AMA FLIGHT SCHOOL

POWERED BY FLYROBOTICS

www.amaflightschool.org/

ABOUT THE AMA

175,000+ Members

50,000+ Youth Members

2,400+ Charter Clubs

2,000+ Affiliated Flying Sites

$10 Million Annual Budget

50+ Employees

1,100 acre International Flying Site

Member of the National Aeronautic Association

MEMBERSHIP BENEFITS

LIABILITY INSURANCE

Whatever you fly. Wherever you are. AMA has you covered.

$2.5 million Comprehensive General Liability for members, clubs, site owners and sponsors
$25,000 Accident/Medical Coverage
$10,000 Maximum Accidental Death Coverage
$1,000 Fire, Theft and Vandalism Coverage

SUBSCRIPTION TO MODEL AVIATION MAGAZINE

Monthly issue of Model Aviation magazine, featuring how-to articles, recurring columns, product reviews, AMA member features, district and industry news and event calendar.

FLYROBOTICS

Home | About us | Education | Ground School | Services | Shop | Contact us | My A

FLY-ROBOTICS.COM

AMAFLIGHTSCHOOL.ORG

Home | Programs | DIY/Activities | Clubs | How do I? | Video | Learn sUAS | Contact us

AMA Flight School Powered by: Fly Robotics

sUAS TRAINING POWERED BY FLY ROBOTICS

Complimentary Training Modules

These courses are available for free and provide valuable information relating to sUAS, as well as a preview of the layout and function of additional Fly Robotics courses.

Free Preview (Login Using Guest)

Username: Guest
Password: Guest

sUAS Information

NAVIGATION

Home
- Site pages
- Current course
  - sUASinfo
    - Participants
    - sUAS Information
    - Small Unmanned Systems Information
      - **Overview of Unmanned Systems**
      - Introduction to Small Unmanned Air Systems
- Courses

ADMINISTRATION

- Lesson administration
  - Preview

Overview of Unmanned Systems

Overview of Unmanned Systems - The Dawn of Unmanned Systems

1. ROBOTICS AND THE DAWN OF UNMANNED SYSTEMS

The idea of machines that can complete tasks with little to no supervision is not a new one. Since the invention of the wheel, man has constantly strived for the means to work "smarter, not harder". It's from this notion Robotics were conceived. The 20th century saw substantial growth into the Research and Development of Robotics. As the Technology increased, so did potential applications-One such application was the need for Robotically-Driven, or "Unmanned Vehicles"

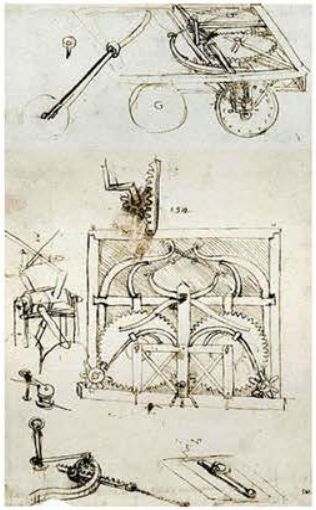


Fig. 1-1 Mechanical Drawing for Leonardo's Self-Propelled Cart circa 1498

(Courtesy Wikimedia)

Next page.

NAVIGATION

Home
- Site pages
- Current course
  - sUASinfo
    - Participants
    - sUAS Information
    - Small Unmanned Systems Information
      - Overview of Unmanned Systems
      - **Introduction to Small Unmanned Air Systems**
- Courses

ADMINISTRATION

- Lesson administration
  - Preview

Introduction to Small Unmanned Air Systems

What is a sUAS

sUAS, or Small Unmanned Air Systems, is the acronym used to describe Remotely Operated Air Vehicle (AV) weighing less than 55 lbs. We use the term "System" instead of "Vehicle" because the modern AV is only one component in a family of highly complex systems.

Next page.

ETHICAL AND SAFE SUAS AIRMANSHIP

POWERED BY

FLYROBOTICS

Aviation Safety

“Flying is so many parts skill, so many parts planning, so many parts maintenance, and so many parts luck. The trick is to reduce the luck by increasing the others..”

- John L. Baker

SAFE SUAS OPERATIONS

- BEFORE YOU FLY
  - Take the time to read all of the Manufacturer's Instructions and Literature.
  - Familiarize yourself with Lithium Polymer (LiPo) Battery Handling, Use, and Storage Procedures.
    - http://www.hobbico.com/ama-lipo-warning.html
  - If you're new to sUAS, find someone with experience to help you learn the basics of flight, or join an AMA club.
    - http://www.modelaircraft.org/clubsearch.aspx

SAFE SUAS OPERATIONS

- Familiarize yourself with Weather and its effect on sUAS.
  - Always check weather reports prior to flight.
  - Familiarize yourself with Manufacturer's Limitations on Wind.
    - If possible buy an Anemometer to measure wind velocity locally, as Weather Reports can vary over short distances.
  - Avoid flying in Rain and other forms of Precipitation.
  - Refer to your Manufacturer's Limitations for approved operating temperatures.

SAFE SUAS OPERATIONS

- Prior to Flight, select an Operational Area that is free of obstruction, and away from people and structures.
  - ENSURE YOU HAVE PERMISSION (PREFFERABLY WRITTEN) TO FLY THERE!!!
- Know your Airspace before you Fly.
  - Do not fly within 3 Nautical Miles of an Airport, be aware of all Notice to all Airman (NOTAMs).
    - It is the Operator's responsibility to be aware and obey NOTAMs.
    - https://pilotweb.nas.faa.gov/PilotWeb/

SAFE SUAS OPERATIONS

- Familiarize and adhere with FAA advisories and the AMA Safety Code.
  - https://www.faa.gov/uas/nprm/
  - http://www.modelaircraft.org/files/105.pdf

  *** While these Guidelines are not law, they are based on Decades of Safe Aviation Operations and should be adhered to at all times. Failure to comply can result in damage or harm to other AV, property, or personnel.

SAFE SUAS OPERATIONS

- *"Brief the Flight, Fly the Brief"*
  - Prior to Launch all members of the Flight Crew should discuss the all components of the impending flight, and fly the flight as discussed. If for any reason you must change the mission parameters, land the AV, brief the new mission, and fly again.
- Keep Detailed Logs of Batteries, AV, and Flights.
- Develop a Pre-Flight and Post-Flight Checklist to run through prior to <u>every</u> flight.

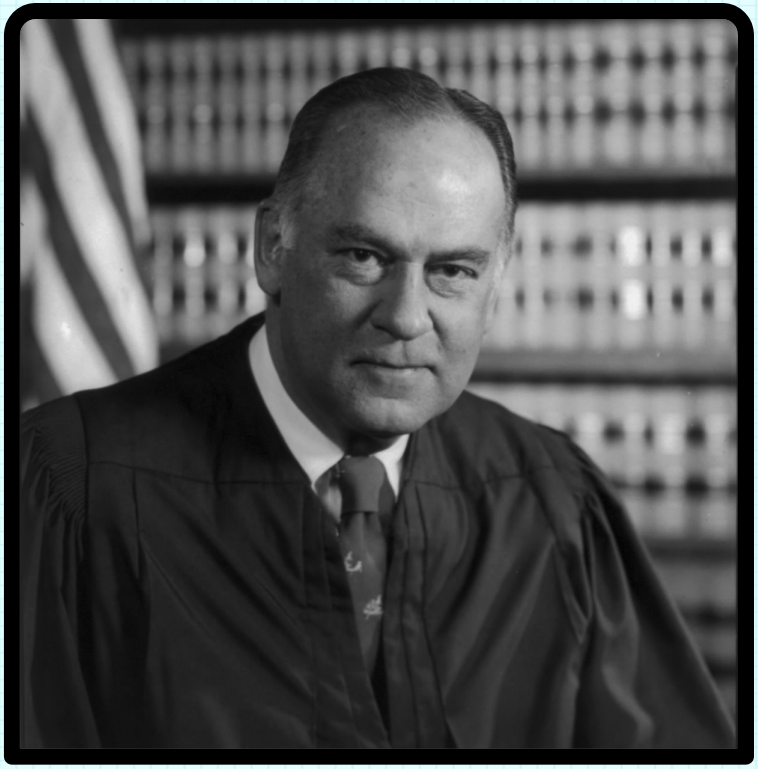
DURING FLIGHT

- AV may not exceed 55 lbs.
- AV will not be flown in a careless or reckless manner.
- AV will not be flown where sUAS activities are prohibited.
- Pilots will Yield the right of way to manned aircraft.
- See and Avoid all Aircraft and use a spotter when appropriate.
- Never fly higher than 400 feet AGL.
- Never fly within three miles of an airport without notifying the Control Tower
- Aircraft shall not be flown over people, vessels, vehicles, or structures not directly involved, and aware of the activity.
- Never fly in Visibility conditions less than 3 miles.
- Never Operate under the influence of Drugs or Alcohol (12 hrs. bottle to throttle)
- Never fly over or around Stadiums, Racetracks, or Events with large numbers of people.

What are Ethics?

“Ethics are knowing the difference between what you have the right to do and what is right to do.”

- Hon. Potter Stewart



ETHICAL SUAS AIRMANSHIP

- Ethical Behavior is the responsibility of each Pilot and the Unmanned Community as a whole.
  - Current laws do not cover every decision a sUAS Operator may have to make, nor do they keep everyone safe at all times.
  - While Laws and Regulations may set limits, they are no replacement for quality decision making.
- A strong ethical foundation leads to good judgment and wise decision making.
- Practicing sound ethical flight operations leads to:
  - Better overall Aviators
  - Fewer Mishaps
  - An overall positive image of the sUAS Community.

RISK MANAGEMENT IN FLIGHT OPERATIONS

- Quality decision making and sound judgment doesn't happen over night. Understanding our environment, identifying potential hazards, and mitigating those risks are essential to sound decision making.
- Situational Awareness (SA) - is the ability to identify, process, and comprehend the critical elements of information that describe the events and environment around us. A high level of SA is the key to quality decision making.

RISK MANAGEMENT IN FLIGHT OPERATIONS

- Sometimes the situation isn't black and white and we have to analyze the risks to determine whether or not we should proceed. Identifying and mitigating risks is another critical factor in quality decision making, we call this process Operational Risk Management (ORM)
  - Identify Hazards: *A Thunderstorm is forecasted to hit our Op Area in 15-20 minutes.*
  - Assess Hazards: *There is a high probability the high winds and precipitation will destroy the AV, and potential lighting could injure or kill personnel.*
  - Make Risk Decision: *We need one more flight to finish our training syllabus; it should take us 15 minutes to finish. Is the risk of losing the AV or injury to personnel worth completing the flight? No, it is not.*
  - Implement Controls: *Use the 15-20 minutes to secure equipment and get personnel to secure facility out of the weather.*
  - Supervise and Watch for Changes: *Monitor the Radar and Conditions outside. If the storm appears to be passing or breaking up, commence once clear. If it persists, secure and reschedule flight operations.*

ETHICAL SUAS AIRMANSHIP

- Always familiarize yourself with State and Local laws regarding Privacy and Trespassing.
  - While some States allow Loitering over Private Property at a “reasonable altitude”, other states consider it Trespassing, and you can be arrested.
- Never follow or film people without their permission.
- Above all exercise Ethical and Sound Decision Making!
  - The word “Drone” comes with a degree of stigma and public uneasiness. When in a public environment, make sure to talk to people in the area prior to launching and let them know what it is you’re doing.
- You’re an Ambassador of the sUAS Community every time you fly in public!
  - Invite people to watch your video, after you are safety on the ground, answer any questions they might have. While they might not seem like a big deal, these acts will help to calm public fear of sUAS.

SAFE AND ETHICAL OPERATIONS

- Take your time!
- Always Pre-flight your AV and Ground Equipment.
- Ensure proper handling and use of LiPo Batteries.
- Always have a Flight Plan.
- Launch and Recover in a safe area away from people and obstructions.
- Always Fly in a Safe, Ethical, and Courteous Manner!
- HAVE FUN!

Questions?

AMA FLIGHT SCHOOL

POWERED BY FLYROBOTICS

www.amaflightschool.org/