

Reading the TAF

How long since you've waded through a Terminal Aerodrome Forecast like this one for the famous Avalon airport? This one definitely fails the private pilot's "five finger test" – it's more than 5 fingers long so it's automatically time to leave the aeroplane tucked up in the hangar and go home and put Top Gun on. Commercial pilots need to be a bit more discerning than that. They can't afford to stay on the ground based on a cursory glance at a TAF like this one, but for a private pilot, there's never anything wrong with making one of the safest decisions you can make in flying – to stay on the ground.

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TAF YMAV 050502Z 0506/0606
30014KT 9999 -SHRA BKN060
FM050700 27006KT 9999 -SHRA BKN050
FM051000 17006KT 9999 -SHRA SCT010 BKN020
FM060000 24010KT 9999 -SHRA SCT010 BKN020 BKN050
TEMPO 0510/0518 8000 BR BKN005
TEMPO 0518/0524 4000 RA BKN005
TEMPO 0600/0606 4000 SHRA BKN008
PROB30 INTER 0506/0514 VRB20G35KT 3000 TSRA SCT050CB
RMK
T 26 22 17 15 Q 1001 1002 1005 1004
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But let's put aside that horror TAF, and decode the one below for Albany.

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TAF YABA 050104Z 0502/0514
26020G30KT 9999 -SHRA SCT025
FM050600 23012KT 9999 -SHRA SCT035
INTER 0502/0506 26025G40KT 3000 SHRA SCT015 BKN025
T 15 11 10 09 Q 1012 1015 1016 1016
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TAF YABA 050104Z 0502/0512

The first line is about times. The issue time is always a six-figure group with Z at the end, time zone Zulu being the military version of UTC. So this one was issued on the 5th of the month at 0104Z (You don't really need help to convert that to local time do you? No? Good.)

The issue time includes minutes. The validity times don't. This one is valid from 0200Z to 1400Z on the 5th. Often you may not take too much notice of these times, but if your briefing includes two current TAFs for an aerodrome, you can pick the more recent one.

26020G30KT 9999 -SHRA SCT025

Line 2 is weather. It's always in the same order: wind, visibility, weather, cloud.

Wind: 260° true, 20 knots, gusting to 30. Maximum speed is given if it's at least 10 kt greater than the mean wind speed.

Visibility: a four-figure group, with 9999 meaning 10 km or greater.

Weather: Light showers of rain (this is an Albany TAF after all.) Many of the abbreviations for weather phenomena are from French – mist is BR (brouillard), smoke is FU (fumee), hail is GR (grele, or God rocks).

Cloud: amount and height above ground in hundreds of feet. Here it's scattered at 2500 ft. 1 to 2 OKTAS is FEW, 3 to 4 is SCT, 5 to 7 is BKN (broken), and 8 is OVC (overcast). As a rule you don't care if it's FEW or SCT, but if it's BKN or OVC you can expect to be stuck below it, and if its BKN or OVC below 1500 ft you need an alternate. That's why BOM is careful about the distinction between 4 and 5 OKTAS.

If the visibility, weather and cloud are as per a normal Northam summer day, the TAF will say CAVOK (ceiling and visibility okay). More specifically, this means visibility at least 10 km, no cloud below 5000 ft and no cumulonimbus or towering cumulus at any level, and no weather phenomena.

FM050600 23012KT 9999 -SHRA SCT035

The next part of a TAF is significant variations. There are seven of those on the Avalon TAF above, hence its comprehensive failure of the 5-finger test. The variations are either:

- FM – from a certain date and time, the conditions will change, and stay that way until the next FM or until the end of the validity period.
- BECMG – an ICAO abbreviation that only came into Australian forecasts a few years ago. It means the conditions will change more gradually than a FM, and the change will happen between the two times stated in the BECMG.
- INTER – intermittent deteriorations lasting for up to 30 minutes at a time, and occurring between the two times stated.
- TEMPO – the same as an INTER, but the deteriorations are for up to 60 minutes.

Any time you see INTER or TEMPO, you know something on that line is below the alternate minima for VFR flight – cloud ceiling of 1500 ft and visibility 8 km.

For the Albany TAF, the FM line is basically the beginning of a new forecast. From 0600Z on the 5th, the conditions will change from those on the second line to those on the third – wind 230° true at 12 knots, no change in visibility or weather, and cloud scattered at 3500 ft.

INTER 0502/0506 26025G40KT 3000 SHRA SCT015 BKN025

The INTER means intermittent deteriorations between 0200Z and 0600Z: wind 260° true at 25 knots gusting to 40, 3000 metres visibility, showers of rain, and 3 to 4 OKTAS of cloud at 1500 ft. In this case it's just the visibility that's below VFR alternate minima.

Note the FM time has minutes in it, but INTER, TEMPO and BECMG entries only have day and hour.

T 15 11 10 09 Q 1012 1015 1016 1016

The last line is temperature and QNH, starting at the start of the validity period, then every 3 hours after that. So if your arrival time is within 9 hours or so from the start of the TAF period, you have a QNH you can use. Normally you probably just use the QNH of an aerodrome within 100 nm, as per AIP ENR 1.7, but a TAF gives you another option.

To make the whole exercise practical, let's pick the right parts out of the Albany TAF for a particular arrival time. If your ETA is 9 a.m. local, you're interested in the first line, which starts at 0800 local, and the INTER, which applies between 0800 and 1400 local. So you'd hope for the conditions in the first line, as described above, but plan for the INTER conditions, meaning 30 minutes holding fuel. Or, more sensibly and more fuel-efficiently for a private pilot, you'd delay your departure so you arrive after the INTER and don't need holding fuel.

If your arrival time is 3 p.m. local, you're interested in the FM, which applies from 1400 local. Line 2 no longer applies, and neither does Line 4 because the INTER finishes at 1400 local. Being a sensible pilot, you may of course carry extra fuel just in case the INTER conditions last longer than forecast, but there's no legal requirement to do so. Carrying extra fuel would just mean you're applying the very old adage that the only time you have too much fuel is when you're on fire.

As for the Avalon TAF, part of the reason it's a doozy is because it's valid for 24 hours, but it's actually no harder than the Albany one once you cross out the lines that don't apply. There are only three lines that will apply for any ETA. Firstly, the prevailing conditions will be either those on Line 2 (from 0600 to 0700), Line 3 (0700 to the next FM, which is 1000), Line 4 (1000 to 0000), or Line 5 (0000 till the end of the TAF period, which is 0600).

Secondly, one of the three TEMPOs may apply. Lastly, because the 30% probability of an INTER overlaps with the first TEMPO period, that line may apply too.

Happy flying, and if in doubt about the weather, remember rain and thunderstorms and all that stuff look much nicer from ground level. The only weather phenomenon that looks better from the air is the full circle of a rainbow!

More ways of expressing time:

0700Z

Navy – 6 bells on the morning watch

Air Force – 7 o'clock in the morning, too early to be out of bed

Army – the big hand is on the 12 and the little hand is on the 7

Bush pilot – it's Thursday morning