FLIGHT TRAINING HANDBOOK

The DCRC Flight School

3/2016

WALT GOOD R/C FIELD

2016 FLIGHT TRAINING HANDBOOK

DCRC RADIO CONTROL CLUB
GERMANTOWN, MARYLAND

The purpose of this handbook is to provide an outline of the formal flight training courses offered, describe training day procedures and requirements, and the field rules. The flight training programs available for the 2016 season are Primary Flight School – Fixed Wing and Secondary Flight School – Fixed Wing. Formal flight training takes place on Saturday mornings April 23rd through October 22nd, see the Training Calendar for dates. All flight training takes place at Walt Good Field, 16200 Schaeffer Road, Boyds Maryland 20841 except the September 10th session, which takes place in Bealeton Virginia at the Flying Circus Aerodrome, 5114 Co Rd 644, Bealeton, VA 22712.

FLIGHT TRAINING PROGRAMS

Primary Flight School – Fixed Wing (PFS)

The object of this flight-training course is to prepare DCRC club members for participation in Secondary Flight School. The course teaches students how to fly DCRC provided training aircraft safely, provides an understanding of model aircraft, equipment, ground procedures (pre-flight), and the limitations of model aviation. This course is organized in a progressive series of lessons that will enable students to gain insight and understanding in easy steps. DCRC provides all aircraft and equipment necessary; participants should be at least 12 years old as of April 1, 2016 and should bring plenty to drink and any food desired. No personal aircraft are flown during Primary Flight School training sessions.

Secondary Flight School – Fixed Wing (SFS)

Secondary Flight School is the final phase of formal flight training with DCRC, and students must quality for the program. SFS is a fast-paced program designed to prepare advanced Student Pilots for solo flight and a lifetime of safe model aircraft operation. Students enrolled in Secondary Flight School demonstrate intermediate or higher proficiency in all eight Primary Flight School course elements. Student Pilots use and maintain personal aircraft and equipment throughout SFS training – DCRC can provide buddy boxes, otherwise club assets are not utilized.

A $50.00 Equipment and Consumables Cost Offset Fee is required of all Flight School students, due at first sign-in. This is a one-time fee for the entire 2016 season.

TRAINING PROCEDURES

An email will be sent to all registered students at least 12 hours before each training session to "call" the training day; go or no-go. A no-go call is usually weather related.

Flight School training sessions are limited to 20 students per day – get there early. If the student load is full when you arrive, you may sign up for a "standby" position. Oftentimes, one or more students need to leave before training concludes, and those in standby can take a vacated spot in the training rotation. Students must provide their own transportation to Walt Good Field. Personal transportation must remain at the field for the duration of the stay. Persons under legal driving age must be accompanied by a parent or guardian at all times while on the premises.

Student Evaluation: All students must display the comprehension, attention, concentration, motor skills, and adherence to instruction and safety requirements required by DCRC flight instructors and ground crew to safely participate in the flight training program. The level of student adherence to instruction and/or skill level will determine which DCRC Flight School aircraft type the student operates. Students participating in Primary Flight School may operate electric, and gasoline powered aircraft.

Times: Primary and Secondary Flight School

Gates open between 7:00 AM and 7:30 AM
Check-in begins at 8:00 AM
Check-in ends at 8:40AM. No students accepted after 8:40AM
Pilot Briefing begins at 8:45 AM and ends by 8:55 AM
In-air flight training begins at 9:00 AM
The last training flights start no later than 12:40 PM
Primary and Secondary Flight Schools conclude at 1:00PM

PRIMARY & SECONDARY FLIGHT SCHOOL FIELD PROCEDURES

Arrival:

The gate is usually open by 7:30 AM. Primary and Secondary Flight School students should arrive well before 8:00 AM for check-in.

Check-in: *Located in the Gazebo*

Upon arrival, **immediately** check-in with the Training Administrator to:

Complete any paperwork

Suggestion: Flight School students: bring your membership cards (AMA and DCRC), completed Training Waiver, and Offset Fee of $50 (cash, check, or MasterCard/Visa) to your first training session and your paperwork is done for the entire year!

Receive your flight rotation vest

Receive a clipboard and Pilot Progress Card

Take your clipboard and hang it on the Flight Rotation Board according to your flight rotation number

Student Pilot Briefing: *Located in the Gazebo*

All students must attend the Pilot Briefing each training day. This briefing will explain the field facilities for the models and people, along with the field rules and field procedures for safe and courteous operation. Safety issues and other items of concern for the day are included in the Pilot Briefing.

Pre Staging: *Located behind the safety line* (start of a rotation)

Pre staging is where students spend time in between in-air flight training sessions. Remain behind the safety line (the fence along the parking lot perimeter). The gazebo is a good place to be. If you wish to help with the training program in between in-air flight training sessions, we welcome your support! Just inform the Training Administrator during sign-in. Otherwise, keep yourself out of the sun, away from the pits and flight line, and relax! Your time in pre stage should range from 20 to 40 minutes per rotation.

Staging: *Located in a staging area near the flight line*

The Flight School Coordinator will call you to move to a pre-flight staging area shortly before each of your training flights. Make sure you are in the gazebo and attentive as your spot in the training flight rotation nears. If the Flight School Coordinator is unable to stage you after two calls, you will not fly during that training flight rotation. During staging, two students are assigned to an aircraft as a student "team".

Pre-flight: *Located in the pits*

One student from each "team" will perform pre-flight aircraft inspection and preparation procedures with ground crew supervision and instruction. Students switch pre-flight duty each training flight rotation.

In-air Flight Instruction: *Located on the flight line*

Once pre-flight is complete, the two students walk to their flight line position with their Instructor Pilot. Ground Crew stage the aircraft on the taxi way. The first student to fly of each two-student team will hand-off their controller to the second student when instructed by the Instructor Pilot. Students fly for approximately 7 minutes each rotation. Both students are to remain with the Instructor Pilot for the duration of the flight. Upon flight conclusion, both students walk back to Staging. The Flight Instructor will update student Progress Cards and debrief both students on the flight. Students now return to pre stage - please do not loiter in the staging area or pits after your Instructor Pilot debriefing.

PRIMARY & SECONDARY FLIGHT SCHOOL PROGRAM DESCRIPTIONS

PRIMARY FLIGHT SCHOOL – Fixed Wing

Primary Flight School is a multi-step course attended over multiple days. Student Pilots never perform take-off or landing procedures in Primary Flight School. Students learn the safe operation of model aircraft power systems: electric motor and/or internal combustion engine. Here are the course elements:

RADIO AND FIELD PROCEDURES

This course element provides instruction on such items as aircraft assembly, radio operation and range check procedures, field rules, and the flight pattern. Student understanding of proper radio, field procedures, and the safe operation of model aircraft is the primary "take-away" learned during this lesson.

AIRCRAFT PREFLIGHT

Just as the title suggests, the proper preparation and inspection of model aircraft prior to flight is the core of this course element. Students prepare the aircraft for flight by first inspecting the airframe for any damage or loose hardware. Proper control surface operation and battery condition is inspected. The aircraft is fueled and engine operation is checked. The ability to identify any safety issues is the goal of this lesson. The demise of many model aircraft can be prevented through thorough preflight procedures.

FLIGHT BASICS

The goal of this course element is to get the feel of flying the model and begin to understand the dynamics of model flight. During this lesson your instructor will explain the controls and what kinds of reactions you can expect. The Instructor Pilot will fly the aircraft to a safe altitude and have you take the controls. By using a "buddy box," the instructor will keep you out of trouble. Just relax and get the feel of the controls. Listen to your instructor. He or she will "talk" you through each control function and you will observe the plane's responses. If you get nervous, which happens occasionally, tell your instructor and he or she will take the controls. *Remember, all you want to do during this course element is get the feel of flying the model and begin to understand the dynamics of model flight.*

FLIGHT MANEUVERS

After you have gotten the feel of flying the model, your instructor will teach you the five basic maneuvers required to get around the sky. They are:

1. Level flight
2. Banked turns
3. Straight climbs
4. Gliding
5. Climbing turns

As you progress through flight maneuver training and beyond, flying within the flight pattern is your first priority. The flight pattern is a rectangular pattern around the field in a certain direction relative to the runway. Your instructor will explain the requirement and help keep your aircraft within the flight pattern as necessary. Your instructor will also explain disorientation. This is a problem that everyone experiences sooner or later in flying models (usually sooner). Basically, disorientation occurs when you become confused about the orientation of the model. For example, when the model is coming toward you and you start a left turn, the model will turn left, but it will move to your right! Experience will teach you how to respond to this problem. It's like learning to balance when riding a bicycle. *Learning directional control when the plane is heading towards you takes practice.*

ACCURACY MANEUVERS

Now that you can fly around and do the basic maneuvers, it's time to start learning how to control your model with precision. Again, you will be working with the five basic maneuvers, but now turns should be more exact (90 or 180 degrees) at a constant altitude. *The whole idea of this course element is to improve your skill and ability as a pilot.*

Suggestion: Once you are training on Accuracy Maneuvers, it is time to get your own training aircraft. You are likely to enter Secondary Flight School soon! Talk with your instructors for first aircraft recommendations.

ORIENTATION MANEUVERS

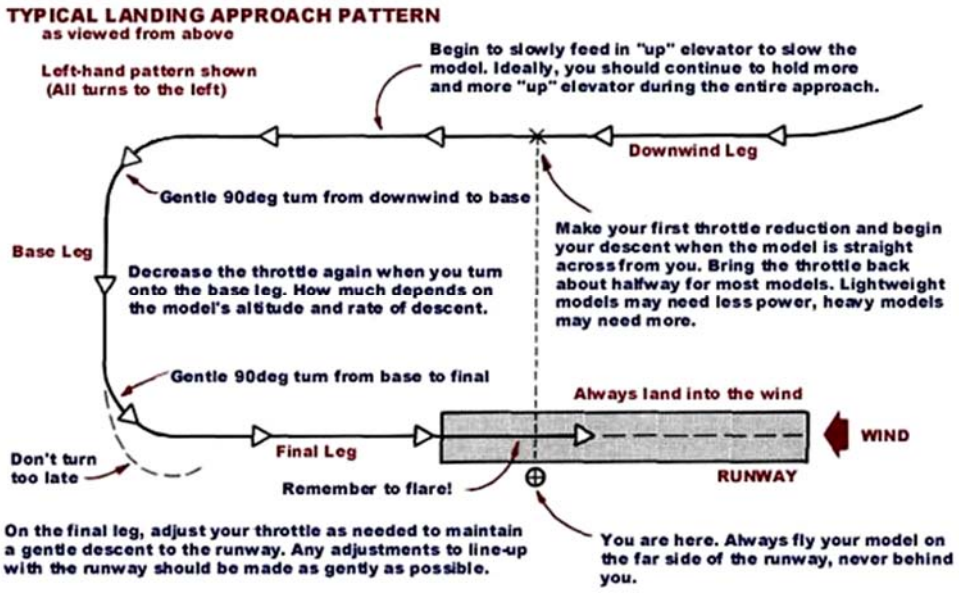
During this course element your instructor will have you fly a figure-8 pattern and a rectangular pattern. *The purpose of these maneuvers is to discipline your reflexes and judgments*. Decide to really master these maneuvers. Their importance will soon be evident.

STALLS AND RECOVERY

"If you pull back on the stick, the airplane goes up. Pull back some more and the airplane goes down!" That's a stall. But there's a little more to it and in this course element you will learn to *recognize and recover from stalls*. More important, you will learn how to avoid unintentional stalls. Each airplane has different stall characteristics but the concepts are the same.

APPROACHES TO LANDING

In this course element you instructor will discuss how to land your model. You will fly a rectangular pattern again, and this time you will learn how to make a descent in preparation for landing. You'll get to practice this maneuver up high and as you become comfortable with it, the altitude will get lower. A good landing is always preceded by a good approach. Students DO NOT actually land aircraft during this course element. *As with full size airplanes, attitude controls speed and power controls altitude.*



SECONDARY FLIGHT SCHOOL – Fixed Wing

Secondary Flight School (SFS) is the final phase of formal flight training with DCRC, and students must quality for the program. SFS is designed to prepare advanced Student Pilots for solo flight, DCRC Pilot Certification, and a lifetime of safe model aircraft operation. Students enrolled in Secondary Flight School demonstrate intermediate or higher proficiency in all eight Primary Flight School course elements. Student Pilots use and maintain personal aircraft and equipment throughout SFS training – DCRC can provide buddy boxes, otherwise club assets are not utilized. SFS participate in the Primary Flight School student rotation, but operate personal aircraft. Secondary Flight School is operated in conjunction with Primary Flight School, during the same hours.

SFS QUALIFICATION

Equipment:

Student equipment must qualify for the SFS program

1. Equipment must:
    a. Be the correct field equipment for the type of aircraft and power system
    b. Be in good working order (aircraft passes pre-flight inspection, field equipment works correctly)
    c. Be in sufficient quantity for the training session (enough fuel, batteries charged)

SFS equipment qualification inspection takes place before or during PFS Ground School (resource permitting), or after flight school hours.

Student:

Students may qualify for SFS in one of two ways:

1. The Primary Flight School Instructor Pilot transfers the student to SFS
    a. Student earns at least an "Intermediate" rating on the following Primary Flight School course elements:
        i. Radio & Field Procedures
        ii. Preflight
        iii. Flight Basics
        iv. Flight Maneuvers
        v. Flight Accuracy
        vi. Orientation Maneuvers
        vii. Stalls
        viii. Approach
        ix. Student consistently demonstrates the following (without reminders). :
            1. Courtesy calls (takeoff, landing, on the runway, etc.)
            2. Flies the pattern

SFS QUALIFICATION (continued)

Student (continued):

2. Student performs an SFS Evaluation flight using club-owned aircraft:
    a. Administered by a DCRC SFS Evaluation Instructor during a PFS training session
    b. Demonstrate the following:
        i. Enter runway approach parallel to the runway and in-line with the runway (both directions)
        ii. Recognize and correct when approach is NOT parallel to the runway (both directions) – instructor may create an incorrect approach for the student to correct
        iii. Perform runway approach lined up with a consistent glide slope (both directions)
        iv. Fly the plane down the entire runway, within the tarmac boundaries, at approximately 20 feet in height (both directions)
        v. Stall and properly recover the aircraft – performed at safe altitude
        vi. Correct for reasonable wind gust and direction changes – may require higher altitude on calm days
        vii. Consistently demonstrate the following (without reminders):
            1. Courtesy calls (takeoff, landing, on the runway, etc.)
            2. Fly the pattern

SFS COURSE ELEMENTS

BASICS

Demonstrated at least once during each training session

1. Radio & Field Procedures
2. Preflight
3. Rectangular pattern
4. Level flight

TAKE-OFF

1. Call takeoff
2. Perform takeoff roll within one wingspan of centerline
3. Rotate at speed
4. Smooth climb-out (below 30 degrees)
5. Merge into the pattern

APPROACH & LANDING

1. Call landing
2. Enter runway approach parallel to the runway and in-line with the runway (both directions)
3. Recognize and correct when approach is NOT parallel to the runway (both directions)
    i. Instructor may create situation
4. Perform runway approach lined up with a consistent glide slope (both directions)
    i. Correct for reasonable wind gusts and direction changes
5. Flare & Touchdown (pattern direction only)
6. Taxi to pits
7. Engine (or motor) Kill BEFORE aircraft enters into pits

SUPERVISED SOLO

Your instructor will monitor this lesson and assist you when necessary through the buddy box system. The Supervised Solo course element goal is to bring the Student Pilot skill level to the point of performing the following without physical or verbal instructor correction:

1. Consistently perform proper Basics, Takeoff, Approach & Landing course elements plus:
2. Consistently touch down within an area agreed upon by student and instructor

Performance of a Supervised Solo Flight without instructor correction is an unassisted solo flight. Once at least three consecutive unassisted solo flights are completed successfully, it's time to graduate from DCRC Flight School. Go and perform the DCRC Pilot Proficiency Demonstration for an examiner, you're ready!

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*Walt Good Field is **OPEN** to air operations during IPP Sessions.*
*Walt Good Field is **CLOSED** to air operations during Flight School.*

The DCRC Flight School

Formal Fixed Wing R/C Flight Instruction

9:00 AM to 1:00 PM

April 23 through October 22, 2016

04/23/2016	07/23/2016
05/14/2016	08/20/2016
05/28/2016	09/10/2016*
06/11/2016	09/24/2016
06/25/2016	10/08/2016
07/09/2016	10/22/2016

*Special Location – Bealeton VA!

Introduction to Fixed Wing Radio Controlled Flight (IPP)

***10:00 AM Start*, Conclusion by 3:00 PM**

Introductory Flights – Free and Fun
Try it, You'll Like It!

8/13/2016

Open to adults and minors 12 and older.
Just show up at Walt Good Field by 10:00 AM!

WALT GOOD R/C FIELD

FIELD AND FLIGHT RULES

DCRC RADIO CONTROL CLUB
GERMANTOWN, MARYLAND

MODEL AIRPARK HOURS OF OPERATION
8:30 AM until dusk, Monday – Saturday.
9:00 AM until dusk on Sunday and Federal holidays.

General Rules

1. All model aircraft operation must be in accordance with the official Academy of Model Aeronautics[ii] (AMA) Safety Code[iii] and the DCRC Field and Flight Rules[i] (this document)
2. All pilots must be current members of the AMA
3. All pilots must have a current AMA Card and either a current DCRC Club membership or be a guest of a pilot with these credentials when engaged in flying activities at the Club field
4. Safe operation of a model airplane is demonstrated by the pilot proficiency test for airplanes only
5. Safe operation of a model helicopter is demonstrated by the pilot proficiency test for helicopters only
6. These tests are administered by club designated DCRC Certified Pilot Proficiency Test Conductor
7. DCRC members or guests who have NOT passed the corresponding proficiency test may only fly while accompanied by a certified DCRC member (airplane or helicopter respectively)
8. Transmitters operating on the 2.4 GHz frequency may be utilized without Frequency Control
9. Transmitters operating on any other frequency are prohibited
10. Model aircraft will be flown within visual line of sight by a pilot who watches and maintains control of the aircraft during flight
11. No pilot will fly their aircraft outside the designated flight box area
12. Drone aircraft that fly autonomously, using GPS to navigate a complex flight path without human control are prohibited from flying at the field
13. **<u>NO SMOKING</u> OR OPEN FLAME IN THE PITS AND <u>WITHIN 50 FEET OF AIRCRAFT OR FUEL</u>**

Flight Operation and Safety

Fixed Wing Aircraft

1. Safety shall be the primary concern and responsibility of all members
2. **No more than Five (5) fixed wing aircraft in the air at one time**
3. Takeoff and Landing shall be essentially parallel to the flight line. The direction shall be determined by a consensus of the flyers present
4. **No flight operations are allowed behind the flight line or over the pit/parking area**
5. Pilots shall control their aircraft while standing on the designated pilot blocks behind the safety fence
6. As a courtesy, relay to other pilots your intentions regarding takeoff, landing, dead stick, and similar flight operations
7. Dead stick landings have priority over all other traffic
8. Prolonged engine operation is not allowed in the pit or pilot area
9. No taxing in the pit area
10. Aircraft with obvious defects or problems should not be flown until the aircraft is fully air worthy
11. Spectators should stay behind the pit area, and animals must remain behind the pit area
12. Spectators may make brief visits inside the pit if accompanied by a DCRC club member
13. RC COMBAT IS NOT ALLOWED AT THE DCRC FLYING FIELD.
14. There will be no activity or engagement between two (2) airplanes and there will be no streamers attached to the model.
15. A combat type of model may be operated as any other model

Turbine Aircraft

1. Turbine aircraft pilots must display a current AMA waiver
2. Model turbine engines shall not be started without a fire extinguisher within arm's reach
3. Starting must be performed in designated start up areas only
4. Engine Failsafe - Set according to engine and radio instruction manuals. The AMA rules for operating

turbines call for automatic shutdown if "lost link" occurs for 2 seconds

Rotary Wing/Helicopter Aircraft

1. **No more than Five (5) rotary wing aircraft in the air at one time**
2. Aircraft shall be flown in the designated rotary wing/helicopter area
3. Multi-rotor aircraft follow the rotary wing rules
4. Aircraft shall be hand carried from the pit area to the flight line

Sound Rules

1. Montgomery County's 65 dBA sound limit, as measured at the property line, cannot be exceeded by any activities at the field
2. Models will comply with AMA sound rules which are "96 dBA measured at three meters from the center line of the model with the model standing on the concrete or macadam, and 94 dBA on an earth or short grass surface." If the model exceeds the ground based testing, the model must undergo additional in-the-air sound measurements administered by the DCRC Sound and Safety Officer. Gas powered models shall not exceed 73dBA as measured from the designated measurement point in the pit area while the model is flown over the trees forward of the flight line in the following manner:
    a. Models capable of Aerobatic flight will fly a vertical figure eight maneuver
    b. All other Models will fly a high-Speed pass
    c. Test maneuvers will be flown at the maximum performance level of the model
3. 40% and bigger models must have a 3 blade prop and a set of canister mufflers, all 35% models must have a 3 blade prop or a canister muffler

SAFETY IS NO ACCIDENT

[i] District of Columbia Radio Control club (DCRC) has the written authority to manage the model flying facility
[ii] Academy of Model Aeronautics (AMA) provides the insurance coverage required by the County for all field users
[iii] The AMA Safety code can be found at www.modelaircraft.org