



Drone Exploring: Career Spotlights

Infrastructure Inspection — Post

Overview: This session takes a serious look at drone-based infrastructure inspection as a career, including the roles involved (utility or power line inspector, telecom tower inspector, bridge or pipeline inspection specialist), the certifications needed (FAA Part 107, thermal and corona detection training, working safely near energized power lines), and realistic pay ranges. Explorers plan a mock inspection flight for a wind turbine or transmission tower, including safety distance considerations near power lines.

OBJECTIVES

- Understand the roles involved in drone-based infrastructure inspection.
- Learn the certifications and safety training needed for this field: FAA Part 107 plus specialized training for working near energized infrastructure.
- Identify realistic pay ranges from entry-level to senior infrastructure inspection roles.
- Practice planning a mock inspection flight, including safety distance considerations near power lines.

SUPPLIES

- Laptop and projector to show sample power line, tower, or wind turbine inspection footage
- Printed handouts: Career Pathway — Infrastructure Inspection Drone Specialist and Inspection Flight Planning Worksheet
- Whiteboard or flip chart and markers
- Optional: printed or digital copy of FAA's free Part 107 study guide (faa.gov/uas)

ADVISOR NOTES

- This session is career-focused: Use real certification requirements, real safety considerations, and real pay ranges rather than a hobbyist framing.
- Emphasize that flying near energized power lines requires extra caution: Electromagnetic interference can affect drone compass or GPS systems, and physical clearance distances must be maintained.
- Encourage Explorers who are 16 or older and interested to look at the FAA Part 107 study guide as a concrete next step after this session.
- Consider inviting a guest speaker who works in utility, telecom, or infrastructure inspection to share their career path. See Optional Extensions.
- If no guest speaker is available, Advisors can run the entire session using this outline, the Career Pathway handout, and the resource links below.

SESSION OUTLINE

- **Welcome and Icebreaker** (10 min)
 - “What piece of infrastructure (bridge, tower, pipeline) do you rely on every day without thinking about how it's inspected?”
- **Safety and Regulatory Moment: Flying Near Energized Infrastructure** (10–15 min)
 - Review the FAA Part 107 Remote Pilot Certificate: minimum age 16, required knowledge test.
 - Explain that power lines and electrical equipment can interfere with a drone's compass and GPS, requiring extra caution and often manual flight skill.
 - Discuss required clearance distances and why some inspection work requires specialized training beyond Part 107.
- **Mini-Lesson: Careers in Infrastructure Inspection** (15–20 min)
 - Roles: utility or power line inspector, telecom tower inspector, bridge or pipeline inspection specialist, wind turbine inspector.

- Typical pay: Entry-level power line inspection roles average around \$17-\$20/hour; utility inspection drone pilots average around \$23/hour; entry-level salaried roles run \$50,000-\$65,000/year, mid-level \$65,000-\$85,000/year, and senior inspectors or program managers \$90,000-\$120,000+/year, especially with LiDAR or thermal and corona detection specialization.
- **Activity: Plan an Inspection Flight (20–25 min)**
 - Using the Inspection Flight Planning Worksheet, small groups plan a mock inspection of a wind turbine or transmission tower, including safe clearance distance, flight path, and what to photograph.
- **Wrap-Up Discussion (10 min)**
 - Groups present their inspection flight plans.
 - Discuss the concrete steps (certification, specialized training, portfolio) needed to pursue this as a career.

REFLECTION SECTION

Advisor Note: Some sample questions are below. They are designed to help the participants apply what they have learned to their own interests. You are welcome to use these questions or develop your own.

Focusing Questions

- What surprised you about the extra safety considerations needed near power lines or towers?
- Which type of infrastructure (power lines, bridges, turbines, pipelines) sounds most interesting to inspect?

Analysis Questions

- Why can flying near energized power lines affect a drone's navigation systems?
- How does specialized certification (like thermal and corona detection) affect pay in this field?

Generalization Questions

- How is planning around a hazard (like energized power lines) useful in other technical careers?
- What other careers combine routine technical work with a strong safety-first mindset, like this one does?

Challenge: This week, research one utility or telecom company's drone inspection program and identify what certifications they require.

OPTIONAL EXTENSIONS

Guest Speaker: Invite someone who works in utility, telecom, or infrastructure inspection to share their career path and take questions, in person or by video call.

Advisor-Led Option: If no guest speaker is available, Advisors can run the full session using this outline, the Career Pathway handout, and the resource links below. No outside expert is required.

Resource Links: FAA Part 107 overview ([faa.gov/uas/commercial_operators](https://www.faa.gov/uas/commercial_operators)); thermography and corona detection certification program information; utility company career pages.

Extension Project: Explorers who are 16 or older can begin studying for the actual Part 107 knowledge test using the FAA's free study guide.

Handout: Career Pathway — Infrastructure Inspection Drone Specialist

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A typical path into this career looks like this:

1. Interest and Hobby Flying

Learn basic drone operation and become comfortable with manual flight near obstacles.

2. FAA Part 107 Certification (Age 16+)

Pass the FAA knowledge test to legally fly for pay.

3. Entry-Level Inspection Work

Entry-level roles pay roughly \$17-\$20/hour, or \$50,000-\$65,000/year salaried.

4. Specialized Certifications

Thermal and corona detection and LiDAR training open the door to higher-paying, specialized inspection work.

5. Senior and Program Manager Roles

Senior inspectors or program managers can earn \$90,000-\$120,000+/year, especially with BVLOS or specialized payload experience.

Handout: Inspection Flight Planning Worksheet

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Use this worksheet to plan your mock infrastructure inspection flight.

Planning Item	Your Plan	Notes and Risks
Structure to inspect		
Safe clearance distance		
Flight path around structure		
What to photograph and measure		
Interference risks (GPS or compass)		