



Icing conditions

The What Went Wrong article, "Thin ice", in the July-August issue of *Flight Safety Australia* described an incident in which a Cessna 310R flew into icing conditions.

While it is unclear from the author's story if weather conditions at the time were conducive to icing, readers should be aware that for many light aircraft types, flight into forecast or known icing conditions is prohibited.

This is the case for the Cessna 310R which was the aircraft involved in this incident. All pilots of light aircraft should be familiar with the operating limitations set out in the pilot operating handbook or aircraft flight manual of the aircraft they are flying.

— *Graham Sparrow, Sydney, NSW*

The right extinguisher

An article in the May-June issue of *Flight Safety Australia*, "Whiteout", reported an incident in which a dry chemical fire extinguisher was inadvertently activated in a Cessna 182. These extinguishers contain mono-ammonium phosphate which is extremely corrosive, especially to aluminium. Once activated within the aircraft all electrical components exposed to the chemical would require overhaul and the airframe would need to be taken apart in order to clean it properly. Without complete clean up, the airframe will corrode over time.

— *Werner Lushington, Brisbane, Queensland*

In our analysis we noted that dry powder fire extinguishers (for example, ABC powder) are the wrong type to be installed in a cockpit. A manufacturer's technical paper on this subject makes clear why. The paper says, "Any chemical powder can produce some degree of corrosion or other damage, but mono-ammonium phosphate is acidic and

corrodes more readily than other dry chemicals, which are neutral or mildly alkaline. Furthermore, corrosion by other dry chemicals is stopped by moderately dry atmosphere, while phosphoric acid has such a strong affinity for water that an exceedingly dry atmosphere would be needed to stop corrosion.

"Mono-ammonium phosphate is highly corrosive to [aluminium], and once it contacts hot [aluminium] and flows down into the structural cracks and crevices it cannot be washed out as the BC dry chemical agents can.

"Once an ABC extinguisher is used on an [aircraft], it is necessary to disassemble the aircraft piece by piece, and rivet by rivet to accomplish cleanup. Failure to do so will result in destruction of the aircraft by corrosion. To sum up: ABC extinguishers (hand portable and wheeled) are not proper aircraft ... fire protection, onboard, on ramps or in hangers."

Halon extinguishers (BCF and BTM) are widely considered the best general purpose extinguishers for use in aircraft. You should not use dry powder extinguishers.

AD/general/65 says, "[For] all aircraft except private and aerial work aeroplanes with maximum take-off weight (MTOW) not exceeding 5,700kg, rotorcraft with MTOW not exceeding 2,750kg and gliders, powered sailplanes and power-assisted sailplanes ... dry powder or water based extinguishers are not to be located in the pilot compartment or any compartment common to the pilot compartment."

For those aircraft for which this AD does not apply, CASA recommends against use of dry powder and water-based extinguishers.

Note that using an extinguisher in a confined space can result in breathing difficulties; of course, putting out an in-flight fire – by any means – is your first priority.



ADVERTISEMENT

Emergency procedures in AFMs

A recent straw poll taken by a company of its flight crew as to the mandatory or otherwise nature of the term “recommended” in the listed emergency procedures within aircraft flight manuals (AFMs) indicated that about 50 per cent of the crew thought the term “recommended” was discretionary.

What is CASA’s interpretation of the effect of recommended emergency procedures in aircraft flight manuals?

– Name withheld

CASA considers that the emergency procedures specified in an aircraft manufacturer’s flight manual/pilot operating handbook are an instruction, procedure or limitation concerning the operation of the aircraft. While a manual may characterise such procedures as recommended or not mandatory, CASA considers the effect of regulation 138 of the civil aviation regulations 1988 is to require compliance with these

procedures. For aircraft operated in commercial operations, an operator’s operations manual may also mandate compliance or describe emergency procedures that operating crew are to comply with (regulation 215[2]).

Position, position, position

The July-August issue of *Flight Safety Australia* printed a response to a letter that questioned the link between following published procedures and global navigation satellite system (GNSS) accuracy. The response described GNSS integrity, and outlined how receiver autonomous integrity monitoring (RAIM), which alerts pilots to a loss of satellite integrity, has limits for enroute, terminal and approach modes.

While the description of RAIM was technically correct, I am concerned about the link that might be implied between departing from published procedures and loss of RAIM. This could lead some less

technically minded pilots to falsely assume that adherence to published procedures will guarantee that they have satellite integrity, which could lead to a hazardous ignoring of RAIM warnings.

— Peter Laphorne, Melbourne

There are two key operational points: first, a RAIM warning means that you cannot be confident that there are sufficient satellites in view to safely conduct an approach, and you must follow the published procedure for a missed approach; second, you must follow published procedures for a legal RNAV (GNSS) non-precision approach because if you do not pass within certain tolerances of the approach fixes, your receiver will fail to give you the finer level of positional tolerance that the design safety of the approach requires.

ERRATA

Our answer to question 7 of the VFR operations quiz in the July-August issue was out of date. We said that you cannot carry passengers on a day VFR flight if you have not

completed 3 landings to a full stop in the last 90 days. In fact, changes to the rules have removed the full stop requirement, so that touch-and-go landings will suffice (CAR 1988 5.82).

•••

In the story marking the 75th anniversary of the loss of the Southern Cloud, we stated that the chart the crew used was published on Saturday and used for their Sydney-Melbourne flight the following Monday morning. This should have read, “The synoptic chart the Southern Cloud crew used for their fateful Saturday flight was based on data the bureau received the previous morning.”

SEND A LETTER

Ideal length for publication is 200 words. Longer letters may be edited. Specify if your letter is not for publication, or if you wish to have your name withheld. Send letters to *Flight Safety Australia*, PO Box 2005, Canberra ACT 2601 or email fsa@casa.gov.au

ADVERTISEMENT