



CHUCK MCGUIRE, KARCS

- Senior Principal Engineer, Applied Physics Lab – University of Washington
- Private Pilot
- UAS Pilot
- Commander, USN (Ret), Submarine Officer
- DSRV Pilot
- ROV Pilot



TOPICS

- Academy of Model Aeronautics
- Safety Rules
- KARCS History and Location
- Agreement with Bremerton National
- Agreement with FAA Seattle TRACON
- Radio Control Technology
- Community Engagement



ACADEMY OF MODEL AERONAUTICS

- The Academy of Model Aeronautics is a world-class association of modelers organized for the purpose of promotion, development, education, advancement, and safeguarding of modeling activities. The Academy provides leadership, organization, competition, communication, protection, representation, recognition, education and scientific/technical development to modelers.
 - Chartering organization for more than 2,500 model airplane clubs across the country
 - Provides insurance and assistance in getting and keeping flying sites
 - Provides liaison with FAA, FCC and other government agencies
 - www.modelaircraft.org Headquartered in Muncie, Indiana

Congress and the FAA have recognized the AMA as an important community group and have allowed for AMA operations under the current FAA Regulations separate from UAS



SAFETY

- Extensive safety code geared toward safe operations of all model aircraft endeavors to ensure the safety of operators and spectators:
 - Radio Control
 - Free flight
 - Control line
- Key points for today
 - Yield the right of way to all human-carrying aircraft
 - Do Not fly higher than 400 feet above ground level (AGL) within 5 miles of an airport without a properly executed agreement with local FAA approach control and the closest airport
 - KARCS has an agreement in place with Seattle Approach and Bremerton National
 - RC model aircraft must use the radio-control frequencies and equipment currently allowed by the Federal Communications Commission (FCC)
 - Designated, properly sized controlled flying site to prevent overflight of people.



KARCS HISTORY

- Non-profit organization established in 1968, Incorporated in 1991
- Located in numerous locations over the years to include:
 - Kitsap Fairgrounds
 - Bremerton Airport
 - Olalla Baseball field
 - Tacoma Narrows RC club
- In 2001, Marlin Little an ARCS Club member, worked closely with Kitsap County Parks Department (KCPD) and the McCormick Land Company to locate our current site in Coulter Creek Heritage Park, named "Little Field" in his honor in 2006
- During the last 19 years, the site has been maintained and improved upon working closely with KCPD and the stewardship program in order to improve the site which now includes:
 - Road access from Sunny Slope Road
 - A permeable fabric runway 25' x 300'
 - Steel structure covering a 20' x 50' pit area and parking

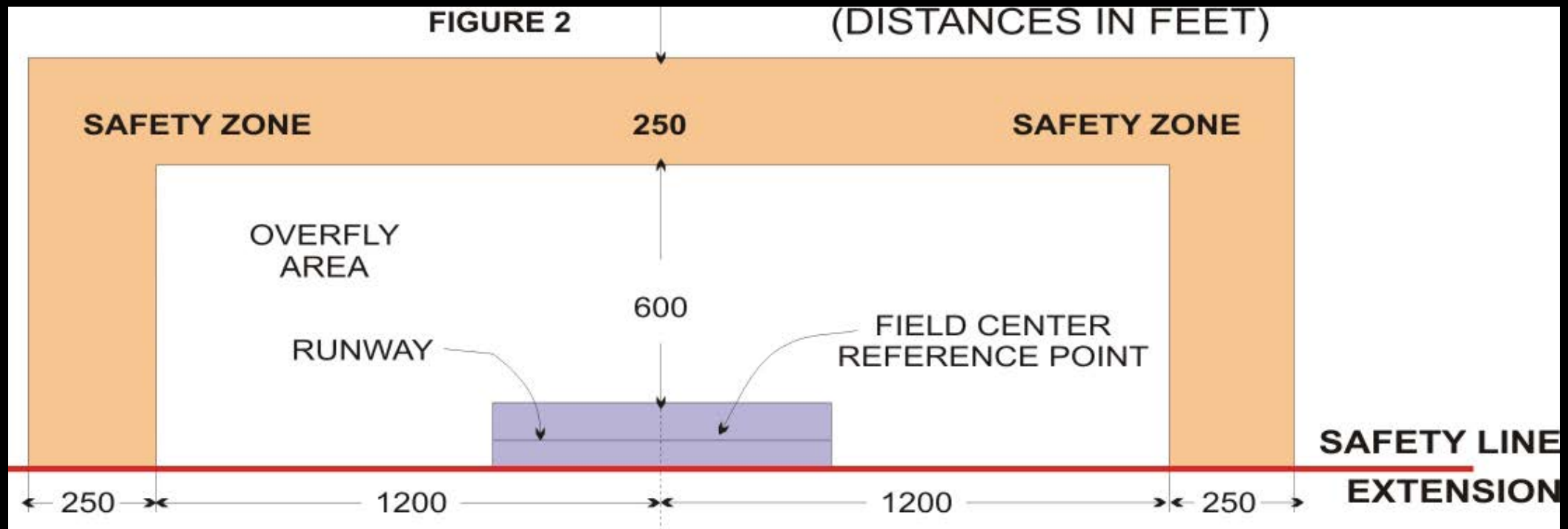


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LITTLE FIELD FLYING AREA DIMENSIONS BASED ON AMA RECOMMENDATIONS



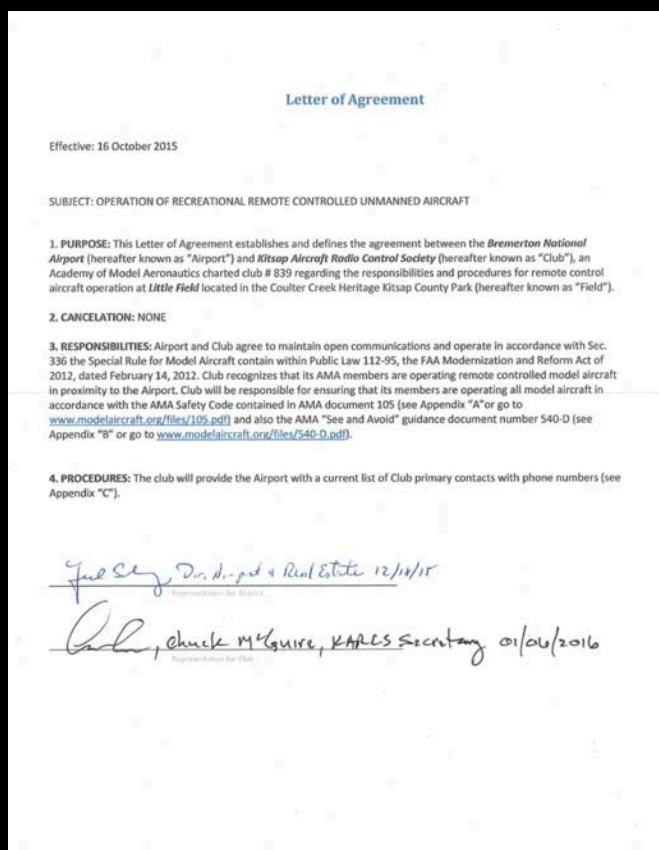


LITTLE FIELD WITH OVERFLIGHT DIMENSIONS





KARCS/AIRPORT AGREEMENT



- Placed into effect on January 6th, 2016
- Each party acknowledges the other, agreeing to maintain open communications
- KARCS will ensure members follow the AMA safety code and operate in accordance with special rule 336
- KARCS will ensure members follow AMA "see and avoid guidance"



KARCS/FAA SEATTLE TRACON AGREEMENT

Seattle Terminal Radar Approach Control and Kitsap Aircraft Radio Control Society

LETTER OF AGREEMENT

EFFECTIVE: September 13, 2019

SUBJECT: Community Based Organiz

1. PURPOSE: To establish responsib area.

2. CANCELLATION:

- a. This agreement is cancelled two may be terminated by either party s party.
- b. The FAA may immediately term safety of persons or property is con agreement.

3. SCOPE: The procedures outlined I Society (KARCS) and Seattle Termia Aircraft Systems (KAS) within Little F

4. RESPONSIBILITIES: Kitsap Air

- a. Ensure all CBO members and / procedures in this agreement.
- b. Be responsible for all CBO sign

5. DEFINITIONS: Little Field is a fi defined as follows, see attachment:

- a. Location: 8056 Sunnyslope Rd.
- b. Vertical limit: At or below 400
- c. Lateral boundaries, see attachm

6. PROCEDURES:

- a. The operating area is defined in
- b. Operating area is considered ac
- c. All operations will be at or bck

Seattle Terminal Radar Approach Control and Kitsap Aircraft Radio Control Society

d. All operations must be contained within the Little Field operational area as defined in the Attachment, and conform to all current regulations.

e. KARCS will notify Seattle TRACC at 360-813-0828 in the event of lost con will negatively affect manned aircraft o

f. All Parties must ensure that the con

7. ATTACHMENT: Kitsap Aircraft Rad Information

Larry Beck
 Larry Beck
 Air Traffic Manager
 Seattle Terminal Radar Approach Control

KC Patton
 KC Patton
 President
 Kitsap Aircraft Radio Control Society

Tom Rogers
 Tom Rogers
 Safety Officer
 Kitsap Aircraft Radio Control Society

Seattle Terminal Radar Approach Control and Kitsap Aircraft Radio Control Society

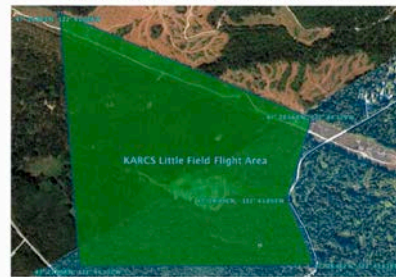
ATTACHMENT

KITSAP AIRCRAFT RADIO CONTROL SOCIETY OPERATING AREA

Operations areas starts at 47 28 221N 122 45 028W and then clockwise to 47 28 664N 122 44 129W, 47 28 496N 122 43 808W, 47 28 462N 122 43 618W, 47 27 908N 122 44 102W then to the point of origin.

All Operations Must Remain at or Below 400 AGL.

All Operations Must Remain Inside of Shaded Area Depicted Below



Contact Information

KARCS President, KC Patton: 360-268-4315

KARCS Safety Officer, Tom Rogers: 253-304-3818

Seattle TRACON Operations Supervisor: 206-214-4657

Bremerton National Airport Manager, Warren Hendrickson: 360-813-0828

- Placed into effect on September 13th, 2019
- Establishes authorized airspace from surface to 400' AGL for the operation of model aircraft
- KARCS will ensure members follow the AMA safety code and operate in accordance with agreement
- Designated Area is larger than our actual flying area to allow for a safety buffer to manned aircraft, airspace only



TECHNOLOGY

- Propulsion
 - None - Glider
 - Propeller
 - Ducted fan
 - Turbine
- Fuel
 - Electric
 - Nitro Methane
 - Gas
 - Kerosene
- Radios
 - 72 MHz FM/PCM
 - 2.4 GHz Frequency Hopping
 - 5.8 GHz Video
- Advanced Control Systems
 - Basic aircraft stabilization to complex position keeping of autonomous multi-rotor Platforms
 - Complex Micro-Electro-Mechanical Systems (MEMS) Inertial Measurement Units (IMUs)



COMMUNITY ENGAGEMENT

- Aviation education/Flight Simulator training in local schools(STEM)
 - Cedar Height Junior High School: Started in 2012 with over 200 students participating
 - South Colby Elementary: Started in 2014 with over 100 students participating
- Above program includes:
 - Student model builds culminating in flight
 - Students and Parents day at the field
- Indoor flying at Marcus Whitman Middle School Fridays, 6:30pm – 8:30pm
- Free RC flight training at Little Field for any interested parties
 - Loaner aircraft and radios available at the field during training



QUESTIONS?