

THE SOUTH AFRICAN MODEL AIRCRAFT ASSOCIATION



Operations Manual

**GUIDELINES FOR FLYING WITH FPV
(FIRST PERSON VIEWING)**

Issue 1 – 2010

PR 20

To Management Committee,
for ratification.

Date: 20 / 08 / 2010

PR 20

SAMAA GUIDELINES FOR FLYING WITH FPV

Table of Contents

1. Description
2. Purpose
3. Operating on FPV.
4. Transmitting Frequencies

This document forms part of the SAMAA Manual of Procedures. It is to be used by SAMAA Members and Registered Clubs in all activities associated with the flying of model aircraft in the RSA.

1.Description

For those newcomers to the hobby, and those who are only casual modelers, **(First Person Viewing)** FPV is the latest development in remote model flying.

Presently it is still in the early stages of development, but due to the interest in something new for the pilot, and the potential market for the first retailer, the development is rapidly gaining momentum. First Person Viewing is a system which puts, you the Pilot in the Cockpit of your Model Aircraft, it is done by fitting a camera to the front of your model, facing forward, and transmitting the picture or view received, back to either a screen on the ground, in front of the model pilot, or to a set of goggled or a helmet, worn by the pilot flying the model.

You as the pilot fly the model in the usual way with your transmitter, except that you are now looking from the pilots seat. Some will say but it is like flying from a full size airplanes simulator, you are right, but don't expect to push the reset button after a crash!

Briefly the two extremes of the available systems are;

a.) The basic system

Which consists of a Camera, and a transmitter and a receiver, the camera and transmitter to be mounted onto the model, and the receiver to be attached to your laptop computer to show the view from the front of the model.

b.) The full house system

Which consists of a camera, a GPS, a data recorder and a Transmitter, mounted on the model, and a receiver, and a helmet fitted with a heads up or cinema screen, used by the pilot to see the attitude of the model and remotely fly the model..

But the accessories available for this system does not end there, the display on the screen, can provide a huge amount of additional information, it even has the ability to return the model to home. The type of information available on the screen, includes compass

bearing, an arrow showing the direction to home, the height, the distance from home, the attitude of the model, and the speed of the model.

Additional information is available such as voltage of battery, amperage being drawn, revolutions of the propeller and power left in the battery.

(for those interested a short movie is available on the Eagle Tree website, do be warned it is 30 plus Megs long.)

2.) Purpose of procedure

The purpose of this procedure is to set down in this guideline , at this very early stage in the development of this mode of flying Model aircraft, the restrictions that will be put in place for any model to be flown with the FPV (First Person Viewing) System. These rules have been borrowed from the AMA (Academy of Model Aeronautics – USA)

3.)Operating on FPV

- 1.) An FPV – equipped model must be flown by two SAMAA Members utilising a buddy box system. The pilot in command must be on the primary transmitter, maintain visual contact, be prepared to assume control in the event of a problem.
- 2.) The operational range of the model is limited to the pilot in command's line of sight. or as set out in (3) below.
- 3.) The limit of the flight path of model operations shall be limited to the designated flying site and the approved overfly area.
- 4.) the model weight and speed shall be limited to a maximum of 10 lbs and 60 miles per hour.(100 Km/h)

SAMAA

PR20

**GUIDELINES FOR
FLYING WITH FPV**

4.) Transmitting Frequency

At the time of writing, ICASA have been approached to find out what **frequency and power output** can be used for the model mounted transmitter to downlink and transmit the video and data signals to the pilot or base station.

To date no answer has been received from ICASA and SAMAA cannot sanction or approve the use of this system on Registered fields, unless the transmission equipment complies with the existing regulations as set down for 2,4 Ghz, or some other model approved frequency.

The Americans are using the 1.3, 2.4, 5.8 Ghz as well as 900 Mhz for down transmission of the information from the model to the pilot. It can be expected that the maximum power output allowed for this transmission will again be limited to 100 mw for 2.4 transmissions.

KFN