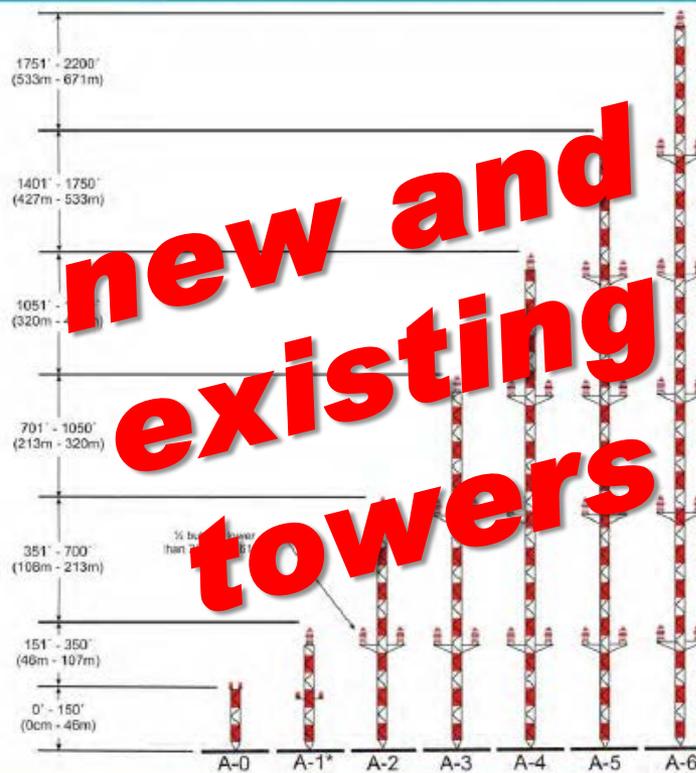
- L-864 Flashing Beacon
- L-810 Obstruction Light

Option to extinguish non-flashing lights from towers >350 ft. AGL which reduces tower lighting costs

APPENDIX C—PROPOSED FEDERAL AVIATION ADMINISTRATION OBSTRUCTION LIGHTING STYLES

PROPOSED RED OBSTRUCTION LIGHTING STANDARDS (FAA Style A)

Day Protection = Aviation Orange/White Paint
Night Protection = 2,000cd Red Beacon and sidelights



- L-864 Flashing Beacon
- L-810 Obstruction Light (*Configured to flash at same rate as L-864 on style A-1)

Figure C-1. Proposed Federal Aviation Administration Style A Lighting Configuration



Lighting Deviation Process

- To extinguish or eliminate the L-810 tower lights/side-markers on an existing registered tower, or to request use of flashing red lights only on a proposed new tower, you must take the following steps:
 - File a Marking and Lighting study electronically with the FAA on Form 7460-1, Notice of Proposed Construction or Alteration (<https://oeaaa.faa.gov/oeaaa/external/portal.jsp>) requesting the elimination or omission of steady-burning lights (L-810). Designate structure type: "Deviation from Red Obstruction Light Standards".



Lighting Deviation Process

- Once the FAA has approved the request and assigned a FAA Study Number, submit an online eSupport request (<https://esupport.fcc.gov/request.htm>) asking the FCC to verify that our records of this FAA Study Number reflect the FAA-approved bird lighting deviation.



Lighting Deviation Process

- After receiving an FCC record confirming that the FAA study has been updated, file Form 854 with the FCC via the ASR System. For an existing registered tower, select “MD – Modification”, update the Lighting to “Option 3 – Other”, and provide a description (Ex: Style E w/ Red Light Deviation). The FCC will typically approve the application and modify the registration within 24 hours. For a proposed new tower enter the Lighting as “Option 3 – Other,” and provide a description. FCC approval for a proposed tower is subject to the procedures and time periods described at <http://www.fcc.gov/help/environmental-notification-process-registration-antenna-structures-overview>.



Lighting Deviation Process

- When the lighting change for an existing tower has been granted by the FCC via ASR, the steady-burning, side-marker, L-810 tower lights can be extinguished. This is typically accomplished in the tower transmission building and does not ordinarily require climbing the tower. For new towers, once the registration is granted, simply construct the tower without installing L-810 lights.

Migratory Birds

- Towers \geq 450 ft. (137 m) AGL
 - Prepare an Environmental Assessment including a section specifically addressing potential migratory bird impacts and efforts to reduce those impacts (e.g., tower lights, building lights, bird flight diverters)
 - Seek comment from the FWS on migratory birds
 - No red-steady lights
 - Motion-detector lighting on out buildings recommended





Migratory Birds

- Towers 350-450 ft. (107-137 m) AGL
 - No red-steady lights and motion-detector lighting on out buildings recommended



Biological Review Considerations

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Eagles and other Raptors

- Bald and Golden Eagle Protection Act (BGEPA), MBTA, and some state protection
- Number of nests on towers is increasing.
- Contact USFWS & state natural resource agency before construction or maintenance activities on towers with nests. May require permits. Nest exclusion devices can be used.
- Raptors can become entangled in antenna wires or twine used as nesting material. Minimize excess wires, securely attach wires to tower, and shrink wrap or tape wires together to reduce the risk of entanglement. Contact state natural resources protection agency & USFWS if bird entanglement occurs.







**For more information
contact:
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