Reading the **Weather**

MetService is launching a new product that will make it easier for pilots to understand the weather.

From late June, the GRAFOR (Graphical Aviation Forecast), along with the recently released Graphical NZ SIGWX (GNZSIGWX) chart, will replace the existing text ARFOR. This change will swap pages of text for graphics.

Imagine you are flying from Napier across Cook Strait to Golden Bay. You go to MetFlight to get a weather briefing, making sure not to skimp on weather reports and forecasts. You print out the necessary en route ARFORS and TAFs, as well as any neighbouring forecasts that could become important later on.

Figuring out what weather is affecting which area, and what differences there are between each region, can take a lot of time. You also notice this morning's ARFORs are only valid out to 0100Z (1:00 pm NZ Standard Time), and you were planning a later arrival into Takaka. Will the forecast change drastically in the next issue? What weather should you expect in the afternoon?

Surely there's a better way? Welcome to the GRAFOR.

MetService meteorologist and recreational pilot, Tui McInnes, says the GRAFOR is the culmination of two years' work, developed alongside the GNZSIGWX, and marks a significant step forward in how weather information is presented to pilots.

"The objective for MetService is to provide better methods of communicating weather more efficiently and in a style that is easy for users to understand," says Tui.

The new GRAFOR product, alongside the GNZSIGWX, will provide the same level of information as the current ARFOR, displayed spatially on a map.

Clouds, weather, visibility, freezing level, and fronts are all depicted on the GRAFOR, providing a visual reference of the weather situation and forecast. The entire country is viewable on one map, making the weather briefing succinct and easy to follow.

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Wind information will be available in the same format as is currently used, and will be called Aviation Area Winds (AAW). Below is an example of how the Alps winds may appear.

Tui explains how the new GRAFOR graphic works (see next page).

"The full map shows New Zealand, sectioned off to separate areas of similar weather. Each area has an accompanying text box, stating both coverage and height of forecast cloud, the forecast weather and corresponding visibility reduction. In each text box, the worst weather expected is noted.

"Also included on the map are the position of any fronts and their forecast movement, and spot freezing levels."

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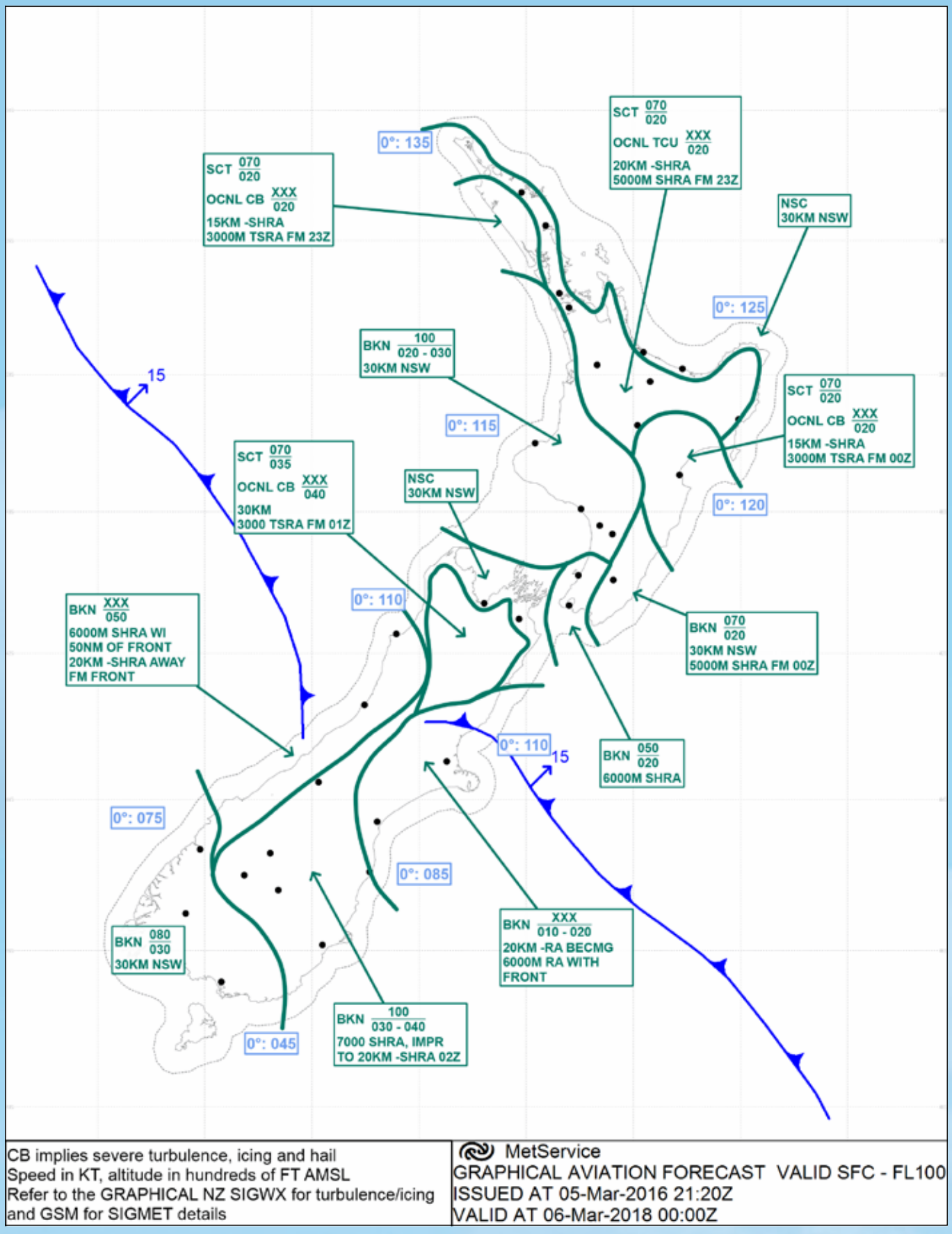
Aviation Area Winds

AVIATION AREA AL VALID 1800 to 0600 UTC

BECOMING		0000	0600
3000	16010		
5000	17010 PS03	14020 PS03	
7000	17015 ZERO		14015 PS01
10000	16010 MS05		

Example of the new GRAFOR



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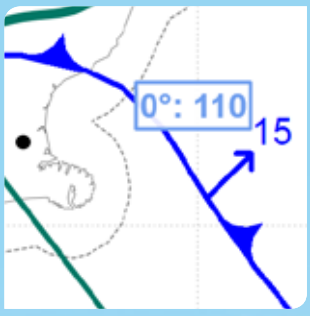
The two following examples were taken from the full map on page 20. The new GRAFOR provides all heights in flight levels, or hundreds of feet.

The example below shows a forecast for the area around Dargaville. It indicates scattered cloud with bases of 2000 ft and tops of 7000 ft and occasional cumulonimbus clouds with bases of 2000 ft and tops above 10,000 ft.

The forecast weather is 15 km visibility in light showers before reducing to 3000 m in thunderstorms from 23Z.

Below we have a frontal example taken from the area around Christchurch. It depicts a cold front, moving northeast at 15 kt, and a spot freezing level of 11,000 ft.



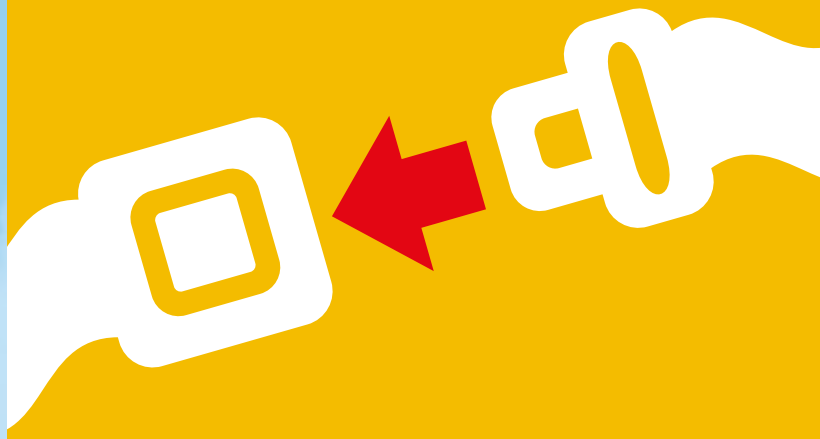
So what is the difference now for you and that trip to Golden Bay?

You get a weather briefing from MetFlight, or your usual MetService portal, and print off the GRAFOR and GNZSIGWX maps and AAW valid for the time you are planning to fly.

Even a brief glance at the map shows you where the inclement weather is, helping you more easily plan the safest and most efficient route.

At any one time, there will be three maps available, each with a six-hour validity, covering a total period of 18 hours.

"This extends the current coverage by a considerable margin," says Tui, "enabling better decision making especially for long cross-country flights. We expect this will make things easier for pilots." ■



Buckle Up

Injuries and fatalities sustained in some aviation accidents may have been prevented, or reduced in severity, if seat belts had been worn correctly.

It's important to remember that passenger and crew seat belts and harnesses are only effective when they are securely fastened and properly adjusted.

The Transport Accident Investigation Commission's investigation into the 2014 Eurocopter AS350-B2 accident at Mount Alta found that the injuries sustained by the helicopter's occupants might have been reduced had their seat belts been fitted tightly. In this accident, five of the seven occupants were ejected from the helicopter. There was one fatality, and three received serious injuries.

Under rule 91.207 *Occupation of seats and wearing of restraints*, the pilot-in-command (PIC) of an aircraft must require each passenger to fasten their seat belt during the critical phases of flight, or when the aircraft is flying at a height of less than 1000 feet above the surface. This also applies at any other time that the PIC considers it necessary. This applies to all operators, regardless of aircraft size.

Educating all passengers on the importance of correct seat belt use should form a key part of the safety briefing before every flight.

It's also important that seat belts and harnesses are properly maintained. CAA inspectors have recently seen seat belts and harnesses that were damaged, twisted, frayed, and even installed upside down. The condition of seat belts and harnesses should be checked on an ongoing basis by the operating crew; not only during maintenance. ■