

UKRA, MAP

Achievement Requirements- Silver

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Please check with ukra.org.uk and ukra-map.org.uk any updates and changes.

Who this document is for:

Anyone wishing to obtain, assess or award the UKRA MAP Silver Award will need to be familiar with this document as it describes the various tasks that need to be completed.

Introduction:

This document is part of a set of documents for completion of the UKRA MAP Silver level. There are three documents in this document set:

1. MAP-S-GUIDE – The advice and guidance document
2. MAP-S-AR – This document
3. MAP-S-REC – The record of assessment activities

This document is deliberately simple. It gives only the test requirements. Please see the MAP-S-GUIDE document for help and more information.

Requirements to complete MAP Silver award

For successful assessment, the flyer needs to perform:

- All indicated core tasks
- Three elective tasks from the list below
- Submit the records to UKRA
- A registration fee may apply, see the guidance document for details.

Core tasks

All these core tasks must be completed during the assessment period:

1. Using a full rocket kit rocket successfully complete a flight up to “C” power.
 - a. The use of a modified kit or full scratch built is permitted at the assessors’ discretion, though this is not recommended for the core tasks.
2. Promptly repeat the flight above, using a different motor power classification than flight number 1, in the same airframe.
3. Fly a model rocket featuring a different recovery system to the rocket in core tasks 1 and 2.

Each task is observed and recorded to the assessors satisfaction.

Assessment notes:

- The assessor need only see the rocket preparation stage for one core flight. During that task make sure that the flyer performs the necessary tasks themselves and understands the steps involved.
- Any discussion is with the flyer, not anyone assisting, please see guidance document for more details.
- Make sure the flyer understands the effect and differences of the motor changes between flights one and two, altitude, delay etc.
- Make sure the flyer understands the differences of the different recovery systems. Remember tumble recovery is not acceptable in a core task.
- These tasks are similar to Bronze but the flyer is required to do more of the work and demonstrate the higher level of skill than at Bronze.

Elective tasks

Select any **three** of the activities, it is strongly recommended to separate these from the core activities and carry them out at a different time/event, though this is not mandatory. The flyer is not required to choose which elective ahead of time, they may also choose to switch electives at any time prior to award completion:

1. Where core tasks were performed using a full model kit, the flight of a scratch built model can be used to complete elective one. See guidance notes on scratch-built rockets.

Note: As part of this elective the flyer will be expected to explain the rockets construction, balance, power requirements and safe operation as an assessment objective.

2. Multi-motor: Fly a model rocket designed for multiple stages, as a multi-stage rocket (a chad stage is not acceptable) – total impulse is not to exceed 20NS.

Note: All stages are to be recovered and examined by the assessor for successful completion of this elective. There are several kits that offer this form of serial staging and they are great for this elective.

3. Cluster Rocket: Fly a model rocket designed for multiple parallel staged motors (cluster) with a total impulse not to exceed 20NS.

4. Novel rocket: this is fly any rocket that does not conform to the standard pattern. This includes, ball rockets, UFO's, cones, disks etc. Use a single motor up to 10NS (C motor.) In this particular circumstance the assessor can agree the use of tumble recovery.
5. Payload rocket: This can consist of an egg loft, camera, tracker etc for smaller rockets. The payload needs to "be something or do something." – So the egg needs to uncracked and the picture taken etc.
6. Observation elective: Use either an onboard electronic altimeter, or trigonometric measure from the ground. The assessor should be happy that the flyer understands the basics of how this is done.

Each task is observed and recorded to the assessors satisfaction.

Assessment notes

- For elective 1. (Scratch build.) Both the assessor and RSO will need to be happy that the build is safe, correct motor and well balanced. Take extra care with material choice, engine selection and recovery. The flyer will need to explain all of this to the assessor at the time of the flight. This goes beyond the ordinary Q&A task of the Silver award. These additional questions are part of elective one.
- For elective 2. (Multi-Stage.) All components need to operate correctly, and all motors have operated and are still in place. For clarity, tumble recovery is acceptable for lower stages.
- For elective 3. (Parallel-Stage/cluster.) All motors have operated and are still in place.
- For elective 4. (Novel Rocket) Many novel rockets are also scratch built. They are also low altitude and tumble recovery. Though kits can be used for this elective. The rocket is considered novel if it isn't very rocket shaped. A great example is the Estes UFO, the Estes Swift or Mosquito are not. Though acceptable, boost gliders, and detachable or ejected gliders are too complex and flyers should be dissuaded from their use.
- For elective 5 (Payload) The flyer needs to fully understand and control the elective but may well need direct assistance. Given the potential complexity, it is recommended that the flyer, assessor and RSO consider the best way to do this. As an example, an egg loft rocket would require both egg rocket to be examined and seen not to be damaged at the end of the flight. The limit of 10NS on this motor is part of the elective, please do not exceed this figure.
- For elective 6 (Observation) Where an altimeter is used the payload must be enabled, installed, removed and decoded by the flyer. Any assistance is at the direction of the flyer. For the observation using a ground site a second or even third assistant can be used. The assessor needs to check that those making the observations are assisting the flyer, not doing the work for them. Ideally, the launch of the rocket is past to the assessor or RSO and the flyer will operate the ground equipment.

Submitting Silver Level Assessment

Carry out the following:

1. Activities are recorded on the MAP-S-REC document. Make sure the form is as complete as you can make it. At MAP Silver level the record document is the flyers responsibility. Please keep copies of the form.
2. Copy the information to UKRA, using map@ukra.org.uk. A mobile phone picture will be fine.
3. Include contact details for the assessor or assessors.
4. You may have to submit a registration fee, see below
5. Optionally, include any supporting material, pictures, notes etc you wish

Registration Fee and Costs

MAP is currently free.