Aerial	
Federal category	
Are any existing manuals/exams available?	See EPA webpage: https://www.epa.gov/pesticide-worker-safety/resources-states-and-educators-use-training-pesticide-applicators Both are available. Also - https://www.agaviation.org/
Research notes: - Anything identified in the AAPCO survey? - What did you find online? - What did you learn contacting others?	Almost all the certification plans (states, tribes, territories and federal) use this category. The category is usually separate and not lumped or split, even though some states require an additional category to go along with the aerial category. Emerging regulations or science in this area are UAVs. Many of the states already utilize the National Aerial Manual, but some states have their own manual. Most of the discussion was on how to implement the UAVs into the category manuals and exams: should it be an addendum to the existing manual, should it be a separate manual altogether, or should the manual have content for the winged aircraft and the UAVs. Lots of discussion to come!
How many states/tribes use this category?	Almost all – probably 90% of the 68 certification plans for states, tribes, territories, and federal agencies
How national, regional, or local is the training material likely to be, for this category? For example, would you expect the training material to be similar in each state, or tailored to local pests/conditions?	Mostly National but could be at the Regional level.

How is the category lumped with other categories and/or split into several categories?	Usually separate category. Sometimes a state requires additional category – such as ag.
What are some sample competencies in this category? For example, what does the table of contents include?	Aerial pest control. Applicators must demonstrate practical knowledge of the pest problems and pest control practices associated with performing aerial application of restricted use pesticides, including all the following: (i) Labeling. Labeling requirements and restrictions specific to aerial application of pesticides including: (A) Spray volumes. (B) Buffers and no-spray zones. (C) Weather conditions specific to wind and inversions. (ii) Application equipment. Understand how to choose and maintain aerial application equipment, including all of the following: (A) The importance of inspecting application equipment to ensure it is in proper operating condition prior to beginning an application. (B) Selecting proper nozzles to ensure appropriate pesticide dispersal and to minimize drift. (C) Knowledge of the components of an aerial pesticide application system, including pesticide hoppers, tanks, pumps, and types of nozzles. (D) Interpreting a nozzle flow rate chart. (E) Determining the number of nozzles for intended pesticide output using nozzle flow rate chart, aircraft speed, and swath width. (F) How to ensure nozzles are placed to compensate for uneven dispersal due to uneven airflow from wingtip vortices, helicopter rotor turbulence, and aircraft propeller turbulence. (G) Where to place nozzles to produce the appropriate droplet size.

	(H) How to maintain the application system in good repair, including pressure gauge accuracy, filter cleaning according to schedule, and checking nozzles for excessive wear. (I) How to calculate required and actual flow rates. (J) How to verify flow rate using fixed timing, open timing, known distance, or a flow meter. (K) When to adjust and calibrate application equipment. (iii) Application considerations. The applicator must demonstrate knowledge of factors to consider before and during application, including all of the following: (A) Weather conditions that could impact application by affecting aircraft engine power, take-off distance, and climb rate, or by promoting spray droplet evaporation. (B) How to determine wind velocity, direction, and air density at the application site. (C) The potential impact of thermals and temperature inversions on aerial pesticide application. (iv) Minimizing drift. The applicator must demonstrate knowledge of methods to minimize off-target pesticide movement, including all of the following: (A) How to determine drift potential of a product using a smoke generator. (B) How to evaluate vertical and horizontal smoke plumes to assess wind direction, speed, and concentration. (C) Selecting techniques that minimize pesticide movement out of the area to be treated. (D) Documenting special equipment configurations or flight patterns used to reduce off-target pesticide drift. (v) Performing aerial application. The applicator must demonstrate competency in performing an

	aerial pesticide application, including all of the following: (A) Selecting a flight altitude that minimizes streaking and off-target pesticide drift. (B) Choosing a flight pattern that ensures applicator and bystander safety and proper application. (C) The importance of engaging and disengaging spray precisely when entering and exiting a predetermined swath pattern. (D) Tools available to mark swaths, such as global positioning systems and flags. (E) Recordkeeping requirements for aerial pesticide applications including application conditions if applicable.
Are there emerging regulations or science in this area?	UAVs
Are there opportunities to reduce duplication of effort?	Yes
Are there critical items or methods needed to ensure accuracy/quality? Are there tripping hazards on the path to adopting the new/revised manual?	Possibly but none mentioned in the webinar except concerns with UAVs.
Need or interest for workgroup?	Yes
Interested parties	Jennifer M Weisbrod jweisbrod2@unl.edu Dana Beegle dbeegle@vt.edu Jack Peterson jpeterson@azda.gov Edward Crow eac24@psu.edu Marty Fowler marty_fowler@hotmail.com Kelly Navinsky-Wenzl kelly.navinskywenzl@ks.gov

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Researched/summarized by CTAG members Neal Kittelson and Linda Johns	

Summary (1-3 paragraphs):
Summary is stated in the Research section above.