



**SAFETY**

## Turn cold into gold

Chloe Eriksen on how to make the most of f-f-frosty winter flugelling

HAPPY New Year to you all, and here's to another wonderful year jampacked full of flying!

Flying in winter can be wonderful, especially on crisp clear days, but it brings with it potential dangers, and as ever, thorough preparation is the key to staying safe in the air.

### Weather

As pilots, we're all obsessed with the weather, but in my experience, we can be fooled by the beautiful picture outside right now, and can easily forget about how quickly conditions can change.

For most of us, snow means no go and temperatures below zero mean the chances of icing conditions, so it is vital that we can correctly interpret the weather forecasts to make sure that we are able to recognise the potential for these hazards.

The Met office offers TAFs, METARS, surface pressure charts, F215s and more through the Aviation Briefing Service, and if you need to brush up on your meteorological terminology, consult the abbreviations list on p158 of the latest version of the *Skyway Code*.

There are also apps such as Avia Weather, which provides a nice simple version of METARS. (*I use it, and it's great for idiots, ie blokes - Ed.*)



Low sun can make landing tricky

### Performance

Your first port of call for performance calculations should always be the handbook for your specific aircraft type.

When conducting landings on frozen solid ground or icy tarmac, additional margins may be required and can have an impact on how you conduct your flight. For example, braking distances will be altered depending on the surface you're landing on.

### Timing

When flying in winter, it can be easy to forget how short the days are, and therefore time planning becomes crucial.



Now if I just stick the wings on and read Chloe's article, I'm good to go

The sun low in the sky at the end of the day can drastically reduce visibility and make landing tricky, especially on a westerly runway at dusk.

Add to that wet ground, light winds and clear skies, and we have the perfect conditions for radiation fog, which is common in both the mornings and evenings during winter, and can sometimes stay put all day long. Once again, it's vital to check and understand the weather predictions.

### Equipment

Those of you brave enough to fly in an open cockpit are probably quite used to dressing for the outside conditions, and have some excellent kit options available to you. (I'm considering investing in some of those amazing heated gloves.)

However, it's worth bearing in mind that a forced landing could mean that any one of us might find ourselves out in the elements, so it is important to dress for the weather, regardless of the cockpit type. In the Army, where I was a helicopter pilot, we'd always carry a "go-bag" in case of such eventualities.

### When you go flying

A thorough walkaround is always necessary, but winter brings the need for an extra level of scrutiny.

Be sure to thoroughly check the aircraft for signs of icing, especially if the aircraft has been stored outside.

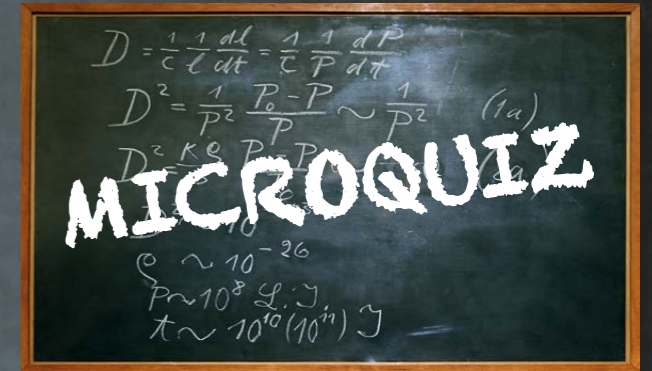
A build-up of frost, ice or snow can block inlets or pitot tubes and cause issues in flight on control surfaces. Be sure to carefully remove any buildups without causing damage to the aircraft.

It's also important to take care when walking and manoeuvring around taxiways and when dragging aircraft out of hangars. Not all airfields have the luxury of heated taxiways like Heathrow! These sorts of conditions present hazards on the ground as well as in the air.

When airborne, one of the first signs of icing in flight is likely to be a reduction in speed. If you suspect icing is forming, consider a Pan or a Mayday call. Icing is potentially extremely dangerous. If it's safe to do so, descending into warmer air can help.

### Fly safely

In short, as the Scouts say, be prepared. Don't get caught out, carefully examine the weather, plan accordingly and know what to do if you find yourself in hazardous wintry conditions. □



- Which option best describes the composition of air?
  - Oxygen 21%, Nitrogen 78%, Others 1%
  - Nitrogen 21%, Oxygen 78%, Others 1%
  - Oxygen 21%, Water vapour 78%, Others 1%
- What is meant by "inversion layer"?
  - An atmospheric layer where temperature decreases with increasing height.
  - An atmospheric layer where temperature increases with increasing height.
  - A boundary area between two other layers within the atmosphere.
- Weather most commonly occurs in which atmospheric layer?
  - Stratosphere
  - Troposphere
  - Tropopause
- Which force causes wind?
  - Coriolis force
  - Pressure gradient force
  - Buys force
- Which type of wind blows up the side of a hill or mountain?
  - katabatic wind
  - catatonic wind
  - anabatic wind

MF's quizmaster Lawrence Bell is the developer of QuizAero, the online groundschool for microlight student pilots, [quizaero.co.uk](http://quizaero.co.uk).

Answers overleaf



GASCo, the General Aviation Safety Council, is a charity whose members are aviation organisations. Its aim is to make aviation safer through education. It presents the CAA safety evenings, runs seminars and provides safety information through its magazine and website, [gasco.org.uk](http://gasco.org.uk).



CHIRP, the Confidential Human Incident Reporting Programme, reviews and analyses reports from pilots, then publishes them so others can learn. Get the app at [chirp.co.uk](http://chirp.co.uk).

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