NTSB

# SAFETY ALERT

National Transportation Safety Board

# Preventing Obstacle Collision Accidents in Agricultural Aviation

***Both unseen and known obstacles present unique hazards.***

## *The problem*

- Accidents involving collisions with obstacles are among the most common types of agricultural aircraft accidents. During 2013, 16 accidents involved aircraft that collided with poles, wires, guy wires, meteorological evaluation towers (MET), or trees while conducting agricultural-related activities.
- Some collisions involved obstacles that the pilots did not see (even during survey flights) but others involved obstacles that were known to the pilot and/or had characteristics that would make them visibly conspicuous.

## *Related accidents*

- While applying herbicide to a field, a pilot of a PZL Mielec M-18A airplane was killed after his airplane struck two guy wires of a radio tower. The pilot was previously aware of the marked radio tower and had worked the target field at least 15 times during the previous season. (CEN13LA163)
- A pilot of a Bell 206B lost control of the helicopter after flying through power lines. The pilot had circled the target field three times to look for obstacles before beginning the spray passes but did not see the power lines. (ERA13LA236)
- At the end of a spray pass in a small field with multiple obstacles, a Piper PA-36-300 airplane struck a tree on the edge of the field. The pilot, who was fatigued at the time of the accident, reported that he regretted his decision to accept a high level of risk to spray the small, tightly confined field. (CEN13LA464)
- An Air Tractor AT-802A airplane crashed after striking power lines at the end of a field. Although the pilot had “scouted” a previous field he sprayed, he had not circled the field where the accident occurred. Also, the pilot was flying toward the sun, which likely affected his ability to see the power lines. (CEN13LA424)

## *What can pilots and operators do?*

- Maintain a quick-reference document (paper or electronic) at the operations base that contains field maps, charts, photographs, and details of all known obstacles. Frequently review current aeronautical charts for information about obstacles.
- Before you leave the ground, spend time becoming familiar with all available information about the target field and programming navigation equipment. Such preflight action can help reduce the potential for confusion or distraction in flight.
- Conduct aerial surveys of the target field but do not rely solely on an aerial survey to identify potential obstacles.
- Conduct regular ground surveys of fields. Some towers can be erected in hours, and obstacles can change since you last worked that field.
- When possible, use ground crews. They may be in a better position to see certain obstacles and help you ensure that your aircraft remains clear of them.
- Watch for shadows and irregularities in growth patterns to help identify obstacles.
- Speak with farmers and land owners to raise awareness about obstacle hazards.
- Use GPS and other technology to maintain awareness of obstacle locations.
- Be aware that workload, fatigue, sun glare, and distractions in the cockpit can adversely affect your ability to see, avoid, or remember obstacles.
- Understand the performance limitations and requirements for your aircraft, particularly when operating with heavier loads and at higher density altitudes.
- The National Agricultural Aviation Association's Professional Aerial Applicators' Support System reminds pilots that, when ferrying an aircraft or transitioning between sites, flying above 500 feet reduces obstacle collision risks:

**"Ferry Above Five and Stay Alive"**

## *Interested in more information?*

The Federal Aviation Administration's (FAA) Advisory Circular (AC) 137-1A, "Certification Process for Agricultural Operators," provides some basic tips about obstacle avoidance. The AC is accessible from the FAA's website at www.faa.gov.

The FAA "Flying in the Wire Environment" Safety Alert for Operators (SAFO) 10015 provides information and a link to a video on wire-strike avoidance awareness.

This NTSB safety alert and others, including "Meteorological Evaluation Towers" (which provides more information about MET hazards), can be accessed from the NTSB's Safety Alerts web page. The reports for the accidents referenced in this safety alert are accessible by accident number from the NTSB's Aviation Accident Database & Synopses web page.