First Person View Proficiency Cert (FP)

Applicable to any model flown First Person View (FPV) by either screen or goggles

General
The Achievement Scheme is run by the MFNZ as a National Scheme and it is open to all model flyers.

The FPV certificate is a supplementary type, meaning the candidate has already successfully passed as a minimum the Basic test for their respective model.

The candidate must successfully complete the test schedules in one attempt. A maximum of two attempts at the examination are permitted in any one day.

The Model
The tests can be performed with virtually any model, fixed wing or rotary, the test must be flown via First Person View.

The use of gyros autopilot or other electronic stability/pilot aids is not permitted during the tests. This does not apply to rotary winged aircraft; however, they must be flown in a rate/manual mode. If any such system is fitted to a fixed model it must be disabled during the tests and you should check that this has been done. The model may be hand launched or capable of taking off from the ground. GPS must not be used during any test.

Electric Powered Models must be treated as LIVE as soon as the main flight battery is connected, irrespective of radio state and great care must be demonstrated by the candidate. The arming sequence should be clearly understood and discussed/demonstrated to you by the candidate. Safe operation must be demonstrated by the candidate.

Whatever model is brought by the candidate, it must be suitable to fly the manoeuvres required by the test they are taking. You do not have the authority to alter the required manoeuvres to suit a model and if, in your opinion, the model is unsuitable for the test then you should explain this to the candidate and tell them that they cannot use that model.

The selection of the model to do the test is the responsibility of the pilot and it is they you are testing, not the model. Similarly, the type of model presented cannot be used as an excuse for not completing certain manoeuvres. A pilot cannot turn up with a twin, for instance, and then say that the spin is too dangerous because the model would not pull out of it.

Another important point to remember is that the candidate is not expected to build or even own the model they use. There is no reason why a flyer who does not own a suitable model could not borrow one from a friend or club mate.

You, of course, should be watching any extra circuits just as carefully as the rest of the flight as they can tell

you a lot about the competence of the flyer. A pilot who transitions directly from one manoeuvre to the next is not to be penalised as this is quite acceptable but watch out for the pilot who hasn't practised enough. Trying to fly the test in this way can get them into some very awkward positions.

Two attempts per examination will be allowed in any one day.

Pre Flight Checks
Carry out pre-flight checks as required by the MFNZ safety codes. The pre-flight checks are laid out clearly in the MFNZ handbook.

Further to this, the FPV certificate candidate should also demonstrate through knowledge of setup, including, but not limited to:

- **Video Transmitter**: Video transmitter frequency and power level compliant with RSM legislation
- **Antennas**: Suitable antennas install on model and receiver, allowing for full video coverage throughout the test
- **Camera**: Angle and Focussed
- **OSD**: Any OSD used in the test should be calibrated to provide accurate position and altitude data, although the test must be flown manually the OSD providing situational awareness is a safety feature and is permitted.
- **Component Separation and Noise**: The candidate should present a model correctly setup, excessive noise on the video feed (not from an external source) is a sign of a candidate ill prepared for the examination.
- **Failsafe's**: Failsafe's that put the airframe into the safest configuration possible should be demonstrated. Depending on airframe, this may include throttle off, flaps down (or full crow braking), tail surfaces set for slight climb/roll etc.

Pre Flight Test
The candidate should also go through the pre-flying session checks, also laid out in the handbook. Ask the candidate to go through their checks as if the test flight was their first flight of the day. Particular attention should be given to airframe, control linkages and surfaces. Points to look for are that the candidate has a steady and regular ground routine, especially when starting and tuning the engine.

Nerves may play a part in the pits but you should satisfy yourself that the candidate is actually in control of what they are doing when preparing their aircraft for flight. A neat ground layout makes a good impression. A poor performance in this area is not grounds for failing the candidate, however, but it is inevitable that you will be making mental notes of all aspects of the candidate's competence and this is one that might have an effect on a real 'borderline' case.

Pay particular attention to the way the candidate uses the local frequency control system and make sure that they fully understand it and use the correct sequence appropriate to their model. For 35 MHz, this is usually 'get the peg, TX on, Rx on'. For 2.4 GHz, the candidate should be aware of any local transmitter usage limitations and if a flight peg is required, it must be obtained before the TX is turned on.
Some radio equipment and, occasionally, a specific model requirement requires that the Rx be switched on first and, if this is the case, the candidate should explain this clearly to you. With electric powered models, take note that the candidate is aware that the model is 'live' as soon as the flight battery is plugged in and that they take appropriate safety precautions.

Before powering on the candidate should be aware of the Video Transmitter (VTx) frequency that is selected, and should be aware of any frequency control active at the flying site.

Powering the Video Receiver (VRx) on and confirming the channel is clear before powering the Video

Transmitter on is a good habit the candidate should demonstrate.

Prior to powering on the video transmitter, the candidate should announce to any other FPV pilots operating that they are powering on, in case of “spamming the band” upon powering the video transmitter and causing a safety issue for others flying.

If a separate receiver battery, or FPV system battery, is fitted, the candidate should have the opportunity to check the operation of the radio equipment before the flight battery is plugged in. Watch carefully and take note that the transmitter controls, trims and switches are checked by the pilot.

All candidates are required to be aware of the local the frequency control system and anyone who is required to use it but switches their radio on before doing so should be failed on the spot. If there is no one else available then there is nothing to stop you aiding the candidate by holding the model for the power check, carrying it out for take-off etc. but any such actions must be performed by you directly on the instructions of the candidate. You must not prompt them or carry out any actions of your own accord. Talk this over with the candidate in your pre-flight briefing.
If the test is being taken with an electric powered model, then the candidate should show that they are familiar with the safe handling of such models. In particular, they must demonstrate to you the ‘arming’ sequence for their model.

For safety reasons many speed controllers have a pre-programmed sequence of actions that have to be followed before the motor will respond to throttle stick movements. For instance, after switching on TX and Rx and then plugging in the main flight battery, one type of controller requires that you move the throttle stick from low to full throttle and then back to low before the motor is ‘armed’ and ready for flight. The candidate must be fully familiar with the system fitted to the model and should brief you on the system and demonstrate it working at some time during the pre-flight checks.

Generally, they must show that they are paying particular attention to the transmitter and receiver switch on sequence and they must make you aware that they are treating the model as ‘live’ as soon as the flight battery is plugged in, no matter what arming sequence they may then have to go through.

The pilot must demonstrate the correct function of the failsafe, where appropriate, before committing to the flight.

The pilot must stand, or sit if preferred, in the designated pilot area for the entirety of the flying part of the test.

Flight Test
As the FPV certificate is a supplementary type covering many disciplines of model the test routines are to be carried out in accordance with the relevant Basic category test for the model being tested, however carried out with the candidate flying the routine via FPV. The examiner should observe the test visually, not by using FPV equipment.

Candidate Questions
The FPV certificate is a supplementary type, meaning the candidate has already successfully passed as a minimum the Basic test for their respective model, and the associate questions. However due to the nature of First Person View flying further questions should be asked of the candidate

Remember that on no account can a good performance on the questions make up for a flying test that you considered a failure. If you have failed the candidate’s flying, you should not even start to ask the questions. On the other hand, the achievement scheme is a test of both flying ability and knowledge. It doesn’t matter how well the candidate can fly, if they cannot answer the questions they should not pass.

You are not expected to ask them 'parrot fashion' and the candidate is not expected to answer that way

either. This opens up the possibility of asking a candidate if they can think of reasons behind specific rules. For instance, why is the club frequency control system operated as it is and what might go wrong? or why should models not be taxied in or out of the pits area? There is always the possibility that the examiner may use the supplementary questions to further explore the candidates understanding of the mandatory questions.

Candidates Name	**MFNZ Number**	**Date**	**Signature**
Examiner's Name	**MFNZ Number**	**Date**	**Signature**

Examiners and Candidates Check List

The following is a short checklist of matters to discuss with the candidate taken from this document. This checklist can be used to ensure that all points raised above have been discussed with the pilot prior to any flights:

1 Has the candidate read: - The MFNZ members manual
Local site rules (if applicable) ☐

2 Discuss whether the model is suitable in "these conditions"

3 Any "no fly zones" need to be identified ☐

4 Remind candidate to talk you through anything that the helper does for them as the test progresses (includes Tug pilot briefing if an aerotow is being used) ☐

5 Agree model position after the launch and straight flight tasks (d & e) are completed ☐

6 Agree any Airspace requirements that need to be pre-determined by the Examiner and Candidate prior to the commencement of the test flights ☐