

# Introduction

The Flight Training Manual of the Oakville Model Flying Club is an introductory brochure containing a history of the club and a detailed outline of the Wings Instructional Program. The 1993 edition is the second printing of the Manual, which was originally published in 1981. This edition contains an updated history section, as well as reflecting all changes made to the club's flying field procedures and the Wings Program in the years since 1981.

This booklet is dedicated to all those in the club who, year in and year out, selflessly give of their time and resources to promote the hobby / sport of model aviation, and to further the benefits gained by all members of this club.

It is our hope that you, a new member of the Oakville Model Flying Club, will enjoy your association with us. You will find help and advice available for the asking. All we request is that you, in your turn, help others enjoy this recreation to the fullest.

## Club History

The Oakville Model Flying Club Incorporated (OMFC), affiliated with the Model Aeronautics Association of Canada (MAAC) and a charter member of that body, has as its main purpose the advancement and safe enjoyment of all phases of model aviation. This objective is achieved through the cooperation of the members with national and international modelling organizations and the general public.

Founded on May 3, 1956, from a modellers' group originally formed in 1947 by the late Warren Hitchcox, the reorganized body assumed the name "*Oakville Model Flying Club*" and boasted a membership of six modellers. Al Cook was elected as the first club president.

At that time, control-line flying was the major interest, and flying was done at the park behind the Oakville Arena at Rebecca and Kerr Streets. After a year of increasing activity, noise complaints led to the relocation of the flying site to an area on the south side of the Queen Elizabeth Highway (at the present location of the Trafalgar Village Shopping Centre), which served the club until 1960.

During these years, radio control (R/C) was gaining in popularity and some of the members began to build aircraft and boats utilizing this method of control. The first R/C field was located at the farm of the late Mr. Stan Gorman on the north side of Highway 5, west of the Sixth Line. Although the actual strip was quite small, it proved adequate since most aircraft were hand launched at that time. The popular plane of the period was the Debolt Champ with a K & B .15 engine and a two channel radio. Because of the large batteries required, these aircraft weighed around five pounds, but, with a little coaxing, would do loops and rudder rolls.

Boats were operated in the river mouths at Oakville and Bronte harbours and at a pond, north on Still's Lane from the Lakeshore Highway West. On a nice Sunday morning it was difficult to decide whether to run the boats, fly R/C or fly control-line, as several club members were active in all three phases of the hobby.



*The Oakville Model Flying Club as it appeared in 1961. Yes, that's the whole club!! Back row center is Jim Burt, and Al Cook is middle row, second from right.*

In 1960, a better R/C field was found on the property of the Shell refinery. This strip was graded and smoothed out to permit take-offs and landings. It was on this field that our first big R/C contest was held. Unfortunately,

the club was obliged to relinquish the use of this property when crashes occurred inside the refinery.

Returning to Mr. Gorman's property, the club obtained permission to grade and level the landing strip. The strip was seeded and proved an excellent site through 1962 and 1963. On Sunday afternoons, many modellers and their families gathered there for flying and picnic suppers. It was from this field that Doug Johnston's DeBolt Champ, caught in a thermal, disappeared into the blue. About a week later, Doug had a call from a gentleman in Rochester, N.Y., who had found Doug's plane on the beach near his home!

When a breeder of mink on the adjacent farm complained about the noise, the club moved to a new site on the farm of Mr. Anson Devlin at the corner of Fourth Line and Baseline Road. After seeding, this strip became our home until 1966, when the farm was sold. There were still some R/C boats being operated at this time and the club took an active part in the R/C boat demonstrations held yearly at the Canadian Boat Show at Exhibition Park in Toronto.

In 1967, our North Field at Drumquin Park was acquired in cooperation with the Oakville Parks Board. With the advent of regional government, this property became part of Milton, and current use of this field, as well as its maintenance, is handled jointly by the Milton Parks Board and the Oakville Model Flying Club. The North Field, because of its parking and camping facilities, is the site of all our contests and meets. These include annual Fun Flies, Scale Rallies and Pattern Contests (OMFC has traditionally hosted the MAAC SE Zone Pattern Championships). Also held annually at the Drumquin site is the club's Demo Day, where OMFC puts on a two to three hour model Air Show, some years to crowds in excess of 1000 spectators! The North Field is also the site of the Club's training facilities, with most evenings of the week and part of the weekend being reserved for our student pilots.

By 1975, the club membership had reached the point where it was difficult to get in more than one flight on a Sunday afternoon, so it became necessary to find an additional flying field. Through Mr. Hays of Hays' Farm on Highway 5, we were able to acquire the site which is now our South Field, at the north-west corner of Highway 5 and Trafalgar Road. Currently this field is used daily from dawn to dusk by individual flyers, but club events are not held there because of the limited parking facilities.

In the late 1980's crowding pressures had begun to grow at our fields again. The club's membership kept growing year by year. Part of

Drumquin Park was given over to a BMX (bicycle) track, and the Golf Club purchased part of the ravine. Our flitelines had to be realigned and the size of our airspace was reduced. At the South Field, we began to see plans for major developments by the Town of Oakville on the south-west corner of Highway 5 and Trafalgar Road. This was just across the road from our flying field, and the writing was on the wall.

In the early 1990's the Town of Oakville purchased a large tract of land on the south-west corner of Fourth Line and Burnamthorpe Road, and announced plans to develop this property into a huge recreational area. The Club petitioned the town for the use of part of this land as a future "West Field". However, at the present time, all work is on hold due to the uncertain economic climate.

Becoming a chartered member of MAAC when Ted Hignell was president, the OMFC has attempted to improve the hobby through input to this national organization. The Wings Instructional Program, started in 1972, has enjoyed widespread acceptance across Canada. In this program, as in full-scale flying, a new pilot must fly with an instructor until he can safely take off, fly a prescribed pattern and land, thereby winning his wings. This program has produced many proficient, safe flyers with a minimum of broken aircraft and the resulting disappointment. A recent new offering, the Advanced Training Program, takes flyers beyond the Wings Program and into disciplined basic aerobatics.



*The 1990 Instructing Staff and about a third of their students. A/most as many here as in the whole club in 1961! Front row center is Art Blackburn, long-time Instructor and CFI until 1993.*

In the nearly forty years since 1956, club membership has grown from the original six to over 225 open and junior members. Meetings are held on the first Monday of each month from October to May at Knox Presbyterian Church in Oakville. Except for special events, flying at the club fields is unscheduled and takes place principally in the period from April to October. Rules, applicable to all flyers, are posted in the pit areas of all fields, as well as being distributed to all members in a Field Guide handbook. The club publishes a newsletter, entitled "The Fliteline", monthly from October to June and once in the summer. The Fliteline provides information on all of the club's business proceedings, as well as giving coverage to major club events, monthly meetings and where possible, 'how-to'articles of interest to members. In 1985 OMFC and the Fliteline gained international recognition by being awarded the Model Airplane News 'Club of the Month' award for its newsletter.

## Club Presidents

1956-57	Al Cook	1976-77	Don Wray
1958	Warren Hitchcox	1978-79	Dennis Souder
1959-60	Sig Hubenig	1980	Jack McGregor
1961-62	Jim Burt	1981-82	Gerry Duncan
1963-64	Al Cook	1983-84	Philip Soden
1965-66	Harold Peerenboom	1985	Don Field
1967	Warren Hitchcox	1986	Bob Parkinson / Al Cook
1968-69	Ted Hignell	1987	Jack Swift
1970	Bob Bosada	1988-89	Jim Burt
1971	Des Gardiner	1990	Frank Lilliman
1972	Keith Bonner	1991-92	Jim Eichenberg
1973	Colin Day	1993-	Erwin Rothner
1974-75	Steve Reid		

Club Crest:	1956 - designed by Vince Foster
MAAC Charter:	1968 - under President Ted Hignell
Constitution:	1971 - drawn up under President Des Gardiner
Incorporation:	1972 - under President Keith Bonner

## OMFC Lifetime Members

Art Blackburn	Jim Burt (d.'92)	Al Cook (d.'91)
Ken Dawson	Ted Hignell	Jack McGregor
Don Wray		

# Wings Program

## *I Introduction*

The Wings Program is the MAAC-approved method for learning to fly model aircraft. Its purpose is to teach the essential skills of safe flying. Safe, responsible operation of our models is the only way to ensure preservation of our flying privileges. It is also the route to maximum enjoyment of our sport.

This manual is a Wings Program guide for students and instructors. It presents details of OMFC safety rules, and the Wings Program curriculum and checkout standards. Please study the contents carefully.

## *II Elements of the Wings Program*

Students are instructed in five essential elements of safe and responsible flying:

- 1) Field rules and safety regulations;
- 2) Frequency control procedure;
- 3) Ground handling of aircraft and equipment;
- 4) Basic flying skills: i.e.
  - taking off
  - straight and level flight
  - turning
  - landing
- 5) Public responsibility.

Before flying, a student must be **checked out**, that is, pass a test on the above elements. This test is administered by the Chief Flying Instructor (CFI) or his Deputy. It consists of:

- 1) An **oral examination** on field rules and regulations, safety and frequency control.
- 2) A **flight check**, performed by the student **unassisted**. During the test, the student must demonstrate correct ground handling and frequency control procedures, **and** must show an acceptable level of competence in flying the Wings Program manoeuvres. These manoeuvres are detailed in another section of this manual.

When a student passes this test, he or she is then, and only then, privileged to fly alone without having an instructor present.

The club makes a formal presentation of Pilot's Wings to successful students. This takes place annually at the October or November club meeting.

All instructors are volunteers who accept no payment for their services. By accepting instruction and participating in the Wings Program, each student accepts full responsibility for any accidents, regardless of whether the student or an instructor was operating the model at the time. The club may require that students sign an indemnity to that effect. A sample indemnity form is included in Appendix II.

## **III curriculum**

### **i) Introduction**

The Wings Program curriculum consists of 12 "blocks". Each block concentrates on developing a specific group of skills. The blocks are arranged in a sequence that takes the student from ground school through first flights to his final checkout flight.

There are many similarities between the Wings Program curriculum and full scale private pilot training.

Instructors are urged to follow the curriculum closely in order to provide a uniform high standard of training. Blocks should be taught in the sequence presented here.

Students will find it encouraging to chart their progress by checking off the blocks as they are completed.

Blocks 1 and 2 are normally covered at the Ground School held annually in April or May. Blocks 3 through 12 are covered at the flying fields. Students should expect to take between 30 and 90 flights with an instructor before completing Block 12. To make maximum progress, it is important that students fly regularly, at least three times a week.

All students are requested to maintain a log book to record instruction received. Log book entries should be made after each flying session. Each log book entry should contain at least the following information:

- date
- number of flights
- manoeuvres practised
- instructor's signature

## ii) Curriculum Blocks

### Block 1: Field Rules and Safety Regulations

Objective: To teach essential field rules and safety regulations. Due to their importance, a summary of these rules are given in **Appendix I**. They are fully detailed in the 'OMFC Field Guide'. Every club member should have an up-to-date copy of this Guide.

### Block 2: Frequency Control, Pit Procedure, Field Etiquette

Objective: To teach basics of safe and courteous ground handling.

- Topics:
- a) transmitter impound discipline
  - b) use of frequency control board
  - c) positioning of equipment in the pits
  - d) pre-flight inspection of model and radio
  - e) handling of model by assistant
  - f) radio turn-on techniques
  - g) engine starting techniques
  - h) positioning model for taxiing
  - i) "dead-stick" pre-empts all clearances
  - j) pre-taxi safety clearance
  - k) engine and radio shutdown techniques
  - l) after-flight and pack-up procedures
  - m) pit courtesy

### Block 3: Basic Control

Objective: To begin to develop student's skill in keeping model in the air.

- Topics:
- a) transmitter holding techniques
  - b) function of pitch and roll controls
  - c) basic 'roll-pull-roll' turn control
  - d) avoidance of over-control
  - e) avoidance of spiral dives
  - f) location of airspace boundaries

#### **Block 4: Flying the Traffic Pattern**

Objective: To develop student's ability to fly left-hand and right-hand traffic patterns.

- Topics:
- a) recognition of straight-and-level flight attitude
  - b) co-ordination of level 90° turns
  - c) flying prescribed headings
  - d) flying prescribed turns
  - e) flying the traffic pattern
  - f) "control reversal" problems

#### **Block 5: Turning Manoeuvres**

Objective: To increase student's skill in flying prescribed turns.

- Topics:
- a) level and accurate turns at 90°, 180°, and 360° and "procedure" turns
  - b) flying prescribed turns in prescribed locations
  - c) more advanced turn sequences:
    - repeated 360's
    - procedure turn pairs
    - horizontal eights

#### **Block 6: Ground Handling**

Objective: To develop student's skill in taxiing manoeuvres.

- Topics:
- a) pit safety
  - b) taxi safety clearance
  - c) throttle and rudder co-ordination
  - d) "control reversal" problems
  - e) handling "weathercocking" and other wind effects

#### **Block 7: Takeoff**

Objective: To develop student's skill in executing safe takeoffs.

- Topics:
- a) positioning and heading for takeoff
  - b) takeoff safety clearance
  - c) co-ordination of throttle and rudder during acceleration
  - d) maintaining straight takeoff run
  - e) abort before lift-off
  - f) crosswind effects

*(continued . . .)*

## **Block 7** (Continued)

- g) safe rotation speed
- h) lift-off and climb techniques
- i) abort after lift-off
- j) “torque” effects
- k) climbing turns
- l) throttle back and transition to level cruise
- m) trimming for level cruise

## **Block 8: Slow Flight, Stalls and Descent**

Objective: To develop student’s skill in handling the model at low speeds, as in landing.

- Topics:
- a) throttle and trim co-ordination for initiating slow flight
  - b) “softness” of controls at slow speeds
  - c) flying straight and level at slow speeds
  - d) level turns and traffic pattern at slow speeds
  - e) throttle and trim co-ordination for re-establishing “fast” flight
  - f) power-off stalls and stall recovery
  - g) initiating and controlling descent
  - h) re-establishing level flight

## **Block 9: Landing Circuits and Overshoots**

Objective: To develop student’s skill in setting up, initiating and aborting a landing approach.

- Topics:
- a) landing safety clearance
  - b) flying the landing pattern
  - c) positioning the beginning of descent
  - d) bleeding off air speed and establishing proper rate of descent
  - e) positioning and executing the base turn
  - f) control of descent on base leg
  - g) positioning and executing the final turn
  - h) heading and descent rate control on final approach
  - i) overshoot technique

## **Block 10: Final Approach and Touchdown**

Objective: To develop student's skill in flying the final stages of landing.

- Topics:
- a) heading and control with rudder on final
  - b) maintaining wings level with ailerons
  - c) control rate of descent with throttle
  - d) compensation for crosswinds and gusts
  - e) more overshoot practice
  - f) use of throttle at threshold
  - g) initiation of flare
  - h) touchdown and roll-out
  - i) taxi techniques
  - j) pickup safety clearance

## **Block 11: Stall Avoidance**

Objective: To develop student's skill in avoiding "stall" accidents.

- Topic:
- a) "torque" in high-performance climbs
  - b) use of rudder and elevator to avoid torque problems
  - c) co-ordination of ailerons and rudder in near-stall situations

## **Block 12: Takeoff and Landing Skills**

Objective: To develop student's skills in landing and takeoff under stressful conditions.

- Topics:
- a) "dead-stick" pre-emptive safety clearance
  - b) "dead-stick" approaches from unusual positions
  - c) off-field ditching techniques
  - d) maintaining proper heading on crosswind takeoff rolls
  - e) proper co-ordination of ailerons, rudder and elevator during lift-off in crosswind
  - f) maintaining proper final approach heading in crosswind
  - g) control of bounced landing
  - h) avoidance of "balloon-and-stall" accidents on landing

## IV *Checkout Flight*

When a student has completed all 12 blocks to the satisfaction of his instructors, it is time for the checkout flight or “final exam”.

Checkout flights are done with the Chief Flying Instructor or another instructor designated by him. The test consists of an oral exam and a flight test. Details are given below.

When the Examining Instructor is satisfied that the student is fully competent, he will award solo flying privileges.

### **i) Oral Exam**

Content and standard are at the Chief Flying Instructor’s discretion. A minimum requirement is that the student display 100% certain knowledge of the frequency control procedures, field rules and safety regulations as posted at the fields and contained in the Field Guide.

### **ii) Flight Test**

The flight test has two parts: ground handling and the actual flight itself. Standards and manoeuvres are given below. The flight manoeuvres are to be flown in the order given and in a smooth, uninterrupted sequence.

#### **a) Ground Handling Standards**

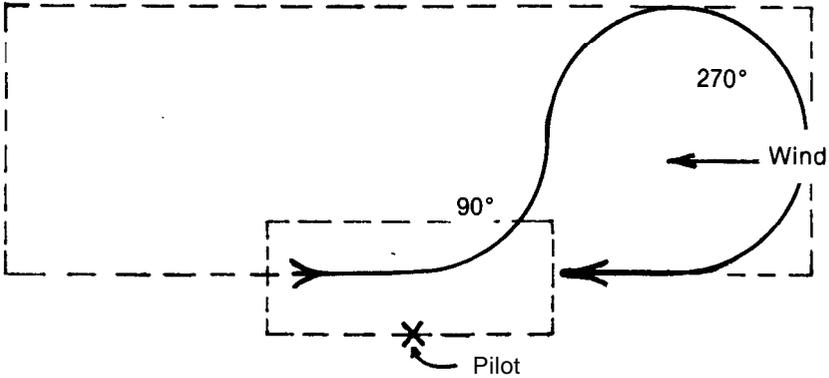
- correct use of frequency control
- appropriate placement of aircraft and equipment in the pit area
- student ensures field and air space are clear before taxiing or walking onto field
- student positions himself correctly on field
- student taxi aircraft properly and/or positions it properly for takeoff

#### **b) Flight Manoeuvres and Standards**



### 3. Procedure Turn (Fig. 3)

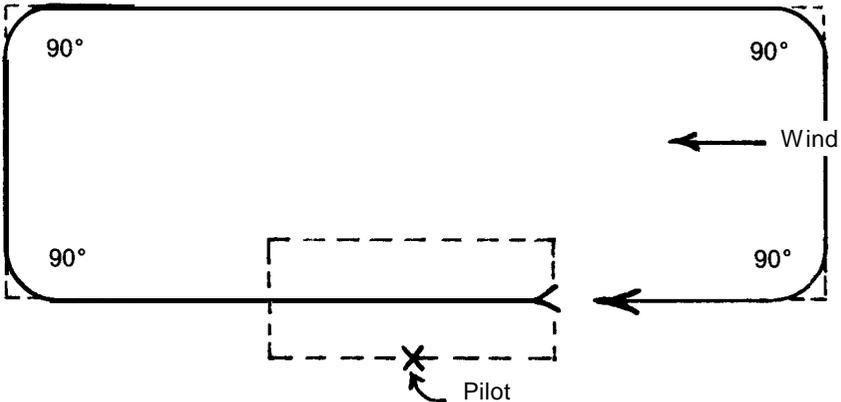
- manoeuvre positioned correctly within frame and flown according to diagram
- turns exactly  $90^\circ$  and  $270^\circ$
- constant radius on  $270^\circ$  turn
- correct entry and exit positions and headings
- altitude constant at all times



*Fig. 3 – Procedure Turn*

### 4. Reverse Circuit (Fig. 4)

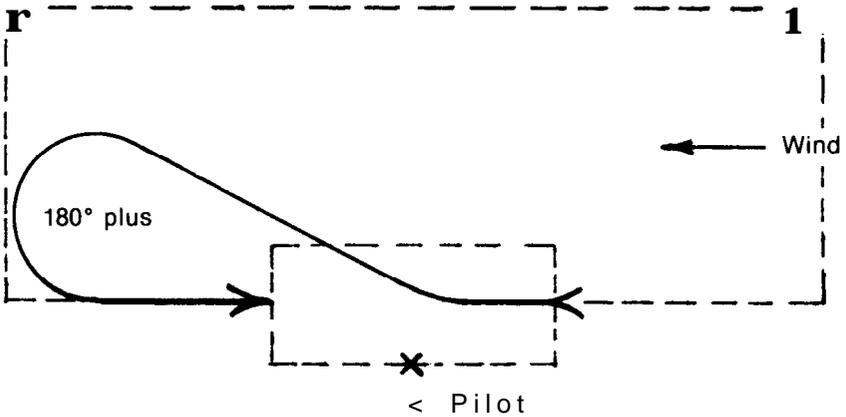
- positioned correctly and flown according to diagram
- legs straight and on correct headings, opposite legs parallel, all turns  $90^\circ$ , altitude constant at all times



*Fig.4 - Reverse Circuit*

### 5. 180° Turn (Fig. 5)

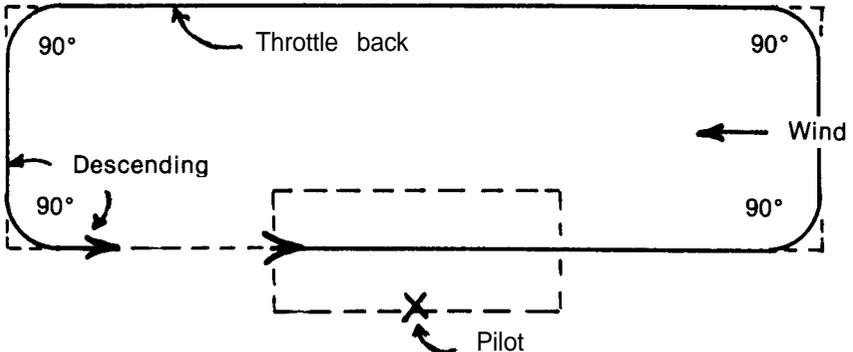
- positioned correctly within frame and flown according to diagram
- constant radius on 180° turn, turn not too sharp
- correct entry and exit positions and headings
- altitude constant at all times



*Fig. 5 - 180° Turn*

### 8. Landing Circuit and Descent (Fig. 8)

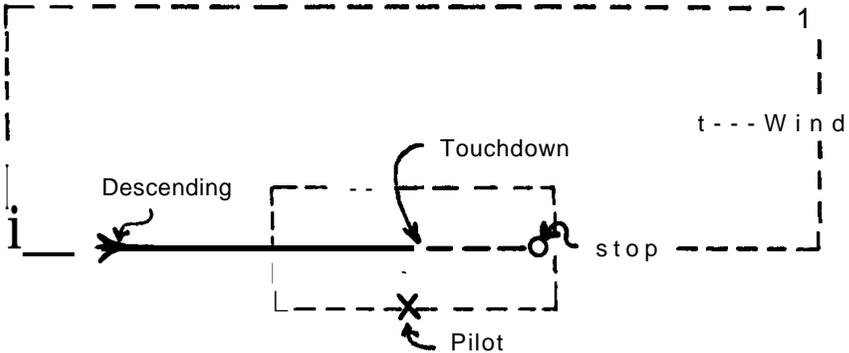
- positioned correctly within frame and flown according to diagram
- legs straight, headings correct, opposite legs parallel, all turns 90°
- altitude constant until descent initiated
- landing clearance obtained
- descent begun at appropriate position, smooth throttle-back to idle
- appropriate constant rate of descent, wings level, correct heading
- descent air speed neither too slow nor too fast - wind effects properly compensated for



*Fig. 8 - Landing Circuit and Descent*

## 7. Landing (Fig. 7)

- smooth flare
- gentle touchdown at appropriate position
- straight rollout to stop
- check field and airspace clear
- immediate taxi off field and/or pickup
- correct taxi and pickup procedures
- correct radio shutdown procedures



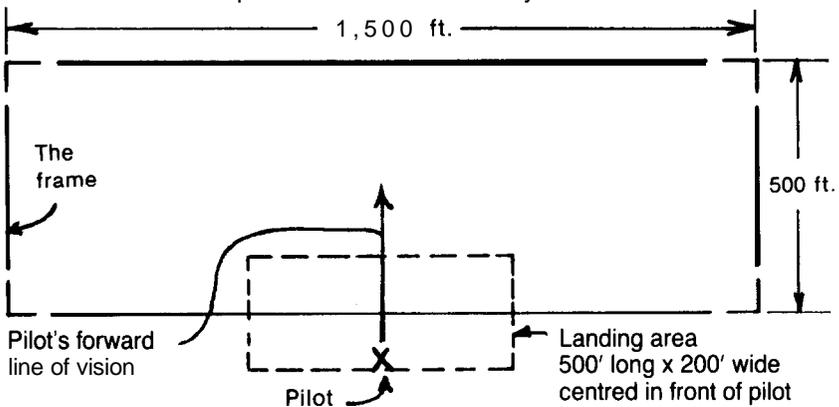
**Fig. 7 – Landing**

## 8. Review with Examining Instructor

- congratulations if passed!
- try again if not
- practice makes perfect

### c) Positioning of Manoeuvres (Fig. 8)

The ability of a student to position manoeuvres properly is one of the key indicators of skill. For this reason, all the preceding manoeuvres are to be flown within a prescribed area of the sky called “the frame”.



**Fig. 8 – The Frame, Plan View**

(Viewed looking down from above)

The altitude flown in the frame depends on pilot skills. For training, particularly at first, the plane should be kept very high, say 400 to 500 feet. For checkout flights, an altitude of 200 to 300 feet is preferable. Whatever altitude is chosen, it should be kept constant throughout the flight, except when taking off and landing.

# Appendix I

## Field Rules and Safety Regulations

For a more detailed outline of the field rules and safety regulations, refer to the OMFC Field Guide. A complete rules and regulations listing is to be found in the OMFC ByLaws and Standing Resolutions.

### a) General Field Rules

- Flyers must be members of OMFC. Guests may fly if they belong to MAAC / AMA and are accompanied by an OMFC member for the duration of their flying session.
- All members must post their membership cards visibly on their flight boxes.
- Club members must have their wings from OMFC before they can fly solo. Student pilots may fly only when accompanied by an instructor.
- All transmitters must carry an official R/CMA Gold Sticker.
- Transmitters must be impounded immediately on arrival at the field.
- Frequency pins must be attached to the frequency control board before removing the transmitter from the impound.
- Mufflers must be used on all engines larger than 0.049 cubic inch displacement. Mufflers must restrict noise levels to current OMFC standards.
- Aircraft are to be hand-guided when behind the protective barriers.
- Pilots must fly from the flight pads.
- The flying of models or starting of engines is not permitted before 9:00 a.m. Monday through Saturday, and before 11:00 a.m. Sunday and holidays. In addition, the flying of models or the starting of engines is not permitted at the North Field during school hours or during hours of church service.

## b) Restricted Areas

All club fields have restricted area, that is, areas that must not be overflown. Maps of the fields and their restricted areas are found on the following pages. However, up-to-date maps are always posted at each club field. These posted maps should be referred to from time to time, as restricted areas may change over the years, and the maps in this manual may not get updated.

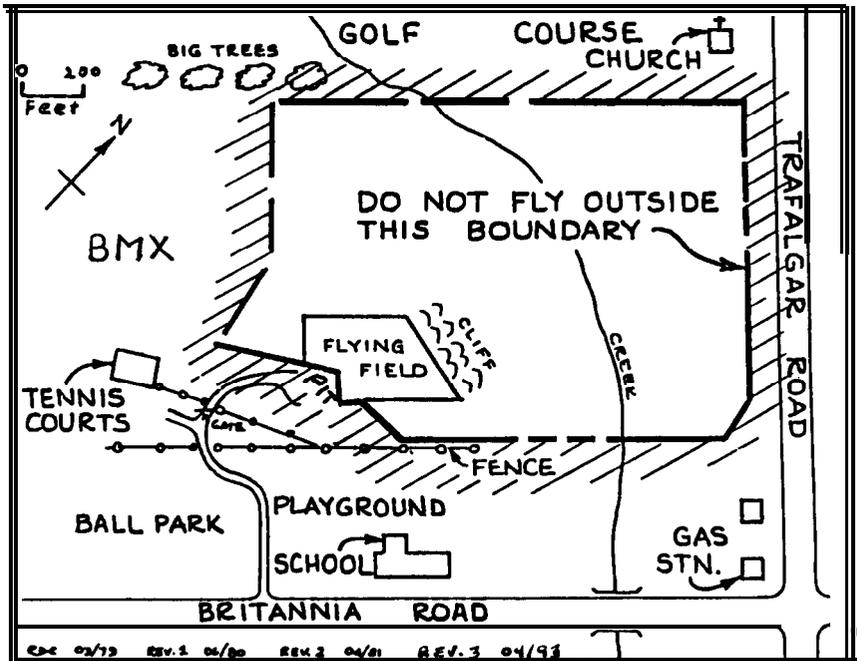
Never fly over the pits, the spectator area and the parking lots, or over your own head or the heads of other flyers. Your plane should be in front of you at all times.

The Field Manager is there to help make your flying time as safe and enjoyable as possible. Please report any unsafe practices or general problems to him.

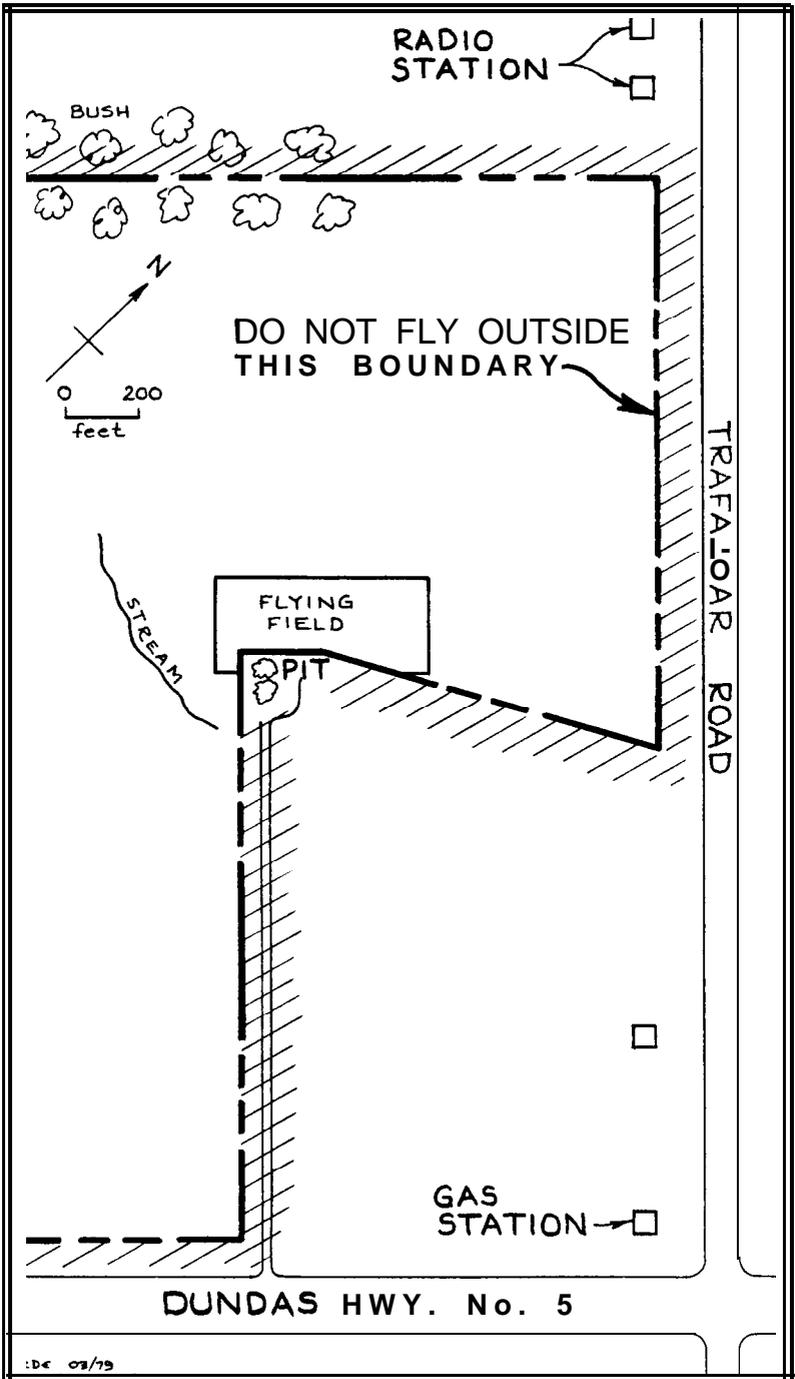
## c) Housekeeping

The flying fields are there for everyone's enjoyment. Please keep them clear of garbage and debris, and leave the area neat and tidy. Garbage cans are provided, but someone must eventually empty them, so take large items like empty fuel cans home and dispose of them there. Please put cigarette butts in the containers provided, not on the ground.

### RESTRICTED AREAS - DRUMQUIN FIELD



RESTRICTED AREAS - SOUTH FIELD



:Dc 03/75

# Appendix II

## Indemnity

I hereby request that the Oakville Model Flying Club provide me with instruction in the flying of Radio Controlled Model Aircraft.

I understand that instruction will be provided, without charge, by volunteer instructors who are skilled model pilots, and who have undertaken to operate my model as safely and responsibly as possible while providing me with instruction.

I agree to hold the Oakville Model Flying Club, its officers and its instructors blameless in the event of accidents involving damage to or loss of models or property, personal injury, or loss of life resulting from the operation of my model aircraft, regardless of whether said aircraft was under the control of myself or an instructor at the time of the accident.

NAME: *(PLEASE PRINT)* \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

