5-1735 OPERATIONAL SAFETY ISSUES WHICH MAY BE DISCUSSED WITH THE APPLICANT. The applicant should be familiar with the following subject areas.

A. Contamination Protection. The applicant should have satisfactory knowledge

4) The pilot must be knowledgeable about procedures to prevent contamination of the water sources if water is obtained from streams or ponds for mixing purposes. The pilot must know state and local laws concerning spillage.

5) The pilot should be knowledgeable about how often aircraft and spray equipment should be cleaned (e.g., daily or as often as required to remove accumulation of pesticide residue). When aircraft are cleaned, the pilot should be aware of state and local laws concerning drainage into a sewer, ditch, pond, stream, or other body of water, or the location of approved disposal sites.

B. Container Disposal. The applicant should be knowledgeable about recommended methods for disposing of used pesticide containers. The pesticide label contains Environmental Protection Agency (EPA)-approved methods for disposal. State and local laws, however, may require additional precautions, and it would be useful for the inspector to be aware of them. Local extension agents or an EPA office can be of assistance in this area.

C. Economic Poison Labeling. Economic poisons manufactured for interstate use are required by EPA regulations to be registered with that department. Those poisons must be labeled showing the brand name, active ingredients, inert ingredients, directions for use, warning, net contents, and name and address of manufacturer or registrant. The label normally contains other detailed instructions concerning the effects on plants, animals, and persons. Therefore, when required by § 137.19(e), the applicant must possess a satisfactory knowledge concerning the general effects and precautions to be observed as described on the label of the economic poisons normally used in the area where the applicant conducts operations.

D. Detecting Contamination. The requirements contained in § 137.19(e)(1)(iv) should not be interpreted as FAA encouragement or endorsement of self-diagnosis. Rather, it is a requirement that the agricultural pilot possess sufficient knowledge of the primary symptoms of poisoning to motivate seeking immediate professional medical attention when an element of doubt exists concerning contamination.

E. Decontamination Steps. Decontamination should be accomplished in accordance with the manufacturer's labeling and instructions.

F. Poison Control Centers. Refer to the most recent issue of the Directory of Poison Control Centers, a publication from the U.S. Department of Health and Human Services (HHS), for the location of poison control centers in the United States. A local HHS office may also have a copy. In addition, several chemical hotlines are available for the use of persons handling chemicals. Inspectors may wish to provide these names and telephone numbers to agricultural operators who do not already have them.

1) The National Pesticide Telecommunications Network operates a toll-free hotline, 1-800-858-PEST (7378), which is staffed Monday through Friday, from 8:00 a.m. to 12:00 p.m., Pacific Time (PT). Qualified personnel are available to answer questions about pesticides. Information can be obtained about treatment by a physician after contamination or suspected contamination. The location of the nearest poison control center, cleanup of a pesticide spill, and other related information is also available on the Internet at http://npic.orst.edu/index.html

2) Chemical Transportation Emergency Center (CHEMTREC) offers emergency phones service 24 hours a day, 7 days a week. In the event of an incident or accident involving pesticides, CHEMTREC is able to provide emergency response information pertaining to chemical spills. In emergency situations, call 1-800-424-9300. For non-emergency, general information or referrals, call 1-800-262-8200. Nonemergency telephones are staffed Monday through Friday from 9:00 a.m. to 5:30 p.m. Eastern Time (ET). They also maintain a website at http://www.chemtrec.com.

G. Preflight. In addition to the preflight action required by 14 CFR part 91, § 91.103, the following steps should be taken before starting agricultural aircraft operations:regarding the methods used to safeguard the pilot against contamination and the safe handling of economic poisons that the pilot dispenses. (An explanation of the relative toxicity of economic poisons' lethal doses for 50 percent of test subjects (LD_{50}) is included in Volume 3, Chapter 52, Section 1.)

1) An aerial applicator pilot who is engaged in the actual application of economic poisons should be knowledgeable of the hazards of the pilot's mixing or loading highly toxic poisons. Special emphasis should be placed on this job function when the economic poison is being used in an undiluted form.

2) The pilot should be able to conduct a ground crew briefing concerning economic poisons and the need to wear protective clothing. such as rubber gloves, apron, boots, and a respirator, when handling materials that require them. (If a respirator is required, it should be the type which protects the wearer against the particular pesticide being handled.) The pilot should also be able to brief flaggers, when used, concerning the potential hazard of the pesticide being dispensed, and should indicate that they be equipped with appropriate protective equipment.

3) Pilots should also be aware that persons working closely with or handling pesticides should change clothes and bathe at the end of the operation or immediately if pesticide gets on their skin. Clean work clothes should be worn daily.

H. Aerial Survey of the Area to Be Treated. When the pilot reaches the vicinity of the target area, he or she should carefully inspect the area from the air. A UAS operator should carefully inspect the area from the ground prior to aerial application.

1) The area immediately surrounding the working area should be surveyed to determine that the material dispensed will not cause damage to persons or property on the surface. The engine and propeller noise emitted as the pilot executes a pullup and turnaround over these areas may result in damage to some enterprises. The adjacent area should also be investigated for fish ponds, lakes, and streams, because certain economic poisons may have a lethal effect upon fish and wildlife.

2) The pilot should make a determination if the area to be treated could be considered to be a congested area. He or she should be familiar with the provisions of § 137.51 for operating over a congested area.

I. **Aircraft Operating Limitations.** The pilot must have adequate knowledge of operating limitations for the aircraft to be used in accordance with the applicable requirements contained in § 91.9, and for UAS operations, any applicable regulations in part 107 and/or the operator's exemption, waiver, or CoA. Special emphasis should be placed on W&B information. If the applicant conducts operations using helicopters, the applicant should understand that the height/velocity diagrams do not provide information for weights above the maximum certificated gross weight. The applicant must also be familiar with aircraft performance capability, provided performance data have been established for the aircraft to be used. Knowledge about performance shall include such items as:

J. Safe Application Procedures. The applicant should be knowledgeable about safe flight and safe application procedures during agricultural operations.

1) The pilot should be familiar with the hazards associated with dispensing materials that may be flammable.

2) When conducting operations over sloping terrain, caution should be exercised relative to the direction of swath runs. Flying up the slope may result in stalling the aircraft before reaching the end of the swath run, or contribute to an inadvertent stall during the pullup or turnaround.

3) Pullups and turnarounds are normally made on the downwind side of the centerline of the swath run. However, unfavorable terrain, wires, guy wires, poles, trees, or other obstructions may require pullups and turnarounds to be made on the upwind side. If a no-wind condition exists, it is usually the best procedure to make the turn into an open area (if available) in the event of power loss or engine failure.

4) The aerial applicator pilot should avoid diversion of attention during a swath run. Not doing so may result in allowing the aircraft to fly into the ground or other obstruction.

5) The aerial applicator pilot may have a tendency to apply forward pressure on the elevator control or cyclic control (on a helicopter) when flying under wires. He or she should avoid such a tendency because once any part of the structure of the aircraft (wheels, skids) becomes entangled in crop foliage, it may be difficult, if not impossible, to prevent the aircraft from being pulled to the ground. The vertical fin may also contact the wires as the aircraft passes underneath them. Pilots of airplanes, and especially helicopter pilots, may choose not to fly under wires and dress-up the field parallel to the wires.

6) When two or more aircraft (manned aircraft or UA) are used in applying chemicals to a field, the pilots conducting the operations should be encouraged to make arrangements between themselves concerning who performs the cleanup swaths or trim passes, when applicable. Mid-air collisions have occurred between aircraft conducting team operations when such coordination has not been accomplished.

7) When using Global Positioning System (GPS) swath marking equipment, extreme caution should be used to prevent diverting attention away from the task of flying the airplane safely. The pilot should make it a practice not to make adjustments to the computer while in the swath run. The pilot should plan the turn using only reference to the light bar instead of fixating on it.

K. Night Operations. If the operator conducts night operations, the pilot should have knowledge of night operations. See Volume 6, Chapter 6, Section 1 for test areas. For UAS that weigh 55 pounds or more, refer to the C&L section of the exemption. For UAS that weigh less than 55 pounds, refer to the applicable sections of part 107 and any associated waiver.

55 pounds or more, check the C&L of the operator's exemption. If the aircraft is a UA that weighs less than 55 pounds, check the applicable sections of part 107.

1) N-number matches that on the registration certificate, or for noncertificated UAS, have the operator provide the registration number (FA number) and serial number;

2) Data plate information, serial number, airworthiness certificate, and registration certificate match each other and aircraft registry records; and

3) Agricultural Aircraft Operator Certificate facsimile is on board, if knowledge and skill test is not conducted as part of initial operator certification, unless otherwise exempted.

G. Aircraft Conformity. Inspect aircraft for compliance with §§ 137.19(d), 137.31(b), and 137.33(a) and (b) (Airworthiness), unless otherwise exempted or allowed under part 107.

1) Aircraft maintenance documents reflect that all required inspections have been accomplished, and

2) Airworthiness Directives (AD) are complied with.

H. Skill Test. Conduct the skill portion of the test (§ 137.19(e)(2)). The applicant is to be briefed and evaluated on piloting skill and operational judgment in the following, unless otherwise exempted, as not all required skills are applicable to UAS. If the test is to be conducted using fixed-wing aircraft, § 137.19(e)(2)(i)–(v) must be covered. If the test is to be conducted using a rotorcraft, § 137.19(e)(2)(ii)–(vi) must be covered. If the pilot will be operating both fixed-wing and rotorcraft, all of § 137.19(e)(2) must be covered.

1) Ground crew coordination and loading procedures.

2) Engine start, warm-up, and taxi procedures.

3) Short field and soft field takeoffs (airplanes and gyroplanes only), directional control, lift-off, and climb:

   - One soft field takeoff and climb; and
   - One short field takeoff and maximum performance climb.

4) Approaches to the working area:

   - Satisfactory aerial (or ground UAS) survey of area for obstructions; and
   - Proper method of beginning operations; normally, starting operation crosswind on downwind side of field.