

# **Avian Mortality at Communications Towers**

A workshop sponsored by  
The United States Fish and Wildlife Service, The Ornithological Council, and The American Bird Conservancy.  
[www.towerkill.com/index.html](http://www.towerkill.com/index.html)  
[www.fws.gov/r9mbmo/issues/tblcont.html](http://www.fws.gov/r9mbmo/issues/tblcont.html)

## **Presentation Number 11**

### **Obstruction marking (lights) — recommendations from the FAA**

David T. Bayley, New England Regional Office, Federal Aviation Administration  
12 New England Executive Park, Burlington, MA 01803-5299  
Phone - (781) 238-7523 E-mail - [David.T.Bayley@faa.gov](mailto:David.T.Bayley@faa.gov)

### **Al Manville's introduction of the eleventh speaker, Dave Bayley.**

Our speaker is Acting Manager of the Air Space Branch, New England Regional Office of the Federal Aviation Administration. He did his undergraduate work at Kenyon College, graduate work at Pennsylvania State University, and served in the Air Force working on NORAD issues – stationed in Great Falls, MT; Syracuse, NY; and in Iceland. He has been with the FAA since 1975. Our speaker has been an air route traffic control center specialist, and he's been a flight service station specialist – which is good news to me because that is where I get some of my weather flight information from. He has worked at control towers in a number of locations. He is currently assigned to the FAA's New England Regional Office Obstruction Evaluation Program. David Bayley is going to be talking about the issues dealing with obstruction marking, lights, and recommendations from the FAA. Dave.

### **Dave Bayley**

The FAA is set up to work with other agencies, but specifically, the way we work is that a proponent with a tower or any kind of structure will notify the FAA and Part 77 of the Code of Federal Regulations describes that process for people to notify the FAA concerning buildings and towers. It's important to note that dealing with buildings and towers simply requires a notification procedure. When we talk about the FAA authorizing a tower it is kind of a misnomer. We don't really authorize or approve towers like the FCC who licenses them. We merely look at them and do an aeronautical study. The aeronautical study is based on navigable air space which we define as starting about 200-feet above the surface, above ground level, and all the way up to 60,000-feet – beyond that we don't really care. The military does things up there that we're not going to focus on. And I don't think that's the focus of this group.

At 200-feet, there are some other surfaces where we go right down to the surface of the airport, and what I try to do is put up that to illustrate where we are looking at close proximity to an airport, there may be towers or structures that are only 50 or 60 feet high that we would insist be marked for visibility to pilots that are operating in and near that airport [*reference to overhead*]. These Part 77 surfaces are described in an advisory circular that is available on our website on the internet, and it is just to describe a series of slopes where aircraft are maneuvering toward the airport.

When we do an aeronautical study we do an initial screening just to see what it is that the tower is going to do to our navigable air space, since we try to provide for safe and efficient use of that air space. We share that air space with all the other users. We'll look at it and if this particular structure penetrates one of these surfaces, we'll do a further aeronautical study. Generally what we'll do is gather information from aviation user groups.

The thing you have to understand is we are under a great deal of pressure to make these towers and obstructions as conspicuous as possible to pilots – not inconspicuous. When I hear people talking about turning lights off I get very nervous. We accept comments pertinent to the aviation aspects of the obstruction and once we finish our study, we make recommendations for what we call marking and lighting. Marking is simply something we use for, I'm going to use a term here – “conspicuity.” I'm not sure it's a real word but it is one we use a lot in the agency. We try to make these things conspicuous during the daytime, and what you are talking about in the night-time is lighting.

For lighting, we look at different schemes. You've seen pictures of both white strobes and red lighting – particularly the case in Charleston, SC, where the two are located in close proximity. As Holly mentioned, when a proponent comes to us and requests certain lighting, they have overriding economic concerns that they are dealing with. We have concerns from an aviation safety point – the environmental concerns are not really considered. And when people ask about the environmental aspects, as Holly alluded to, it is not a Federal action so per say it doesn't fall under the guidelines of NEPA – all we are doing is looking at it from the standpoint of making it conspicuous. The environmental concerns that we most often hear regarding towers are the effect of the lights on neighbors. We have had cases where people have complained about flashing white strobes. Proponents have then come to us and said can we paint the tower orange and white and put on red lights – and this is considered a suitable alternative in most cases and we will honor that request, considering the neighborhood. We've had other cases where people have asked to not mark and light an obstruction, and we've insisted that it be marked and lighted. And, we've other cases where we've said you don't have to mark and light the obstruction, but because a town thinks you should have a red light on it, they put a red light on it and this has happened in cases where we've had cell towers of less than 200 feet. We have no legal standing.

It's important to understand that the FAA merely does an aeronautical study and makes a recommendation on the basis of that aeronautical study. We have no regulatory authority over that navigable air space, as incredible as that may seem. What we do with our aeronautical study is make a determination as to whether this obstruction is a hazard to aviation, or a determination of no hazard – and in the case of a hazard, we can't even stop the construction of that particular tower or building. In the case of the FCC we depend on that agency to not license and radiate a signal because we have made a determination that it's a hazard to aviation and to date, they've been very good about honoring those recommendations based on the fact that it may be a hazard. But as I've said, we don't regulate those towers – all we do is make a determination.

To make those towers more conspicuous to pilots, we do make a recommendation often times for orange and white paint or red lights. I can't tell you honestly what it's been based on. I know there were a number of studies that have been done in the past, and that was deemed to be one of the more conspicuous patterns to make these things obvious to pilots. Lately we've come up with dual lighting which is flashing white lights during the daytime to make them conspicuous, and red lights at night. That seems to be a preferred alternative by some operators, and then the high intensity or medium intensity strobes are very expensive, but we would recommend those in cases where we have very large towers that we want to make as conspicuous as possible. With the advent of digital television, I would anticipate probably more of those lighting schemes because nobody wants to go up 1,000 feet or higher to paint a tower. When you use the high intensity white lights you obviate the need for painting that tower. So, you'll probably see more of those as the telecommunications industry goes to digital television which they are mandated to do by Congress.

If you get the idea that there are some conflicting mandates here you are probably absolutely correct. As I said our mandate is the safe and efficient use of the air space. We do what we can to protect the pilots. The idea that avian mortality might enter into that has not been something that the FAA has looked at in any detail to the best of my knowledge. When Reggie Mathews talked to me – I think he participated in June in a [RESOLVE] seminar – this was fairly new information to us in this area.

So, I guess what I would like to say is there are some options with lighting. There are some options for dual lighting or white lighting or red lighting, but all we can do is recommend. We can't insist other than in those areas where we think that something may be needed to be lighted to be more conspicuous – we would insist. But often times we just accede to the needs of the proponent for their economic purposes, that's what they'll come to us for. Or, if they're getting pressure from an environmental group, usually because of the lights at night or something, or for some other reason. But we are not the ones who are making the decision based on any environmental grounds. That's something that comes about in other ways. The real people who regulate towers are your local communities and your states. The FAA does not regulate those towers. If it gets too close to an airport we don't like it – but that is all we can say is we don't like it. Often this is where it will end because the person would have a very difficult time getting insurance or carrying out business if they needed an FCC license. So, I guess what I would like to say as far as the aeronautical study process goes, we do not regulate. All we do is study and make a determination. I heard a suggestion that for study purposes that it might be possible to configure towers with alternative lighting. I can't promise anything but I certainly don't think that would be a problem as long as it would remain conspicuous. I don't think that we've done studies recently on what makes a tower conspicuous, and certainly any research into avian mortality with respect to communication towers should take into account probably not only the avian population, but the aviation population as well. The two things would have to work hand in hand. I'd just like close by saying that we are not entirely insensitive to the environmental issues here. They are new to us, but I think that the thing you have to consider is that where there's an environmental concern we'll look at it – but it is our mandate, it is our mission to provide the most efficient and safest air system in the world. And that is what we'll operate to do. Where there is room to maneuver, where there is room to work with the scientific community, I think that the FAA would surely do that to everybody's benefit, not just to one group or the other. Thank you.

**Presentation number 11  
in the workshop  
Avian Mortality at Communications Towers  
[www.towerkill.com](http://www.towerkill.com)**