

Note: The FFS is currently working in a test environment and will be available for general use by the end of October. This manual is a draft to enable review of the operation and features available.

The screenshots were obtained during testing and will be updated when the final version is released.

Omarama Autonomous Flight Following System

The Omarama Autonomous Flight Following System – FFS – provides a flight following service with no requirement for someone to physically monitor the tracking data from the aircraft.

The FFS utilises the [GNZ Tracking service](#) to provide latest positions for the aircraft, so will work with any aircraft tracker which that site can utilise.

This includes Flarm and cell phone trackers, however, these should not be used as the sole device when flying in the mountains as the signal will be lost causing a warning to be issued by the FF system.

Multiple devices can be used in each aircraft, for example, a Spot on 5 or 10-minute positions to provide total coverage along with a phone tracker on 10 seconds to provide a detailed track.

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1. How it works – overview

The Omarama airfield app is used to initiate the FFS for a flight.

Once initiated, the OGC server will monitor the a/c position via the GNZ Tracking site. This monitoring is performed at 5-minute intervals, and all flights initiated for the day are checked during each cycle.

The latest status of each flight is available via the OA app, or on-line through the [OGC server](#).

Once tracking data is being received, full monitoring is maintained, and the status updated for a normal flight as follows:

- tracking data being received, but a/c is still inside the Omarama airfield zone which is set to within 1.5km of the airfield
- a/c has moved outside the Omarama zone, and the flight is now active
- a/c has moved back inside the Omarama zone, and the flight is deemed landed

Once landed the a/c is still monitored and if it moves outside the Omarama zone again, the status is updated to an active flight.

This last feature covers a/c flying over the airfield, and repeated training launches. For training flights, the FFS is activated at the beginning of the day, and all flights are monitored whenever the a/c moves outside the Omarama airfield zone.

1.1 Warning events

The following are deemed a warning event:

- loss of tracking data
- a/c has a stationary position. Stationary is defined as 3 new positions within a 200m circle. Depending upon the tracking device settings, this can vary between 15 and 35 - 40 minutes with a Spot reporting set to 10 minutes. Note that there are two cycles operating. For example, the FFS performs a check every 5 minutes, and a Spot will transmit every 10 minutes.

In the event of a warning situation an email is sent to the pilot email address, and a text is sent to each of the pilot and the FF agent. In addition, members of the Omarama FF response group are each notified by text.

The email and text provide the last known position of the aircraft in Lat and Long, as well as the distance and bearing from the nearest landout strip.

Should the warning situation be recovered, i.e. position reporting resumes or the a/c moves outside the 200m circle, then normal operation is resumed and the status is set back to active.

2. Initiating FFS

The Omarama airfield app is used to initiate flight following. Clicking the SET ACTIVE Flight button on the menu page displays the setup screen, shown on the right, where the flight details are entered.

This can be set up any time on the day of the flight, ideally prior to the flight taking off. Flights initiated after take-off will be set to active on first reporting.

The FF Agent Name is the nominated person who will be supporting the pilot.

Valid phone numbers MUST be entered for both the pilot and agent as these will be the primary contacts for flight updates.

A valid phone number is a country code plus a phone number without the leading 0, e.g. 6421619539.

2.1 Live or Test Flight

Once the details are completed, and these details are stored internally and will be displayed for the next flight.

2.1.1 Live flight

A live flight is for the normal operation of FF. Once activated the flight will be monitored automatically.

When the flight becomes Active, i.e., the a/c leaves the home airfield zone – Omarama, defined as a circle of 1.5km radius centred on the runway – the pilot and the FF agent are notified that this has happened. The pilot is sent an email and a text, the FF agent is sent a text.

This is designed to indicate to the pilot and agent that FF has been successfully initiated.

No further emails or texts are sent unless a warning situation is activated.

The 1.5km text can be disabled for each flight if required. This is particularly useful for training flights.

2.1.2 Test flight

Please do not overuse this feature, as it significantly increases the volume of texts being sent by the system. These cost \$.

A test flight is for the pilot to experiment with FF to see how it operates. When clicked the same operation as a Live flight is followed, with the addition of more verbose reporting.

This is indicated by the panel displayed when the button is clicked.

The screenshot shows the main menu for Pilot: Brian Savage. At the top, it displays the pilot's name and contact information: Phone: 6421619539, Email: brian.savage@fossicking.co.nz. Below this are several blue buttons: LAUNCHES, OXYGEN, RECORD OGC GLIDER USE, and NEXT WEEKEND. A larger blue button labeled WEIGHT AND BALANCE is positioned below these. Underneath, there is a section titled 'Manage flight following' with two buttons: SET ACTIVE FLIGHT and ACTIVE FLIGHTS. At the bottom, a section titled 'Flight tracking' contains two buttons: GNZ TRACKING SITE and OA TRACKING SITE. The top status bar shows signal strength, 100% battery, and the time 13:59.

The screenshot shows the 'Set active flight' setup screen for Pilot: Brian Savage. It contains several input fields: Pilot phone (6421619539), Aircraft rego (gkd), Aircraft type (ASW19b), Airfield (Omarama), FF agent name (Colleen Ryan), and FF agent phone (12236688). There is also a 'Notes' field with the text 'Notes'. Below the fields, a note states: 'Any changes to the above entries will be saved and used next time.' At the bottom, there are two blue buttons: LIVE FLIGHT and TEST FLIGHT. The top status bar shows signal strength, 100% battery, and the time 15:13.

The screenshot shows a notification panel titled 'Test flight mode'. The text inside reads: 'This mode is for you to test the working of the flight following service. All functions will work as normal except for: 1. Alerts will only be sent to the pilot email and phone. 2. Verbose reporting is implemented so you can track what is going on.' At the bottom right of the panel are two buttons: CANCEL and OK. Below the panel, the text 'Notes: NOTES' is visible.

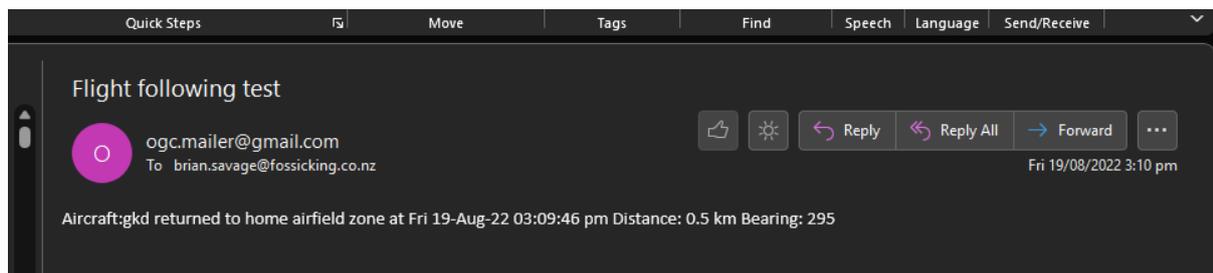
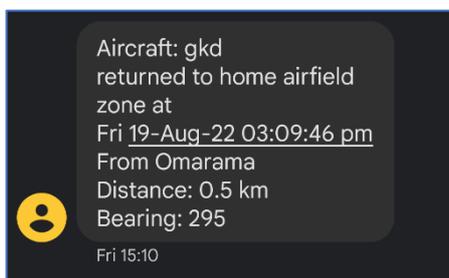
Test flight **SHOULD NOT** be used for live FFS flights as no warning texts are sent to the Omarama FF response group in the event of an incident occurring.

More verbose reporting involves the following additional reports to the pilot and agent, these are an email to the pilot and texts to the pilot and agent when:

- tracking data is first received
- a/c leaves the home airfield zone
- a/c returns to the home airfield zone
- leaves and returns are repeated as necessary

This enables a pilot to say, drive out of Omarama with a tracking device and test what happens when stationary for 15 minutes, lose tracking data, restarting of either and so on.

Example text and email:



2.2 Monitoring flights

Clicking the ACTIVE FLIGHTS button in the app displays the active flights for today. They are sorted in the order of

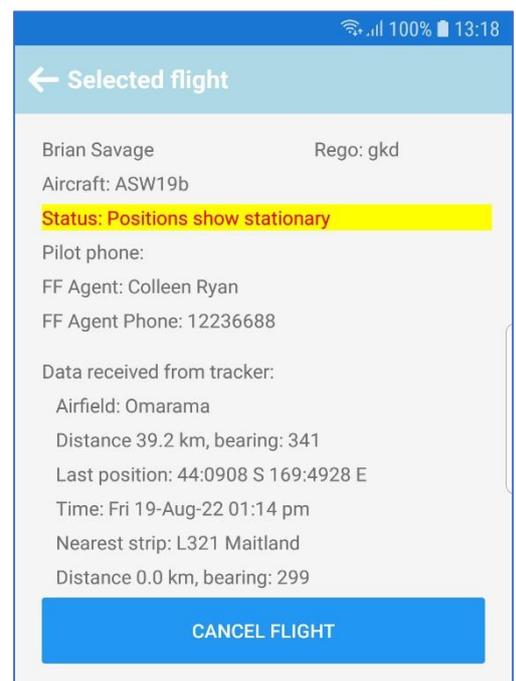
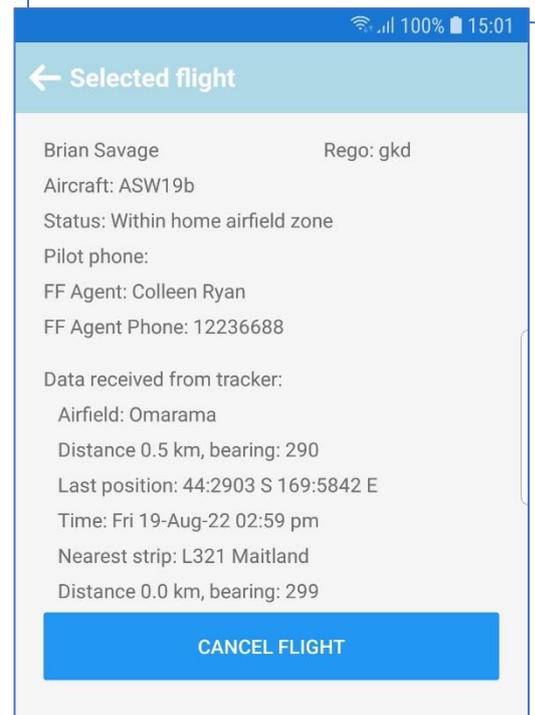
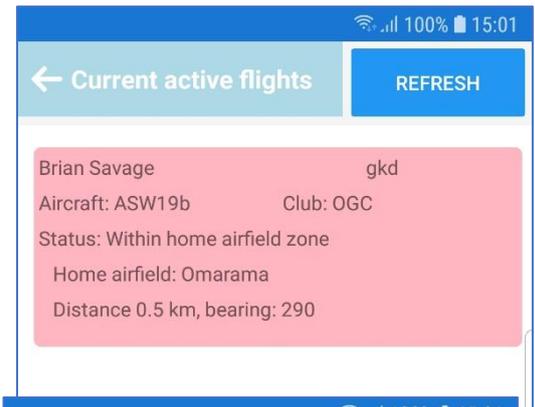
- any flights with warnings first
- active flights
- returned home flights
- cancelled flights

The data for each flight is a summary of the last status report.

Clicking on a flight displays all current information about a flight.

A flight can be removed from FF for the day by clicking the Cancel flight button. The flight is retained on the list, but no longer is monitored

If warnings have been issued for a flight, they are highlighted as shown below.



3. Warning situations

The FFS will monitor the a/c positions and not report – under a live flight situation – any events for an active flight unless:

- Tracking data ceases to be received
- The positions received indicate a stationary aircraft for 3 successive position reports

When a warning is triggered, emails and texts are sent to the pilot and FF agent, as well as the Omarama FF response group nominated for the day.

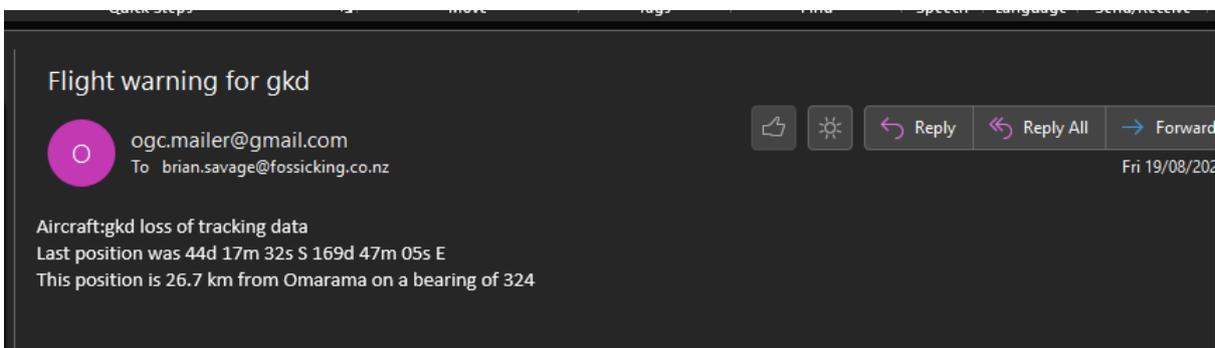
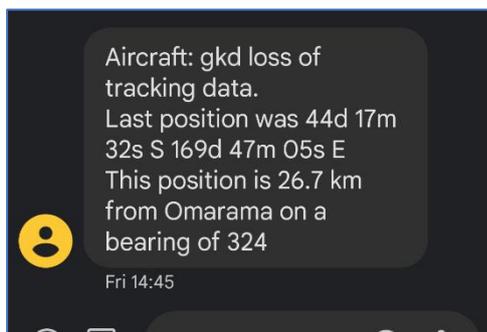
This group is the Duty Instructor, Tow pilot, Launch Point controller for winching, as well as other personnel such as the OGC president, airfield manager etc. and is decided at each morning's 10 am briefing.

3.1 Loss of tracking data

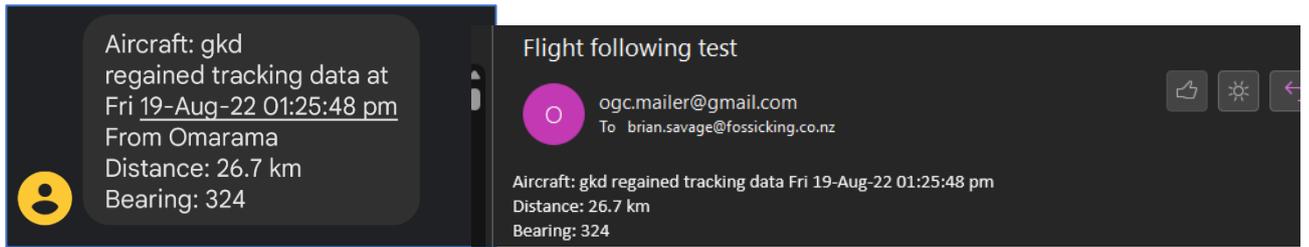
When the last received position is older than 15 minutes, then it is assumed that tracking is lost, and a warning is issued.

The warning is to the pilot by email and text, the FF agent by text, and the Omarama FF response group by text.

Sample warnings are as follows:



If tracking is regained, then a warning message is sent to the same recipients as the original warning

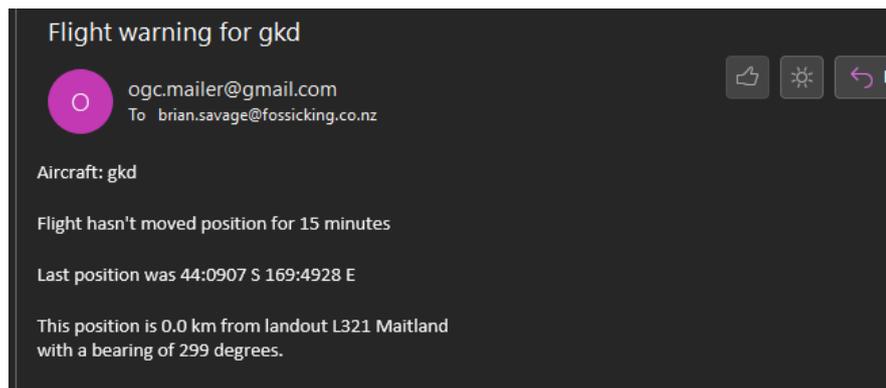


3.2 Static position

If the positions received over 3 cycles indicate that the a/c is stationary, then a warning is issued.

The definition of 3 cycles is 3 new positions received, so for Spot set on 10-minute reporting that is 30 minutes. For trackers that are set to have a reporting period under the 5-minute FF monitoring periods, the delay would be 15 minutes. The warning is to the pilot by email and text, the FF agent by text, and the Omarama FF response group by text.

Sample warnings are as follows:



The distance and bearing from the nearest landout in the Omarama landouts list is calculated and displayed, the idea being that a minimal distance from a landout implies that hopefully, the a/c is on that landout.

If tracking is regained, then a warning message is sent to the same recipients as the original warning.



4. Quick start guide

How to quickly get started with FFS.

1. Start your tracking device and make sure it is displaying on the GNZ tracking service [GNZ Tracker](#)
2. Download the Omarama airfield app to your phone and log in or register. OGC members don't need to register, the app login is the same as your website login.
3. If you can't find the app on the app stores, click on the links on the OGC pilot's website: [Omarama Airfield users area](#)
4. On the app menu page, click the Set Active Flight button, and enter your details.

Points to note:

- Use exactly the same aircraft registration as it is displayed on the GNZ tracking site. This is used to sync all the processes
- Make sure that the phone numbers are in Country code format, e.g., 64213456789. If not in that format, you won't receive texts.

The details you enter are stored in the app so you don't have to enter them each time.

5. The first time you set up a flight, click the Test Flight button. This means you will get more texts to give you confidence the FF system is working. If your tracker is on, you will get a text telling you that. You can experiment with what happens when you turn your tracker off, etc. Remember that a warning is only issued after 30 minutes to allow Spots on 10 minute cycles to register a minimum of 2 stationary or loss of signal events.

5. Frequently Asked Questions

Why don't you just follow all flights on the GNZ site?

There are several reasons for this:

- We only follow aircraft where the pilot has requested FF out of Omarama. Otherwise, a random flight may have planned to land at a site, and SAR could be instigated wrongly.
- We need to have aircraft flight, pilot and pilot's FF agent details to be able to perform some follow up before SAR is instigated

Why do I need a satellite tracker?

Cell phone coverage cannot be guaranteed, particularly in the mountains, so a satellite tracker such as Spot or InReach is the only way to guarantee the benefits of FF.

To enable a detail view of your track on the GNZ tracker, a cell phone tracker on say 10 second reporting can be used as well as a satellite tracker, and the GNZ tracker will display both as a combined track. If cell coverage is lost the satellite tracking will still be happening and most cellphone tracker will store the track and send it when cell coverage is resumed, and the GNZ tracker will then display the full track.

The worse case scenario is when cell coverage is lost and there is no satellite backup, then a SAR will be instigated for no reason.