

Suburban RC Barnstormers

Safety and Operational Rules Handbook June 29, 2023

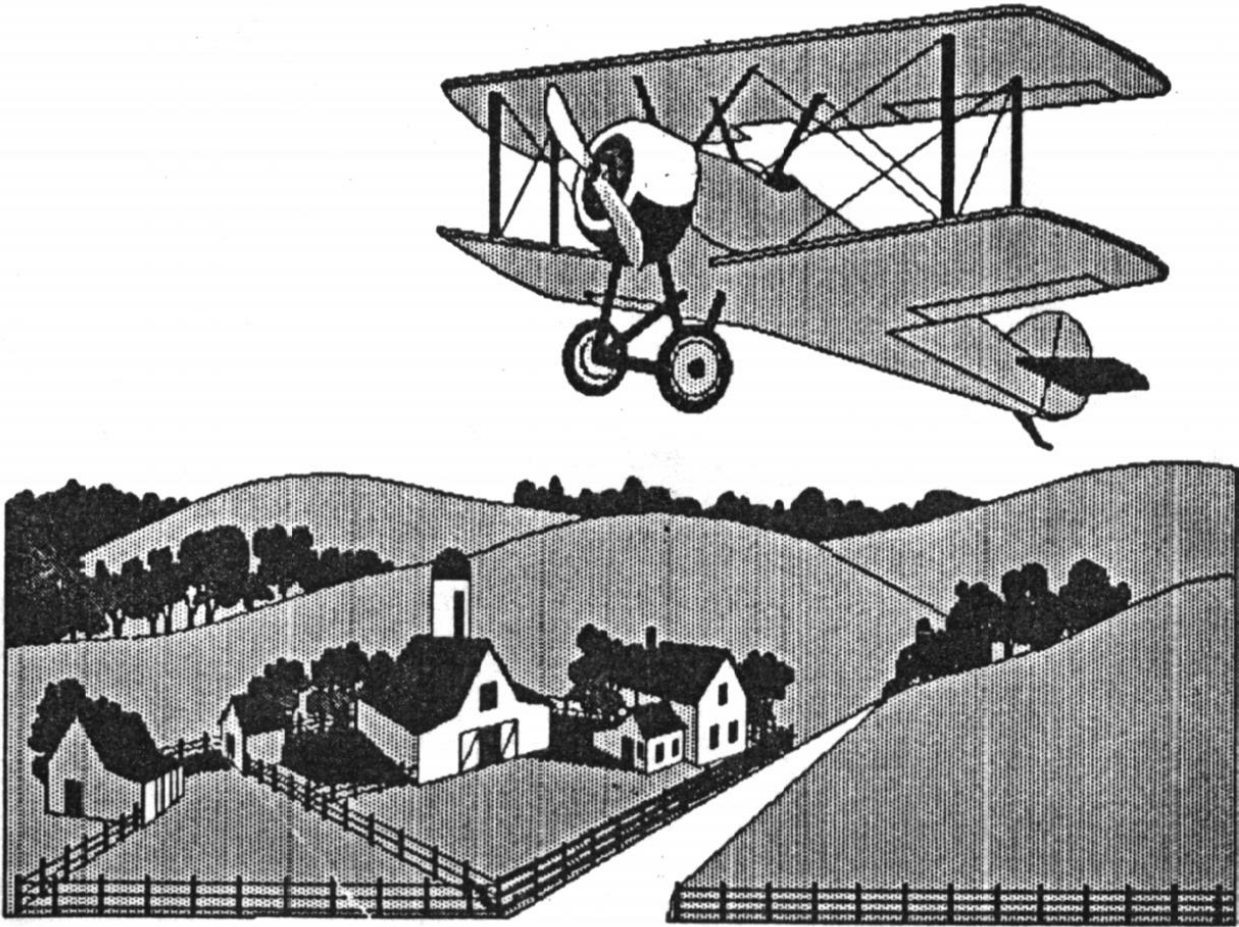


Table of Contents

| | |
|-------------------------------------|-----------|
| 1. Introduction | 4 |
| 2. Permits and Memberships | 4 |
| 3. Safe Flying Guidelines | 5 |
| 4. Model Aircraft Pre-Flight | 8 |
| 5. On the Field | 9 |
| 6. Getting Ready To Fly | 10 |
| 7. Taking Off | 11 |
| 8. Flying | 11 |
| 9. Landing | 12 |
| 10. Special Information | 13 |
| 11. LiPo Battery Care | 14 |

Disclaimer

The information provided by the Suburban RC Barnstormers in this Handbook is for general informational purposes only. All information in the handbook is provided in good faith, however we make no representation or warranty of any kind, expressed or implied, regarding the accuracy, adequacy, validity, reliability, availability or completeness of any information in the handbook.

1. INTRODUCTION

The Officers of the Suburban RC Barnstormers flying club hope you will have an enjoyable and safe time flying at the Pratt's Wayne Woods Model Airplane Field. Following the rules will not only keep our flyers safe, but spectators and on-lookers as well.

Our field and its facilities are provided by the Forest Preserve District of DuPage County (FPDDC) and is also under the purview of the Federal Aviation Administration (FAA). This is in addition to the requirement for membership in the Academy of Aeronautics (AMA). Following safety guidelines set out by these organizations and by the Barnstormers should provide us all with a safe and enjoyable time flying our aircraft.

Anyone who has any questions about safety or any other modeling subject can contact our club by sending email to: info@suburbanrcbarnstormers.com or visit our web site at www.SuburbanRCBarnstormers.com

2. Permits and Memberships

You must have a valid membership and permits with the following organizations to fly at the field:

- The Forest Preserve District of DuPage County (FPDDC)
- The Academy of Model Aeronautics (AMA)
- The Federal Aeronautics Administration (FAA)

You need not be a member of the Suburban RC Barnstormers flying club, but we would sincerely love to have you join our club if you are not already a member.

You can find membership information here:

<http://www.suburbanrcbarnstormers.com/membership.html>

FPDDC- the FPDDC requires you to obtain a yearly permit to fly both free flight and remote control (RC) aircraft at any of its fields including our Pratt's Wayne Woods Model Airplane Field. You will have to pay a small annual fee depending on your age, and you must also be a member of the AMA in order to obtain your permit. You can find permit information here:

<https://www.dupageforest.org/things-to-do/get-outdoors/model-crafts>

AMA- the AMA 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.

Importantly to us as flyers, it provides us liability insurance should an incident occur. **It is necessary to have both an AMA member card and FPDDC permit card with you at all times while flying at the field in case FPDDC Rangers request to see them.**

You can find general AMA information here <https://www.modelaircraft.org/> and permit information here <https://www.modelaircraft.org/membership/enroll>.

FAA- In addition to the AMA membership and a FPDDC permit, you must register with the FAA as a Recreational Flyer and Modeler, Community-Based Organizations if you fly an Unmanned Aircraft System (UAS) weighing over .55 pounds (250 grams) (https://www.faa.gov/uas/recreational_fliers/). You can register on-line- a small fee is required and you must as a UAS operator renew periodically. You must keep your registration with you when flying and apply your registration numbers to the outside of your plane. A Federal Agent has the right to check your registration when you are flying at the field.

The FAA has implemented a recent law. The FAA requires UAS (Unmanned Air-craft Systems sometimes referred to as Drones, Planes or helicopters) operators to pass an online aeronautical knowledge and safety test and carry proof of test pas-sage. Here is a link to the test called “TRUST” (<https://trust.pilotinstitute.com/login/signup.php>)

3. Safe Flying Guidelines

Suburban RC Barnstormer Club- the Officers and Staff of the Barnstormers hope that members and guests have a safe and enjoyable time flying their UAS at our field. Following are a few flying guidelines that are in addition to the guidelines of the FAA, AMA, and FPDDC as described below and are particular to the Pratt’s Wayne Woods Model Airplane Field. Our Club members realize that they are not policeman and their job is not to enforce the guidelines. However, on occasion a club member may notice someone flying in an unsafe manner and in what we hope is a friendly manner point out the action that is unsafe. Conversely, a guest may have a question about how to fly at the field. They are encouraged to either contact the club via email or seek out a club member who might be flying at that time and ask what the local customs are. Gaining friends who have a common interest is encouraged. The club’s general guidelines are as follows:

- There is always a limit of five pilots on the flight line at any one time. Always limit the flight line to essential personnel, such as a spotter or instructor. Chairs are not allowed on the flight line except for handicapped people.
- Always fly below an altitude of 400 feet because of the fields' proximity to DuPage County airport. Always yield the right of way to any full-scale air traffic over the field.
- Always make sure that all spectators, their pets and children are in the designated spectator area behind the fence.
- Never fly over people.
- Always perform a radio confidence test with new or previously crashed R/C gear before the first flight of a new or rebuilt airplane. Always test the full ground range of the transmitter. The published ground range for Futaba R/C gear is 500 meters. Always repeat a ground test any time a model does not seem to be responding properly.
- Do not fly near or over Sterns Road or the access road leading into the field.
- Avoid flying near the high-tension electric lines located to the East and south of the field.

FAA- The FAA has established the following guidelines (https://www.faa.gov/uas/recreational_fliers/):

- Register your drone, mark it on the outside with the registration number, and carry proof of registration with you.
- Fly only for recreational purposes.
- Follow the safety guidelines of community-based organizations.
- Fly your drone at or below 400 feet when in uncontrolled or "Class G" airspace. This is airspace where the FAA is not controlling manned air traffic. To determine what type of airspace you are in, refer to the mobile application that operates your drone (if so equipped) and/or use other drone-related mobile applications. Knowing your location and what airspace you're in will also help you avoid interfering with other aircraft. Do NOT fly in controlled airspace (around and above airports) unless:
 - a. You receive an airspace authorization for operations in controlled airspace through LAANC (Low Altitude Authorization and Notification Capability), before you fly. Learn more about approved LAANC UAS Service Suppliers for recreational flyers (https://www.faa.gov/uas/programs_partnerships/data_exchange/).
 - b. You are flying at a recreational flyer fixed site that has a written agreement with the FAA. The FAA has posted a list of approved sites (https://www.faa.gov/uas/programs_partnerships/data_exchange/laanc_facilities/) and has depicted them as blue dots on a map. Each fixed site is limited to the altitude shown on this map, which varies by location.
 - c. NOTE: Our organization has already established a letter of agreement for a fixed flying site.
- Keep your drone within your line of sight, or within the visual line-of-sight of a visual observer who is co-located and in direct communication with you.
- Do NOT fly in airspace where flight is prohibited. Airspace restrictions can be found on our interactive map (<http://knowbeforeyoufly.org/air-space-map/>), and temporary flight restrictions can be found here: (<https://tfr.faa.gov/tfr2/about.jsp>). Drone operators are responsible for ensuring they comply with all airspace restrictions.
- Never fly near other aircraft, especially near airports.
- Never fly over groups of people, public events, or stadiums full of people.
- Never fly near emergencies such as any type of accident response, law enforcement activities, firefighting, or hurricane recovery efforts.
- Never fly under the influence of drugs or alcohol

AMA- The following is the AMA Safety Code. The full AMA Safety Handbook can be found here (<https://www.modelaircraft.org/sites/default/files/documents/100.pdf>).

- I will not fly a model aircraft in a careless or reckless manner.
- I will not interfere with and will yield the right of way to all human-carrying aircraft using AMA's See and Avoid Guidance and a spotter when appropriate.
- I will not operate any model aircraft while I am under the influence of alcohol or any drug that could adversely affect my ability to safely control the model.
- I will avoid flying directly over unprotected people, moving vehicles, and occupied structures.
- I will fly Free Flight (FF) and Control Line (CL) models in compliance with AMA's safety programming.

- I will maintain visual contact of an RC model aircraft without enhancement other than corrective lenses prescribed to me. When using an advanced flight system, such as an autopilot, or flying First- Person View (FPV), I will comply with AMA's Advanced Flight System programming.
- I will only fly models weighing more than 55 pounds, including fuel, if certified through AMA's Large Model Airplane Program.
- I will only fly a turbine-powered model aircraft in compliance with AMA's Gas Turbine Program.
- I will not fly a powered model outdoors closer than 25 feet to any individual, except for myself or my helper(s) located at the flight-line, unless I am taking off and landing, or as otherwise provided in AMA's Competition Regulation.
- I will use an established safety line to separate all model aircraft operations from spectators and bystander

FPDDC- The FPDDC has developed these guidelines:

- The operation of any form of model aircraft is prohibited on District property in any area(s) prohibited on District property in any area(s) other than those designated for such use.
- All fields are designed for plane and helicopter use except for Fullerton Park, which is limited to helicopter use only, and Greene Valley, which is limited to model sailplanes and gliders only. Operators are to control aircraft from designated flight lines in accordance with selected flight patterns. The fly zones, locations and hours of the designated flying fields are listed on this brochure.
- All persons operating model aircraft while on FPDDC property must have valid FPDDC model aircraft permits in their possession. For permit information, call Visitor Services at (630) 933-7248.
- Use of designated areas shall be on a first-come, first-served basis, except when exclusive use has been obtained from the FPDDC upon written request.
- All non-electric powered aircraft must be fitted with mufflers.
- Per Academy of Model Aeronautics recommendations, aircraft that weigh more than 55 pounds or gliders or sailplanes that weigh more than 15 pounds may not be operated on FPDDC property.
- To reserve a frequency, operators should affix current FPDDC permits or pins with their names to the control stand to indicate which radio bands are being used when flying. All other radios must be turned off when not in use.
- All operators must carry their aircraft to the runway, and not taxi into or through the pit area.
- To prevent turf damage, mats or platforms must be used when fueling gasoline-powered engines.
- Operators are to yield the right-of-way to landing aircraft or to aircraft on the runway that have just landed.
- Transmitters should only be operated while persons are flying model aircraft. Operators should double check other transmitters to make sure no one is flying on the same frequency.

4. MODEL AIRCRAFT PRE-FLIGHT

Airplane Assembly- Always check at least the following Items while assembling a model airplane:

- All receiver connections, servos and battery.
- The receiver antenna wire must be fully extended and not shortened by damage or folding.
- Loose parts in the fuselage like the battery or receiver.
- All bolts used to put plane together for tightness, such as tuned pipe clamps, wing bolts, strut bolts and canopy screws.
- Engine mount, for cracks and bolts loose or missing. Muffler and carburetor securely fastened.
- Evidence of fuel leaks indicated by oily residue on surfaces where it is not expected.
- Servos securely mounted, no loose screws or servo arms.
- Raise the nose of the airplane up to reposition the "clunk" to the back of the fuel tank especially after rough landings.

Airplane Transmitter Programming- In addition to the normal programming of the transmitter to ensure the switches and sticks are correctly programmed for the desired "channel operation", we recommend that Throttle cut-off should be implemented. Throttle cut prevents the planes propeller from starting accidentally if the throttle stick is accidentally moved. I am sure many of you have been accidentally been hit by a propeller while working on a plane; have walked with the transmitter and accidentally bumped the transmitter throttle while walking to retrieve your plane, or had the plane tip over on its nose while landing and the propeller banging the ground because you did not get the stick moved to turn off the throttle. These problems can cause injury to the person and even damage the planes as high currents surge through the ESC because the throttle is telling the propeller to turn but it is being immobilized by the ground.

There are many types of planes (electric, gas, etc.), many types of transmitter manufacturers, and many types of models for each manufacture so it is beyond the scope of this manual to cover the setup for each. While I will cover Spektrum here, I recommend the reader search the web for instructions and issues related to others.

On Spektrum transmitters, the "Function Menu" contains a "Throttle Cut" function which can be implemented. Once selected you can select a switch to use. For my Dx6 and Dx8 transmitters, I usually use the "mix" switch. It is conveniently located on the back right of the transmitter and is a two-position switch. So, on the "throttle cut" menu select "mix" as the switch to use. Set it so that in the "0" position it yields a value of "0". In the "1" position, it yields the largest negative number that your particular transmitter allows. Now when the "mix" switch is in the "0" position, the throttle works normally. When in the "1" position, the planes motor will not turn regardless of how high you move the throttle stick. Now when working on your plane, set the switch to disable your plane's motor. When walking with your transmitter in your hand, set the switch to disable your plane's motor. As the plane lands, flip the switch to disable the motor.

5. On The Field

Always check at least the following items each flight:

- Battery voltage every flight. Remember, binding servos cause severe battery drains

- With the radio on and sticks neutral, try to lightly move the ailerons, rudder and elevator with your hand. If there is an excessive amount of play then there may be a linkage problem with that surface.
- Fuel leaks- excessive fuel on outside of fuselage.
- Landing gear supports, mounting bolts, wheel collars and retainers are secure, and that wheels are not damaged.
- Holes in Coverings Cracks anywhere they don't belong.
- Radio to verify all control surfaces move sufficiently and in the right direction. Listen to servos for sounds of bindings. Ensure that the correct model memory is selected on computer radios.

For wings with more than one servo, check that they are not reversed by moving the aileron stick and saying "A left turn left aileron up, right turn right aileron up". Moving the elevator stick down should cause the elevator to raise, and moving it up should cause the elevator to lower. Rudder movement should correspond to the rudder stick movement. All surface movements listed are in reference to a pilot.

- Air Retracts for air leaks by pumping system up and watching pressure gauge for a few minutes before disconnecting pump.
- Prop and spinner tightness.

6. GETTING READY TO FLY

- Never spill fuel on the ground as both two- and four-cycle engine fuels kill the grass. Use a catch tank or a return hose from the model tank vent back to the fuel supply Container.
- Always immobilize your plane before starting the engine. A common practice is to "tie down" the tail section with a rope or strap and anchor it to the ground with a stake. When possible, have someone assist you starting your engine. Doing both of these together is even better.
- Always courteously coordinate your turn to fly with the other pilots if the flight line is busy. Never start your engine until you know its' your turn. Always know which direction to take off and land and in which direction the flight pattern is being flown.
- Always start your engine in the pit or designated area. The designated starting area for Giant Scale planes is always at the flight line.
- Always ensure that your transmitter and receiver are on before starting an engine. Always point the plane toward the flying field and away from the pit or spectator area. Avoid running your engine for prolonged periods where equipment of other planes behind you will be blown around.
- Always avoid using bare fingers to spin the prop. Always keep the area near the prop clear of items like straps and wires. Always check your body for hanging items, such as; clothing, hood drawstrings and neck straps before starting an airplane. Never start engines at full throttle to prevent the plane from lunging at you when it starts
- Always adjust the carburetor, remove glow power and take tachometer readings from the rear of the propeller. Always stand to the side or rear of the plane when "running up" the engine to full throttle. Never run your engine up to full throttle when you are in front of the prop. Never reach over the prop for ANY reason once the engine is running. Stay out of the plane of the spinning prop.
- Always be patient with engine problems. Check the glow plug and fuel lines. Pull the glow plug and check for flooding. Ask someone to assist you with your problem. Never

fly a plane with a questionably running engine.

- Always stand in back of the airplane to unhook a tail tie down. Keeping the radio antenna down avoids catching it in the prop. Put your antenna up when ready to begin.
- Always hand push or carry a plane out of the pits until clear of the pit area. Never taxi planes in or out of the pit area. Always taxi at a slow, safe speed. Always watch out for people and other airplanes. Never taxi out to the field unless it is clear of people and airplanes.
- Always ask the pilots on the flight line for takeoff clearance before taxiing out on the field.

7. TAKING OFF

- It is always a good idea to have a person spotting for you on the flight line. A spotter makes for safer flying and offers numerous advantages such as the following: you never have to look away from your plane; you can have transmitter displays and settings read to you; and trims can be adjusted for you. An experienced pilot/spotter may help you save your plane if the unexpected occurs
- Always check the wind direction and its relationship to the flight line. Remember to hold some rudder into the wind when taking off or landing with a crosswind.
- Always look at your transmitter to verify that the settings such as; trims, dual rates, flaps and mixing are appropriate for takeoff. Take one more look at all the control surfaces for “normal” takeoff orientation.
- Always take off either parallel to or at a slight angle away from the flight line. Always announce that you have cleared the field once airborne. If you have problems controlling the plane during the takeoff roll, chop the throttle and abort it's take off.
- Once airborne, maintain a shallow, steady climb with wings level. When you are at a safe altitude, make your first turn away from the flight line. Never execute aerobatic maneuvers such as snap rolls during a takeoff.

8. FLYING

- Always fly in the direction of the established flight pattern. Always fly at least 20 feet in front of the flight line. If your plane gets behind the flight line for any reason, make every effort to get into the traffic pattern immediately. Never fly directly toward, the flight line, pit area or yourself.
- When flying “pattern style” turnarounds, observe the following guidelines: all other planes have the right of way; fly either above or below other air traffic; abort maneuvers that will bring you close to another plane; and make turnarounds outside of the normal flight pattern perimeter.
- Always watch your plane no matter how tempted you may get to look at something else. Never look away from your plane for more than a glance at your transmitter.
- Always reduce the throttle immediately if you hear loud vibration or buzzing noises from your plane; it may be a control surface fluttering. Flutter is a serious problem as it can cause control to be lost if the problem surface separates from the plane!
- Always bring in your plane if the engine is having problems. Save yourself a long walk or awkward “dead stick” landing. Always land immediately if any parts fall off your plane.
- Always call out for help immediately if you believe that you are losing control of your

model. A more experienced pilot may be able to save your plane. If a radio "hit" is suspected, request everyone in the pit area turn their radios off. Always be ready to turn your radio off when in the pit area for this reason.

- Always fly with confidence. When learning new maneuvers practice them a few “mistakes” higher than usual. Flying higher allows for more time to correct errors. A spotter familiar with the maneuvers you are learning is a bonus.
- Always keep airplanes at a safe altitude when people are out on the field. Never land on the field when there are people in front of the flight line. If you have a dead stick when there are people on the field, ask for them to clear it.
- Always call out "on the field" when going out on to the flying area. Look out for airplanes on final approach in case someone did not hear your call. Minimize the amount of time you are on the field. If your plane is giving you problems, take it back to the pits to fix it.

9. LANDING

- Always announce your intention to land by calling out “landing” to the other pilots on the flight lines. Always get clearance to land as there may be planes on the field or on final approach. Always be ready to abort a landing.
- Always land either parallel to or on an angle away from the flight line. Never land a plane on a flight path toward any people including yourself. Always consider the safety of people first, airplanes second. Always watch the landing path in a crosswind. Abort a landing if the plane “weathervanes” toward the flight line.
- Always use extra caution when landing dead stick. It is more important to land a plane on woods terrain with the wings level than making it to the field.
- After landing always taxi planes in front of the flight line. Never taxi behind the flight line. Never taxi straight at the flight line.
- Always remove your plane from the flying area immediately as other pilots may be waiting to land.
- Always stop the engine in front of the flight line. The ability to stop the engine from the transmitter is a nice safety feature. One method of doing this is to set up the throttle trim so that minimum trim closes the throttle fully. Throttle trim full down will then stop the engine.
- Always approach a plane from the rear to stop the engine when physical contact with plane is required to do so.
- Always return your transmitter immediately to the impound stand when done with a flight. Always ensure that your transmitter is off. Always put your transmitter back on the stand before removing your channel marker pin.

10. SPECIAL INFORMATION

- First Aid Kit Location and Contents

There is a first aid kit in the transmitter stand. The stand is locked with a combination lock. The combination is public domain to all club members. If you need to know the combination ask another member or club officer. The first aid kit normally contains the following list of supplies:

- Adhesive bandages
- Ace “stretch wrap”
- Ice Packs
- Alcohol pads
- Gauze bandages 4 by 6 inch
- Gauze wrap bandage
- Polysporin, an antiseptic salve
- Scissors
- Bandage Tape
- Wash cloth
- Bottle of water
- Eye wash
- Common pain relievers (aspirin, ibuprofen)

Take it upon yourself to know how to treat injuries that could happen at a flying field. For example: cuts, burns, foreign matter in eyes, sunburn, insect stings. For specific treatments, consult a book on First Aid. If you become injured, ask for someone to help you. If you see someone else insured, then offer your assistance to them. If you become injured, it may be a good idea to immediately end your flying day. Never fly airplanes when injured.

- Nearby Hospital

- Northwestern Hospital Delnor Hospital, 300 Randall Road, Geneva, IL
- Main Number (630) 208-3000
- Emergency Room (639) 208 4000
- The hospital location is 1 Mile South of 38 on Randall Rd.

The following is the best possible route to get there:

Powis Rd. South (left) to Army Trail Rd; Army Trail Rd. West (right) to Route 25 South (left); Route 25 to Route 64 north Ave. West (right); Route 64 West to Randall Rd. South (left).

- Nearby Immediate Care Facility

- Advocate Sherman Immediate Care
- 2000 McDonald Road
- South Elgin, IL 60177
- 224- 783 5000

- Nearby Immediate Care Facility

- Northwestern Medicine Immediate Care
- 2900 Foxfield Road Suite 100
- St. Charles, IL 60174
- Across from Church Parking Lot

Suburban R/C Barnstormers Safety and Operational Rules Handbook

- Sterns west to Dunham
 - South to Kirk
 - Kirk to facility
 - 630 377 6500
- To direct emergency people to the flying field:
 - Pratt's Wayne Woods Model Airplane Field Entrance on the South side of Sterns Road at sign "Pratt's Wayne Woods Model Airplane Field"
 - Located just off of Sterns Road
 - On a FPDDC entrance road,
 - 0.7 miles West of Powis Road, or 2.5 miles west of route 59

11. LIPO BATTERY CARE

The storage, use, and charging of LIPO batteries is very important. They are very volatile, and can easily start a fire or explode. Proper care of a LIPO battery can also extend their life and usefulness.

- Never let your batteries discharge below 3.2 volts per cell
- Don't leave it constantly on charge
- Be careful in connecting batteries to a charger by observing polarities of the battery, charger, and connecting leads
- For batteries having greater than one cell (1s), use a balanced charger
- Don't store batteries at full charge- maybe 60%
- Dispose of batteries in an approved container- Best Buy has battery disposal containers at their stores that are free to use
- Dispose of batteries that become puffy
- Never leave a battery unattended while charging
- Always use a fire proof LiPo safety bag, metal ammo box, or other fire proof container when you are charging, discharging, or storing your LiPo batteries.
- A LiPo fire is a chemical fire- always keep a Class D fire extinguisher nearby your charging station
- Never store your batteries at high temperatures like a hot car
- Never leave batteries where they can be accessed by young people that do not know how to properly handle them