

A Review of "Aerial Application: A Training Manual for Pilots Seeking Licensure as Certified Pesticide Applicators"

(National Release Version), Thomas Dean, (c) 2001, Pesticide Information Office, University of Florida, 198 pages

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The long-awaited national aerial application manual is now a reality, and it was worth the wait. Dr. Thomas Dean's very concise, well-organized manual is up to date on most topics and includes a good description of the use of Global Positioning Systems (GPS) in aerial application. Each chapter includes review questions useful in preparing for certification examinations. There are, however, some areas in which the manual could have been more comprehensive and accessible.

The use of the word "licensure" in the title may cause some misunderstandings. There is a difference between being licensed and being certified. In many states, the individual is "certified" and the business is "licensed." Confusion already exists between those two words. The U.S. Environmental Protection Agency (EPA) chose to use the term "certification" when applicators have demonstrated their competence to apply restricted-use products, yet "licensure" denotes the granting of a license to practice a profession.

The manual provides a good overview of the Federal Aviation Administration (FAA) regulations regarding the aerial application of pesticides contained in 14 CFR parts 61, 91, 133, and 137. However, there is very little discussion of the EPA regulations regarding pesticide use contained in 40 CFR parts 162, 165, 170, and 171.

A few areas were too brief. The discussion regarding pesticide labels and labeling, for example, could be expanded. While the information in the chapter on pesticides and human health is a nice overview of the effects of pesticides on mammals, nowhere is there a discussion of the effects of pesticides on the environment. Also lacking is sufficient discussion of the use of personal protective equipment (PPE) or storage and disposal of pesticides and containers. While the author says it is necessary for mixing and loading crews to wear and maintain PPE, he does not provide any information about specific types of PPE. The inclusion of this information would increase the

overall size of the manual but it could eliminate the need for a separate core manual.

A few minor points in the illustrations are inaccurate; while they may not lessen the usefulness of the manual, they do detract a little. Some of the illustrations in the chapter on application equipment show an outline of what appears to be a type of aircraft that has not been used in agricultural aviation for quite a few years. Also rarely is a gear pump used on agricultural aircraft. The diagram showing pump capacity versus pressure, while illustrating the point, might be more appropriate if it showed a pump with 150 GPM capacity.

Causes of drift (including the possibility of some additives increasing drift potential) and techniques for managing drift were addressed well. The section on concerns about drift, however, could be expanded to emphasize citizens' concerns and rights.

The chapter on GPS was a welcome addition, as most aerial applicators use GPS technology. The information on calculating the area of a target site and of various field layouts is a very good review of the math involved, and should prove especially for those pilots who do not fly around the field and use GPS to calculate the area.

Several areas were very thoroughly covered. The chapters on

calibration and pesticide mixing are very complete. The calibration discussion includes all of the necessary formulae, plus a thorough description of pattern testing a spray boom and the problems that spray pattern testing can help detect. The mixing discussions are not often covered in applicator manuals and are a welcome addition. The examples used during the discussion of calibration and mixing are a very valuable guide for applicators. Whereas the information on measuring systems may not be entirely necessary, it certainly does not detract from the manual.

The last chapter concerns pesticide application in the field, but it also includes sections on the mixing/loading crew, the equipment servicing crew, and aircraft crash respondents. This discussion is not technically part of the certification process, but it is a very necessary part of safe and effective pesticide application.

This manual is a welcome and worthy addition to the library of pesticide applicator study materials and to the libraries of aerial applicators even after they have completed the certification process. It should be, and will be, adopted by many states as the primary manual for educating aerial applicators. Appreciation is extended to Dr. Thomas W. Dean and those who assisted him in preparing this manual.