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VFR MOVING MAP DEVICES



YOUR SAFETY SENSE LEAFLET FOR: **VFR 'MOVING MAP' DEVICES**

The use of VFR 'Moving Map' devices is now commonplace in General Aviation. Supported by the Global Navigation Satellite Systems (GNSS), these devices have considerably enhanced the process of flight planning and execution for GA pilots. Moving Maps encompass a range of electronic navigation solutions, including portable VFR GNSS devices and applications running on smart phones or tablets.

Viewing the aircraft's position in real time mitigates a variety of risks compared to the sole use of traditional VFR navigation techniques. However, like any technology or device, additional hazards may be generated if they are not used correctly.

There are too many different devices and applications available for the CAA to offer detailed advice on individual platforms. The purpose of this leaflet is therefore to identify minimum levels of proficiency you should have when operating Moving Map devices and advise on some of the associated risks and issues.

USE OF VFR 'MOVING MAP' DEVICES

What do we mean by 'Moving Map' device?

In this leaflet 'VFR Moving Map' means either a device, or software for use on a device, which may be used for the planning and/or execution of a VFR flight. The key feature is that it displays the aircraft's position in real time on a map format that includes relevant aeronautical information for VFR flight.

These devices normally fall into three categories:



Tablet or smartphone devices

Experience has shown that consumer tablet or smart phone devices can be a safe and effective platform for applications that provide Moving Map functionality and integration of aeronautical data.

Tablet-based devices with suitable applications are likely to provide the most versatile and cost-effective solution for the average GA pilot flying under VFR.



Portable GNSS systems

Dedicated portable GNSS systems provide the benefits of a platform designed for use in the aviation environment but may not provide regulated aeronautical information such as weather and NOTAM. Enhancement of situational awareness may depend on the size of the Moving Map and how much information can be displayed.



Panel mounted devices

The benefit for VFR flight varies a lot depending on the age and characteristics of the installation. Many IFR devices are also capable of displaying suitable detail for VFR flight, but users must ensure they are correctly configured to do so.

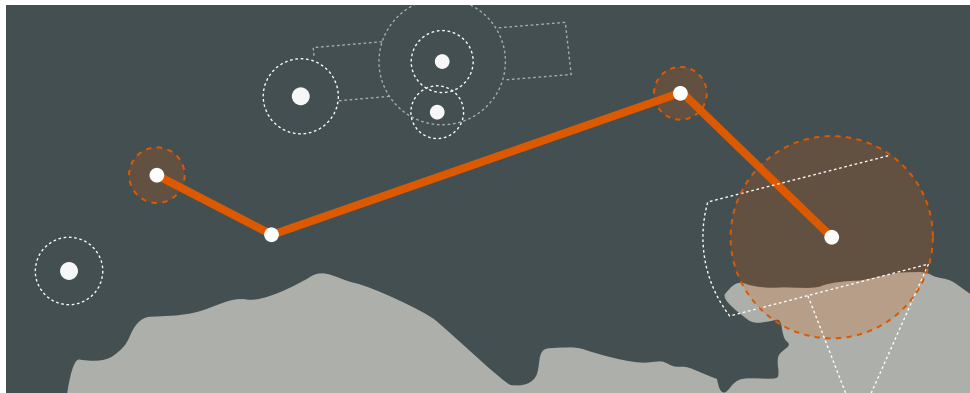
Older installations with small Moving Maps or even no map at all do not provide much situational awareness and are of limited value for VFR flight.



The options are not mutually exclusive, for example it may enhance situational awareness to be running a VFR application on a tablet device, even if your aircraft has a panel mounted Moving Map display.

USE OF VFR 'MOVING MAP' DEVICES

Benefits



Situational Awareness

VFR Moving Maps, when used correctly, provide a significant enhancement to situational awareness of your position, adjacent airspace, aerial sporting sites and activity areas which may be hazardous to aviation.

Information on ad hoc aerial activity subject to NOTAM, along with both visual and aural warnings may also be provided.

Enhanced Planning

Moving Map devices and software applications also

aid the process of flight planning and allow routes to be built taking into account the airspace environment to be navigated. You can incorporate recommendations such as planning to remain, where able, a minimum of 2 NM laterally and 200 feet vertically from the limits of controlled or notified airspace ('Take 2') and the use of Frequency Monitoring Codes.

Some devices allow routes to be flown in a simulator mode, where the plan can be assessed, and threats can be identified and mitigated.

NOTAM and weather information are also often available from the same planning source and a Pilot Log (PLOG) and frequency card can be generated.

Other Features

Many applications have other features such as the calculation of Weight & Balance, filing of VFR Flight Plans and General Aviation Report (GAR) forms.

When used effectively, these tools can assist pre-flight preparation and give more time to focus on studying the route.



In recent causal factor analysis¹, the correct use of VFR Moving Map technology could have helped prevent 85% of analysed airspace infringements from occurring. Based on these statistics the CAA actively encourages pilots to use VFR Moving Maps as part of their planning methodology, and when in flight, because they can enhance a pilot's positional situational awareness and can also offer timely alerts to airspace and aviation hazards. However, Moving Map technology should not be the sole means of planning or navigation.

¹ CAP1749 - Causal Factor Analysis of Airspace Infringements in the United Kingdom