



Aviation Merit Badge Day

<NAME> Aviation Museum
EXAMPLE

Location: <Name> Aviation Museum

Duration: Full-day event (6-7 hours)

Participants: 50-75 Scouts (split into 7 groups of 8-10)

Structure: Rotating stations covering all merit badge requirements

Schedule Overview *

| Time | Activity |
|------------------|--|
| 8:30 - 9:00 AM | Check-in & Opening Ceremony (Welcome, safety briefing, group assignments) |
| 9:00 - 9:45 AM | Station |
| 9:50 - 10:35 AM | Station |
| 10:40 - 11:25 AM | Station |
| 11:30 - 12:15 PM | Station |
| 12:15 - 1:00 PM | Lunch Break (Museum Exhibit Viewing & Guest Speakers) |
| 1:00 - 1:45 PM | Station |
| 1:50 - 2:35 PM | Station |
| 2:40 - 3:30 PM | Station |
| 3:30 - 4:00 PM | Closing Ceremony (Q&A, Badge Completion Certificates, extracurricular options) |

* The example above uses the Charlotte Douglas International Airport, wind tunnel, and an airplane museum. Use what is available in your region to accomplish requirements.

Detailed Station Descriptions

Station 1: Aviation History & <Name>'s Legacy (:45 - Start at Sully's plane)

- Quick tour of museum, pointing out evolution of flight in the exhibits
- Describe differences between fixed and rotary wings, and benefits of each
- Watch video on the Miracle on the Hudson (Flight 1549)
- Discussion on how training, teamwork, and decision-making saved lives
- **Requirements Covered:** 1 (a, b, c) 4 (d)

Station 2: Principles of Flight & Forces of Flight (:45 – Start at Wind Tunnel)

- Interactive demonstration of lift, thrust, drag, and weight
- Wind tunnel experiments
- Discussion of Bernoulli's Principle and Newton's Laws
- **Requirements Covered:** 1 (f)

Station 3: Aircraft Mechanics and Pre-Flight Inspection (:45 – Start in conference room, then go outside to an operational plane if possible, or inside to the plane in the museum)

- Explain operation of piston, turbine, jet engines
- Explain operation of aircraft controls
- Hands-on pre-flight walkaround of a real aircraft (outdoor or indoor)
- Checklist activity: Scouts inspect and report issues
- Learn about cockpit instruments and safety procedures
- **Requirements Covered:** 1 (d, g), 3 (b)

Station 4: Aircraft Controls & Flight Simulators (:45 - Start at Flight Simulators)

- Hands-on use of museum's flight simulators and interactive exhibits
- Simulator set up to do Cessna 172, at CLT Airport
- Learn about pitch, yaw, and roll and how to control an aircraft
- Practice takeoff, landing, and in-flight maneuvers
- **Requirements Covered:** 1 (e, g), 3 (a)

Station 5: Careers in Aviation & Guest Speaker(s) (:45 – Conference Room)

- Presentations from pilots, air traffic controllers, mechanics, engineers
- Guest speaker(s): Pilot, STC/ employee, Aviation Exploring Post, Civil Air Patrol, etc.
- Discussion of education paths, flight training, and scholarships
- Discussion on Aviation Exploring Post
- **Requirements Covered:** 5 (a, b, c, d, e)

Station 6: Airport Operations & Air Traffic Control (:45 – Outside to view airport operations)

- Learn about airport markings, ground crew roles, and control tower functions
- Observation of air traffic patterns and communication procedures
- Possible guided tour of Charlotte Douglas International Airport (CLT) after MD Day over?
- **Requirements Covered:** 4 (a)

Station 7: Model Aircraft Building & Aerodynamics Experiment (:45 – Builder Room)

- Hands-on rubber-band-powered balsa wood plane building
- Compare different aircraft designs from museum's exhibits
- Test different wing shapes for stability and lift
- **Requirements Covered:** 2 (b)

Lunch Break & Aviation Safety Discussion (Conference Room)

- Scouts eat lunch while exploring museum exhibits
- Guest speaker discusses aviation safety, pilot decision-making, and lessons from real-world aviation incidents (including Flight 1549)

Closing Ceremony (Sully Aircraft Exhibit)

- Scouts gather for final discussions, reflections, and Q&A
 - Badge requirement review and completion verification
 - Group photo and certificate/awards distribution
 - Align groups for post-event extracurricular activity (optional)
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Notes:

- Each station staffed with 2 leaders: Museum staff and SME's (see below for resource needs)
- Have fun "sign-off sheet" with all requirements listed, and stamp from station leader
- Provide "wings" award and certificate, upon completion – can wear on uniform
- Optional activities after event:
 - o Tour of CLT facilities (control tower, etc)
 - o Drone training (coordinate with Drone Exploring Post)
 - o Discovery Flights (coordinate with EAA)
 - o American Airlines flight training simulators
 - o American Airlines mechanical tour
 - o Civil Air Patrol – deep briefing
- Charge a fee, or get corporate sponsorship – to cover balsa planes, wings pins, etc)

Resource Needs:

- 3 Museum Reps (Lead Stations 1, 5, 7)
- 4 Aviation MB Counselors (Lead stations 2, 3, 4, 6)
- 7 Adult leader volunteers (to partner with/support Station Leaders above)
- Guest speakers (as available)
- Registration and check-in support
- Contacts for extracurricular activities

Other Needs:

- Balsa wood airplane kits (available on Amazon: <https://a.co/d/g808mHf>)
- Completion certificates
- Wings awards (available on Amazon: <https://a.co/d/7LzseVt>)
- Others at your discretion