



This document contains information and suggestions that while not mandatory are never-the-less important advice for all MAAC members. To ensure that you have the latest version always check the MAAC [Web Site](#).

1.0 Title. MAP01 – Outdoor Flying Field Guidelines

2.0 Purpose. To provide MAAC Clubs and members a plain language guide on Outdoor flying field guidelines for initial sanctioning or renewal. Note that while most of the MAAC items referred to in this document are guidelines, any regulatory requirements referenced are not optional. Refer to the MAAC [Transport Canada Exemption](#), MAAC Safety Code, [MSD03](#) and [MPPD06](#) for additional required actions.

3.0 Definitions [Glossary of Terms](#).

For the purposes of determining your **flying area** size, use the following definitions (does not include free-flight models). See discipline specific guidelines for more information:

Multi-rotor/Helicopter – any type/configuration of electric powered rotary wing model aircraft that obtains all lift from propulsive devices (not wings), and which can remain in the MAAC suggested space listed in Chart 01 of MAP01.

Park flyer – electric or unpowered, 1 kg (2.2lbs) or less, constructed almost entirely of frangible or “soft” materials and reasonably expected to remain in an area the size of a typical school soccer field (45m X 90m) (150’ X 300’).

Small aircraft – electric, glow fuel or unpowered, 1.5kg (3.3lbs) or less, maximum wingspan/rotor span of 1-meter, max airspeed 100kph (62mph) and constructed of traditional non-frangible materials such as wood and/or re-enforced foam or any combination thereof.

Sport aircraft – All models of all types that are either larger, heavier or faster than small aircraft, but not meeting the definition for Large, High Performance or Turbine aircraft. This includes Multi-rotor/Helicopter aircraft unable to remain in the lower MAAC suggested space listed in Chart 1 of MAP01.

Large aircraft – A model with a total flying weight not exceeding 35 kilograms and with:

- Minimum wingspan of 2.0 meters for monoplanes; or
- 1.5 meter largest single wing wingspan for Biplanes/multi wings; or
- 3.5 meter combined length plus wingspan for “Jet” type models or
- All true scale models of 25% or larger, or
- Rotor span of 2.0 meters or more.

High Performance – All powered models either larger, heavier or faster than small aircraft, capable of prolonged vertical flight and/or maneuvers and requiring larger airspace either vertically or horizontally. Examples of models in the category are: pattern, IMAC, pylon,

Turbine Aircraft - All gas turbine powered models regardless of size or construction material.

4.0 Outdoor Flying Field Guidelines

This document is intended to assist MAAC Clubs and members navigate the new exemption requirements, merged with existing MAAC rules and guidelines with **the following steps**:

Step 1: How Clubs/members should determine Flying Field requirements for where and what they intend to fly;

- a) Determine pilot station coordinates
- b) Establishing a generic “flight line”
- c) Determine Flying area

Step 2: How Clubs/members should address Transport Canada Exemption issues;

- a) Airspace Classification determination
- b) Airspace permissions
- c) “Nearest Aerodrome” determination

Step 3: How Clubs/members should address MAAC Safety Code issues;

- a) General outdoor flying field issues
- b) Land use agreement guidelines
- c) Model Flying from a full-scale Aerodrome guideline

With each topic there may be a **MAAC tutorial (MAP-T)** that provides additional in-depth material for those not familiar with the topic or aviation system. All tutorials are available on the MAAC website.

5.0 MAAC Tutorials and links

[MAP01-T-1 – Flying Field Guidelines](#)

[MAP01-T-2 – Airspace Classifications](#)

[MAP01-T-3 – Airspace Determination and Permissions](#)

[MAP01-T-4 – Locating Adjacent Aerodromes](#)

[MAP01-T-5 – Flying from full-scale Aerodromes](#)

[MAP01-T-6 – General Flying Field Set up and best practices](#)

Step 1 – How Clubs/members should determine Flying Field requirements for where and what they intend to fly

a) Determine pilot station coordinates

MAAC now requires that all Clubs and members determine the geographic center **of the pilot station(s)** of your intended flying field, expressed in degrees Latitude and Longitude. **All Clubs, including those renewing existing flying fields will be asked to provide this information.** The intent is a documented single reference point that represents the average standing position of pilots (+/- 5 feet). This provides MAAC and Aviation authorities a reference and measuring point for our line of sight model operations.

If your club has any of the following:

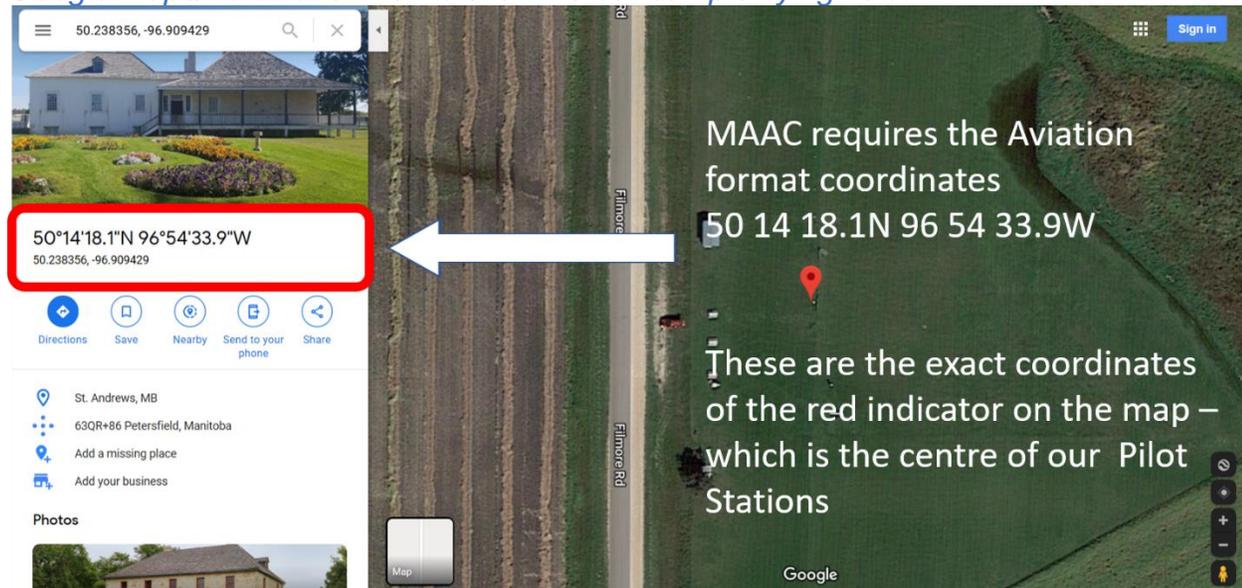
- multiple sets of pilot stations; or
- Pilot stations that move substantially based on conditions; or
- Undefined non-permanent pilot stations (sod farms etc) or
- Any other issues that prohibit defining a single spot as requested

Please consult [MAP01-T-1 – Flying Field Guidelines](#) for additional instructions.

NOTE - Do **not** use parking lots or access roads coordinates here.

Aviation authorities and the MAAC [Club Registration Form](#) require Clubs to use the aviation format of latitude and longitude (example 50°14'18.1"N 96°54'33.9"W). Internet resources such as Google Map/Earth can pinpoint and easily convert geo-reference formats.

Picture 1 shows an example Club Flying Field pilot station coordinates and location from Google maps. *Copy/paste and search these coordinates (50.238397, -96.909421) into Google Maps/Earth or similar to examine our sample flying field.*



b) Establish a generic "Flight Line"

For Exemption and other airspace surveying purposes, Clubs need to establish a general theoretical **flight line** or lines – if possible.

Flight Line – a notional line, or lines running parallel to the runway, or runways, which separates a flying site into two distinct sections - flying side and no-flying side. The flight line may be the nearest edge of the runway(s) but must not be the centerline of the runway(s).

The flight line serves to divide our flying field into the non-flying side and the **flying side**. This in turn enables Clubs to better define their **flying area** – which is also a new requirement.

In our example picture 2 the Club mainly uses a North/south runway with **all** non-flying areas to the West and North. As a result, the flying side is to the East of the flight line.

More complex flying fields may be unable to define a single flying side because:

- They have multiple runways or complex flight lines
- The flight line moves substantially with active runway changes or
- Flight line changes sides of the field with time of day/wind direction or
- They are unable to limit flying activities to a specific direction relative to the pilot stations (i.e. sod farms etc.)



If a club cannot define the flying side to a single side relative to the pilot stations that is fine, however they will need to survey additional airspace around the main or central pilot station location. How to do so is explained later in this document and tutorials.

c) Determine Flying Area.

Under the Exemption all MAAC Clubs and members must determine the **classification of airspace we want to fly in** (*Exemption item #3 for Clubs & #12 for individuals*).

Once we know where we are flying from (pilot station coordinates) and if we can define the general direction(s) of the flying side (via the flight line), we then need to determine how **big** an area we need to examine for airspace issues. To do this we need to determine our **"flying area"**.

Flying Area – the 3-dimensional area on the flying side of the flight line, where model aircraft are normally expected to be flown in. This normally extends well beyond the club or individuals' "infield area" but does not include extra space for fly-away etc.

Chart 1 lists the MAAC suggested **flying area** distances for most normally operated types of model aircraft. MAAC fully understands that every flying field is unique both in size and shape

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– the supplied chart is only a starting point. If your Club intends to use more distance than the maximum listed on the supplied chart, remember to consider the larger distance in all calculations and note your distances on your [Club Registration Form](#).

Chart 1 Flying Distance					
MAAC Suggested Distance	Turbines/Large / High Performance	Sport Flying	Small Aircraft	Park Flyer	Multi-rotor/ Helicopter
A- Depth	500m/1500'	225m/750'	150m/500'	45m/150'	90m/300'
B- Length	900m/3000'	450m/1500'	300m/1000'	90m/300'	90m/300'
C- Altitude	300m/1000'	210m/700'	120m/400'	120m/400'	120m/400'

Below is our example of a typical Club field **flying area**. It is deeper and has a higher altitude than a typical sport flying site. The flying area is also not centered on the pilot stations because of a road to the North.



NOTE 1 – if you cannot define a flight line with flying side/non flying side, then the **flying area** definition should be centered on the pilot station coordinates and extend to one **maximum** distance in all directions. For example, *“within 1500’ centered on 50°14’18.2”N 96°54’33.9”W, up to 1000’ above ground”*.

NOTE 2 – Dependent upon your configuration or location, some Clubs may be asked/required to define their **flying area** more precisely. Normally this will be done by mapping or plotting

each component of the flying area “box”, radius or other shape. The tutorials provide additional information on how to do this.

Step 2 – How Clubs/members should address Transport Canada Exemption issues

In layman’s terms the Exemption requires the following:

- Clubs and members must determine the airspace classification of their **flying area**, and
- If we determine our **flying area**, or any portion of, is **in controlled airspace**, we are required to obtain **permissions** and develop procedures with the airspace controlling agency (*Exemption items #3 for Clubs & #12 for individuals*); **otherwise**;
- If our flying area is wholly in uncontrolled **airspace**, we are required to determine our **proximity to any aerodromes/waterdromes in uncontrolled airspace**, and if **any** are **found** within 3 nautical miles (NM) of any portion of our **flying area**, we are required to develop procedures to deconflict our MAAC flying from full-scale aviation (*Exemption item #4 for Clubs & #14 for individuals*).

NOTE 1 - There is no difference to MAAC or Transport Canada whether any nearby full-scale location is designated an “aerodrome” or “airport”.

NOTE 2 – Regardless of airspace classification, if a MAAC flying site is co-located at an airport/aerodrome there may be additional permissions required from the land-owner/airport operator and there may also be other MAAC issues. Those issues are covered in depth in [MAP01-T-6 – Flying from Full Scale Aerodromes](#).

a) Airspace Classification Determination

New MAAC Clubs and members flying from individual flying sites must examine all 3 dimensions (length, width and altitude) of your **flying area**, to determine if **any portion of the flying area** is located within, immediately under or adjacent to any controlled or restricted airspace volume.

If you have a defined flight line that limits flying operations to a certain area, that can be helpful to reduce or refine the search area. Sometimes the flying area need only be on the “other side” of a road to be clear of controlled/restricted airspace. Otherwise as noted before search in 360 degrees to one maximum **flying area** dimension, centered on the pilot station coordinates – and to the maximum altitude.

It is hoped that in the very near future MAAC will acquire an **online airspace determination and permission tool** for member use. Until that happens, Clubs and members may need to manually determine what type of airspace their **flying area** is in.

NOTE – as of April 2020, MAAC **has surveyed all existing Sanctioned Clubs** and has determined the airspace classification and controlling agency. Talks are underway with the respective controlling agency. Zone Directors will contact affected clubs directly with direction on next steps once known.

Free online airspace tools

Members are free to determine airspace classification in any manner they choose. MAAC Clubs and members can avail themselves of several unofficial online airspace determination tools. It must be noted however as of this document's creation date (April 2020) no on-line sites have been approved by Transport Canada or NAV CANADA – **use at your own risk and discretion.**

<https://nrc.canada.ca/en/drone-tool/>

The National Research Council (NRC) site is the **least useful** tool for MAAC as it is preset to consider PART IX “drone” operations. These restrictions **do not** apply to MAAC members or Clubs operating under the Exemption.

http://www3.telus.net/cschwab/viewer/canadian_airspace.html

The Canadian Airspace Viewer site can provide more detailed airspace examination options, but that comes with increased complexity of operation. Extremely detailed online forums exist to explain how to use the site. A small tutorial on various online tools is located in [MAP01-T-3 – Airspace Determinations and Permissions](#).

b) Airspace Permissions

It is hoped that in the very near future MAAC will acquire an **online airspace determination and permission tool** for MAAC member use. Until that happens, Clubs and members may need to manually determine what type of airspace their **flying area** is in, who controls it, and how to obtain permissions.

NOTE – as of April 01, 2020, MAAC **has surveyed all existing Sanctioned Clubs** and has determined the airspace classification, and airspace controlling agency. Talks are underway with the respective parties. Zone Directors will contact affected clubs directly with direction on next steps once known.

As of April 01, 2020, and until further advised – Clubs and members are asked to **not contact any controlling agency directly. MAAC and Zone Directors will provide more information once a formal protocol is known.**

NOTE – there are more “airspace controlling agencies” than just NAV CANADA. Members are encouraged to seek out additional information on how to determine who controls what and options to contact them as outlined in [MAP01-T-3 – Airspace Determinations and Permissions](#).

c) "Nearest Aerodrome" determination

NAV CANADA and other controlling agencies are **not** involved with RPAS operation in **uncontrolled** airspace. Therefore, Clubs and members are required to comply with this item independently.

As of May 2020, MAAC is working with an independent third party to develop an **online airspace determination and aerodrome location tool** for MAAC member use. Until that happens, Clubs and members will need to manually determine where the nearest aerodrome/waterdrome is located.

If your flying area is located **wholly outside (including under) controlled airspace**, the exemption (#4 for Clubs and #14 for individuals') requires that you locate any and all published aerodromes/waterdromes located within 3 nautical miles of your flying area. If there are any, you are responsible to *“create procedures to ensure that RPAS operations do not conflict with or pose a hazard to full scale aircraft in the vicinity”*.

NOTE 1 – For this exemption requirement, a “personal flying site” could be as informal as flying a foamy on a country road. **Know where you are before you fly.**

NOTE 2 – If your flying area is wholly **inside** controlled airspace, the controlling agency is **only** responsible for aerodromes/waterdromes also located **inside** controlled airspace. You are required to ensure Exemption compliance by surveying for aerodromes within 3nm of your flying area **outside of controlled airspace**.

See [MAP01-T4 – Locating Adjacent Aerodromes](#), for more detailed information on this topic.

What exactly does “establish procedures to ensure that RPAS do not conflict with or pose a hazard to other aircraft in the vicinity” mean?

MAAC and Transport Canada understand that every MAAC Club flying field and individual field will be unique and face differing challenges. So much so in fact it would be impossible to list specific rules. While it is ultimately up to Clubs and Zone Directors to determine case by case, the minimum “procedure” established by the MAAC Safety code and required to be followed by all MAAC members regardless of location is:

MAAC pilots **must give way to full scale aviation** and **not operate in a manner likely to endanger aviation safety**.

For 70 years the primary method has been reliance on our eyes and sometimes ears. Whether a spotter is required, or other more formal additional procedures will vary. Regardless of what additional measures are taken to assist in ensuring safety, the bottom line is simple:

Per [MSD03](#) - MAAC pilots, must always and in all circumstances, accept responsibility for collision avoidance from full scale aircraft.

If you are flying from an aerodrome or waterdrome additional precautions are prudent. Refer to [MAP01-T5 – Flying from Full Scale Aerodromes](#).

Step 3 – How Clubs/Members should address MAAC Safety Code issues

a) **General Outdoor flying field set up**

The Transport Canada [exemption](#) requires additional duties of individual MAAC members:

*8. The member of MAAC operating a RPAS shall be in good standing with the association, namely have paid all dues and **be following all MAAC rules;***

The MAAC Safety Code is more than just the [MSD03 – All Model Aircraft](#) “don’t do this” rules. The Exemption was issued based on Club/member compliance with **all** MAAC documents tailored to each of the different disciplines of RC flying. Clubs and members should consider anew all aspects of the generic MSD codes and Category Specific MSD codes.

Generic MSD code issues

On any initial Club application and thereafter for **every new flying season**, Clubs and members should do an assessment of their flying site(s) for exemption and MAAC Safety Code compliance. All MAAC Safety documents can be found [here](#). These “inspections” do not necessarily need to be done in person – quite often the birds-eye view provided by internet satellite services such as Google Maps are more instructive.

Using the previously determined “**flying area**” distances, examine the “**flying area**” and “**infield area**” for any and all “**no-fly over**” issues listed in [MSD03 – All Model Aircraft](#). It is strongly recommended a drawing, picture or screen capture be used to make comments and notes as any item is discovered or assessed. Look for:

- Roads or paths of any type (paved, rural, farm, dirt paths) that might be occupied by people or vehicles. Abandoned or unused roads should be noted.
- Houses, either individually, developments or solitary occupied “farm” houses or outbuildings. Abandoned “farm-type” buildings should be noted.
- Published “noise sensitive” areas such as some types of specialized animal farms (Mink, Chinchilla), private resorts, golf courses or other possible sources of noise complaints.
- Club determined NO-FLY Zones – are they still valid, should there be new ones.

The existence of some MAAC Safety Code issues such as a new nearby farm house does not automatically mean a site will not be approved/renewed by the MAAC Zone Director. It will however require the Club or individual member to develop and communicate a risk mitigation procedure that is acceptable to MAAC.

- Explain what the club plans to do about the issue. For instance, a road used by a municipality for snow removal dumping will not normally be an issue for summertime flying - explain all noted issues and the mitigations in your application or renewal form.

Bear in mind that some items stipulated in [MSD03](#) are not negotiable and are likely **not** going to be approved:

- a new housing development 50 feet from your “runway”

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- a new busy highway encroaches on reasonable “fly-away” distances.
- Other new public use areas that encroach on the flying area.

Flight Lines and field set up

All MAAC infield safety distances begin with Clubs and individual members establishing a **flight line**. This line runs parallel to the runway, or runways, and separates the flying site into two distinct sections - flying side and no-flying side.

- The flight line shall be a minimum of 7m from the pilot stations and might not be the runway centerline. The flightline could be the runway(s) edge nearest the pilot stations if the club/member so desires and the pilot stations are at least 7m from the edge of the runway(s). (see below diagrams)
- Where possible, clear visual indicators of the flight line are encouraged
- A flight line shall be established for all flying sites regardless of permanent infrastructure.
- For water or sod farms where physical markers are not possible, clubs and individuals should be able to explain where the approximate line is.

MPPD06 stipulates the setback distances of various field elements. **See the attached diagrams at the end of this document.**

Field Equipment and signage

The following are the minimum suggested safety equipment and signage that should be present, in some fashion, at all MAAC sanctioned flying fields and events, when flying activities are taking place. Clubs and individual members may add or expand to this list as required:

- A portable fire extinguisher suitable to the type of flying activities
- A first aid kit
- MAAC Safety Poster
- MAAC’s TC exemption – printed or laminated but otherwise available for on demand production to law enforcement.

b) Land use agreement Guidelines

While all Canadian Airspace is owned by Transport Canada, flying over any land/property and recovery of a downed model aircraft from outside the confines of the Club/individuals “infield area” may result in trespass issues. Again, use the “**flying area**” as a **minimum distance** to assess for any and all right of way property issues. Surveying additional distances for the possibility of a fly-away is a good idea.

Any agreement between a Club or individual and a land owner, is between them, and that MAAC as a *corporation* is a not party to the agreement. Any conflicts that arise in association with an agreement, with adjacent land owners, other site users or any other persons is the responsibility of the parties to the agreement.

Keeping an updated list of all adjacent land-owner contact information posted at the flying field is also a good idea. Individual members flying from personal flying fields should keep a copy

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of the same types of documentation for on-demand production to any law enforcement or other officials.

c) Model Flying from full-scale Aerodrome guidelines

As previously noted, the Transport Canada MAAC [exemption](#) to Part IX of the Canadian Aviation Regulations is based primarily on MAAC activities within controlled **airspace**. The Exemption itself **does not** contain specific rules or criteria for model operation from a full-scale Aerodrome/waterdrome, save and except those contained in item #4 & #14.

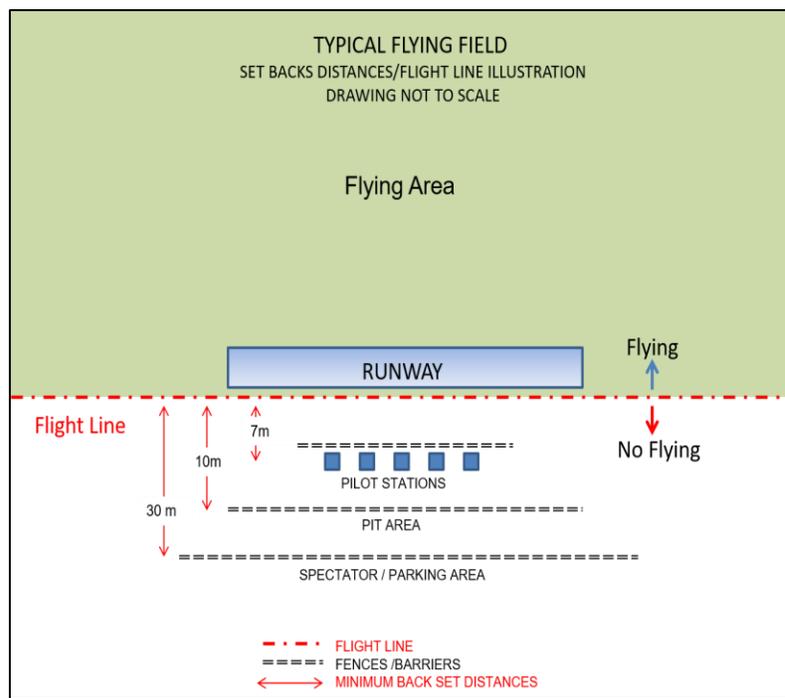
*4. Prior to sanctioning a field which is **within 3NM of an aerodrome**, outside of controlled airspace and listed in the Canadian Flight Supplement (CFS) or the Canadian Water Aerodrome Supplement (CWAS), MAAC shall establish procedures to ensure that RPAS do not conflict with or pose a hazard to other aircraft in the vicinity;*

See [MAP01-T5 – Flying from Full Scale Aerodromes](#) if you or your Club is planning on operating from an aerodrome or waterdrome and are unfamiliar with the process.

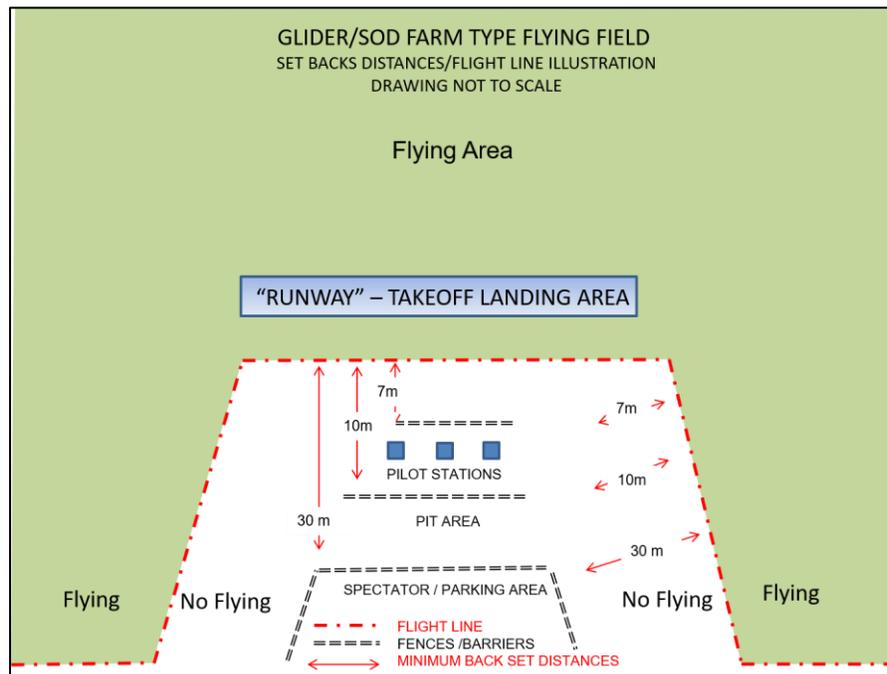
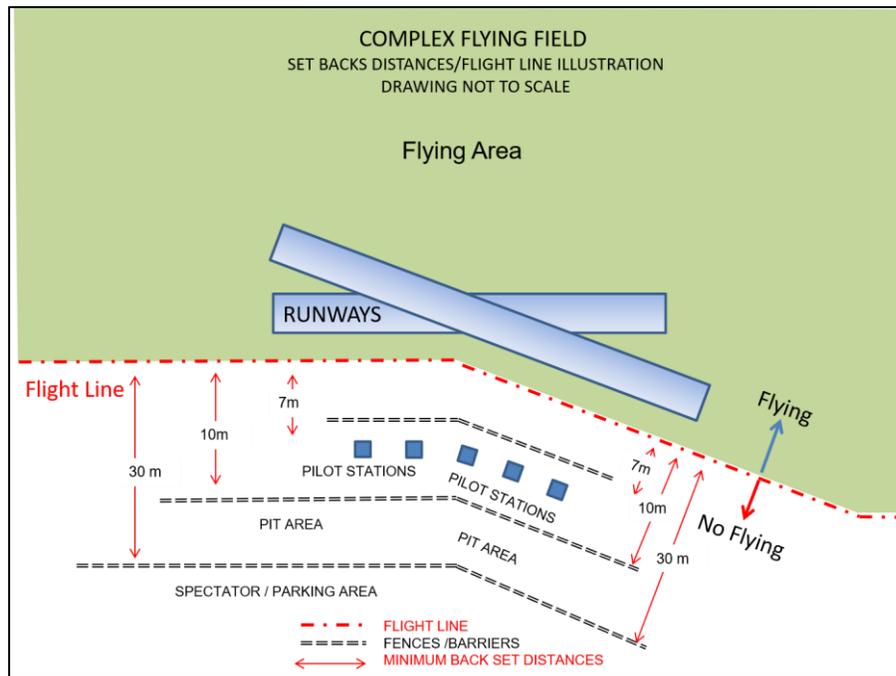
Sample Field Layouts

These drawings show the minimum recommended distances for field layouts with fences and barriers. Where fences and barriers can not be installed the minimum recommended distances are:

Pilot station to Flightline -	10m (7m with fencing/barriers)
Pits to flightline	13m (10m with fencing/barriers)
Spectators/Parking to flightline	40m (30m with fencing/barriers)



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6.0 Current version

Version 1, approved June 22, 2020

NOTE: Hard copies of this document may become outdated through revision, cancellation or replacement with another document. To ensure that you have the latest version approved by the Board of Directors, always check the MAAC web site under Resources – Documents – MAAC Safety Code.