

LANDING PROBLEMS

2011-04-06 01:00:00

by Jen Boyer

Vertical Magazine



The revisions to NFPA 418 mean new and renovated heliports must adhere to FAA AC 150/5390-2B. Existing heliports, like this one a Los Angeles County Sheriff's Department SH-3 Sea King is landing on, shouldn't need to make design changes, but will need to implement emergency plans and personnel training. Skip Robinson Photo

On Jan. 3, 2011, the National Fire Protection Association issued its latest standard for heliports and rooftop hangars, effectively requiring compliance with the United States Federal Aviation Administration's Heliport Design Advisory Circular: AC 150/5390-2B (see p.42, Vertical, Feb-Mar 2011). For many already-operating heliports, this change will likely have little effect, however, for those that are currently designing or renovating heliports, the new standard may have significant impact.

In addition to the changes, heliport operators across the U.S. have been wondering how a fire protection code organization can mandate compliance with an FAA advisory circular. To better understand the situation, we've delved into the history of both the FAA's recommendations and the mechanics behind how the AC is used and interpreted for heliport design across the nation.



Rex Alexander, National EMS Pilots Association president and NFPA helicopter facilities technical committee member, said, in his experience, 80 to 90 percent of hospital heliports meet the best practices described in the FAA's advisory circular. Carilion Clinic Photo

Understanding the AC

The FAA's heliport design advisory circulars date back to the 1960s, with each update reflecting increased design and safety changes befitting corresponding heliport and helicopter design improvements.

The current, 170-page AC 150/5390-2B provides recommendations for heliport design, as well as approaches and departures, and describes acceptable requirements to develop a heliport. This current version, issued in 2004, can virtually be taken as a "how-to guide" for building safe and effective public and private heliports for every facet of the helicopter industry. It contains detailed information on everything from exact dimensions for the facility and surrounding clear airspace, to the color of markings on the pad, to the requirements that allow for precision and non-precision instrument approaches.

The basic reason for the AC, according to the FAA, is to increase heliport safety and awareness of related safety issues. Specifics for elements such as clear areas, pad dimensions and approaches are all based on the FAA's research into safe heliport operations, and on studies of heliport accident causes.

Unfortunately, heliport design regulation is largely a local or state matter. Consequently, the FAA specifically states that the AC is not mandatory and does not constitute a regulation, except when federal funds have been dedicated for heliport construction.

Despite its advisory nature, the AC is already regulatory in a number of jurisdictions. Some states - such as California, Illinois, New Jersey and New York - require heliports to receive state approval, regardless of use. In order to receive that state approval, the heliport must comply with all or part of the FAA's heliport design AC. Many other states, cities and county municipalities have adopted their own similar regulations as a condition of licensing, granting of conditional-use permits or passing of building inspections.

A Lack of Implementation

However, despite the fact that the FAA issued AC 150/5390-2B in the hopes of ensuring safe heliport design, a lack of standardization for heliports still exists around the nation. This has translated into multiple accidents that could have been avoided if the heliports at which they took place had adhered to the best practices spelled out in the AC's design guidelines.

A case in point is the Grand Rapids, Mich., rooftop heliport crash on May 29, 2008. The private emergency medical service (EMS) heliport contained numerous obstacles both on and around the rooftop that provided significant hazards to flight as defined by AC 150/5390-2B. The accident aircraft struck one of those obstacles. The resulting crash and post-crash fire blocked the only entrance and exit from the rooftop area - an elevator and stair tower - providing safety issues for both the crash survivors and first responders.

While a lack of standardization largely can be blamed on the lack of a universal regulatory document, sometimes it can just boil down to a lack of knowledge and understanding.

"I think the majority of people want their heliports to be safe, but it can be confusing what you have to do to make it so," explained Ray Syms, president of Raymond A. Syms & Associates, a heliport design and consulting firm in Long Branch, N.J. "Some building codes or municipalities don't provide a great deal of guidance when it comes to heliports, and many often don't know about the FAA advisory circular or they misinterpret it." This is why the National Fire Protection Association (NFPA) chose to get involved.

The Power to Change

The NFPA is a non-profit organization that was established in 1896 to provide guidance on building construction and fire protection codes in the U.S. (it also now contributes to standards in several other countries around the world). The organization develops, publishes and disseminates more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks. According to the NFPA, virtually every building, process, service, design and installation in society today is affected by its documents.

The association developed NFPA 418, Standard for Heliports, in 1965, to provide construction and fire protection guidance for elevated heliports. Through continuous updates over the years, it now pertains to all heliports and rooftop hangars and includes a requirement in the January 2011 revision for all aeronautical components of new and renovated heliports to comply with AC 150/5390-2B.

The suggestion to bring the FAA's AC into the code was made by the NFPA's technical committee on helicopter facilities and supported by Syms, chair of the committee. Together, the committee drew up a proposal focusing on the safety value of the AC, along with heliport emergency plans and personnel training (which affect all heliports, new and existing). The committee passed it unanimously in July 2009, and the NFPA standards council adopted the revisions in the January 2011 standards update after no public or industry comments or motions were received regarding the change.

"Our decision to push for inclusion of the AC in NFPA standards was an attempt to both increase visibility [of the AC's requirements] as well as provide some sort of regulatory teeth when it comes to heliport design and safety," explained Rex Alexander, president of the National EMS Pilots Association and a member of NFPA's technical committee on helicopter facilities. "There are those hospitals and architects that may not know about the FAA's AC. However, almost all of them know about the NFPA because most of the nation's state, county and city municipalities adopt NFPA standards as their fire codes. By bringing the AC into NFPA 418, we increase visibility, and, we hope, vastly increase standardization and safety."

Alexander then added: "In my experience, which is focused mainly in the EMS industry, in many cases there is a lack of knowledge and understanding, which in turn leads to a lack of compliance. In most cases, when we talk to the owners of the heliports about the compliance issue, the majority are more than willing to listen and work with us to mitigate the risks. Once they understand the risk exposure and how that translates to their potential liability exposure, they are very interested in decreasing those risks."

"It's been my experience that 80 to 90 percent of hospital heliports I have utilized generally meet the intent of the standards and best practices in the AC. It's that other 10 to 20 percent that we worry about on [any] given day."

Of course, as with many updated regulations, confusion and consternation are bound to occur.

The Controversy Ensues

There has been a great deal of debate regarding retroactive actions since the release of the new standard. Barry Chase, NFPA staff liaison for the technical committee on helicopter facilities, explained that the NFPA's position is to provide upgrades to codes, not retroactive requirements.

"The typical intent of any of our standards is to provide direction for new construction or renovations," explained Chase. "We specifically did not include retroactive language into the standard. Just because we make a new standard doesn't mean the old standard is unsafe. The new NFPA 418 standard is just an upgrade. That's not to say there won't be instances where the fire marshal or governing jurisdiction will interpret a need for upgrades to specific heliports. Our intent, however, was not to make that a requirement."

The Helicopter Association International (HAI) has a different set of concerns. While the industry group is unwaveringly supportive of safety, HAI does not support NFPA's move to add AC 150/5390-2B to the NFPA standards.

"HAI was not involved in the process until we learned it had been recommended by the NFPA 418 standards for heliports committee [i.e., the technical committee on helicopter facilities]," said Harold Summers, director of flight operations and technical services for HAI. "HAI's position is the AC trumps NFPA in the standpoint where the AC still says it's advisory only."

Summers said the largest concern from HAI's point of view is that a one-size-fits-all solution will hurt the industry. "There are some instances where you want a minimal helipad," he remarked. "How about the guy with 10 acres and a Robinson? Is he unsafe if he doesn't have all the items in the AC verbatim? So, what do you say of all the unimproved, off-airport landings EMS operators do every day? I think there are a lot of unintentional consequences and HAI remains adamant that the AC is advisory only."

Clearing the Air

Supporters of the updated NFPA 418 standard agree that they have their work cut out for them in

the short run. A great deal of education needs to take place to make heliport operators and those who regulate heliports aware of the standard and its intention.

"What we don't want to see is a massive closure of heliports," remarked Alexander. "The intent of providing this updated standard was to encourage identification and mitigation of hazards, and an overall move to make heliports safer and keep them safe. In many cases, mitigation can be as simple as trimming or relocating a tree, moving an antenna on a rooftop, lowering a rooftop vent, etc."

Alexander said a large educational push is currently in the works where both NFPA and private sector speakers will make presentations and offer educational materials to those responsible for enforcing codes and to heliport owners. The NFPA's national conference in June has already scheduled a presentation aimed at introducing the AC and explaining simple mitigation procedures in an effort to educate stakeholders and avoid heliport closures.

For more information on NFPA 418, please visit: www.nfpa.org/418.

A 1,500-hour helicopter pilot, Jen Boyer holds commercial instrument, flight instrument and instructor instrument certificates. When not flying, writing or spending time with her husband and two kids, Jen mentors current and future Whirly-Girls.