



Operation S.A.F.E.

Make sure your aerial applications are on target, effective, and safe by having all of your aircraft evaluated at an Operation S.A.F.E. fly-in.

What is S.A.F.E.?

An Operation S.A.F.E. fly-in is an excellent opportunity to directly measure and evaluate the performance of your aircraft. While the S.A.F.E. acronym, which stands for Self-regulating Application and Flight Efficiency, seems to imply the focus is primarily on drift reduction, the fact is that the focus of a fly-in is on making an effective application. The bottom line is that Operation S.A.F.E. is about accuracy, and making an accurate application means it is both effective and safe.

Spray pattern and droplet size

An Operation S.A.F.E. fly-in clinic provides two important measurements for an agricultural aircraft: spray pattern quality and droplet size. The spray pattern is measured by loading a fluorescent tracer dye in the hopper, spraying a test string, and then using a fluorometer to measure the dye on the string. A software program provides a graphic of what the spray pattern looks like and can also calculate the appropriate effective swath width for the aircraft.

Droplet size is measured using water sensitive paper placed on the flight line, which is then scanned and analyzed using a scanner and a specialized software program. Droplet size has a significant impact on both efficacy and drift mitigation.

A real life example of what can be accomplished at a fly-in helps demonstrate the importance and benefits of this program. In 2013, an Air Tractor AT-402 started an Operation S.A.F.E. fly-in with an effective swath width of 60 feet for a spray application rate of 5 gallons per acre. This aircraft just started a new work site where it was to be responsible for treating 88,000 acres, with an average field size of 128 acres.

The Operation wanted to have it evaluated before the season started to verify it could complete the work accurately. When the fly-in was completed, the aircraft was verified to have an effective swath width of 70 feet at 5 gallons per acre. The increase in effective swath width saved an average of 6 passes per field. This translated into a total of 4,125 saved passes, equivalent to over 50 hours of flying for the season.





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Getting S.A.F.E. for you

Fly-ins can also be conducted for dry applications. Similar to a liquid fly-in, the aircraft's spread pattern is measured and optimum swath width determined.

Operation S.A.F.E. is administered by the National Agricultural Aviation Research & Education Foundation (NAAREF). The Fly-In spray clinics are conducted by trained analysts who are certified by NAAREF. Analysts include USDA and University Scientists, industry experts, state agricultural department employees, and operators.

Fly-ins are offered throughout the nation and are often organized and supported by the state associations, local retailers and distributors, and adjuvant and pesticide manufacturers. NAAREF recommends having your aircraft evaluated every two years or after major changes to the application system.

For more information on Operation S.A.F.E. fly-ins, including a list of current analysts and a calendar with scheduled fly-ins, visit the NAAA website and navigate through "Our Partners" to the "NAAREF Operation S.A.F.E." link and the "Upcoming Events" calendar on the home page.

How will your operation benefit from attending an Operation S.A.F.E. Fly-In?

- Measurement and characterization of application pattern
- Determination of optimum effective swath width
- Documentation of expected application performance

Operation S.A.F.E. (Self-regulating Application & Flight Efficiency), developed in 1981, was designed to clearly demonstrate that agricultural aviation recognizes its responsibility to minimize the potential for adverse health and environmental effects of agricultural chemical application.