

Christchurch International Airport

Grass Runway Procedure Briefing Package



Introduction

Christchurch International Airport is unusual in that it has a large number of General Aviation (GA) aircraft, including helicopters, operating to and from the same airfield as International and Domestic passenger carrying aircraft. With this mixture of traffic it is important for all parties involved to build a greater understanding and awareness of Air Traffic Control requirements and general pilot airmanship issues. The overall aim is to enhance the safety of operations at Christchurch airfield. The intention of this briefing package is to provide the GA operator with information specific to Grass Runway operations at Christchurch.

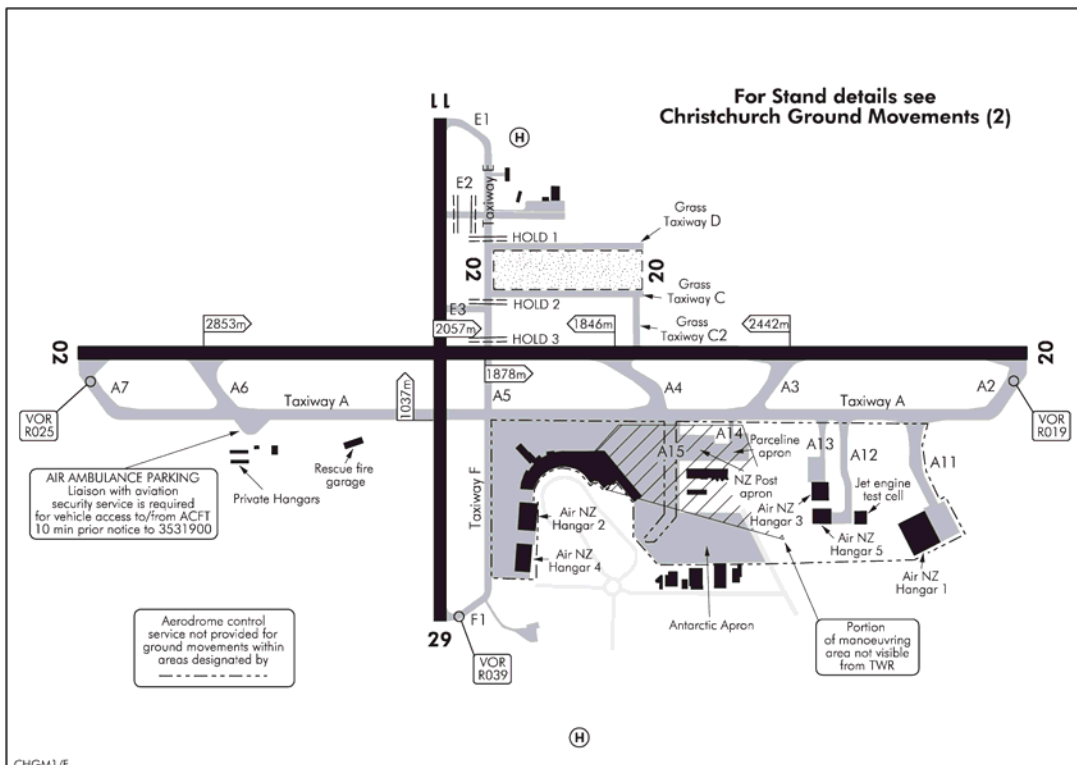
General Overview

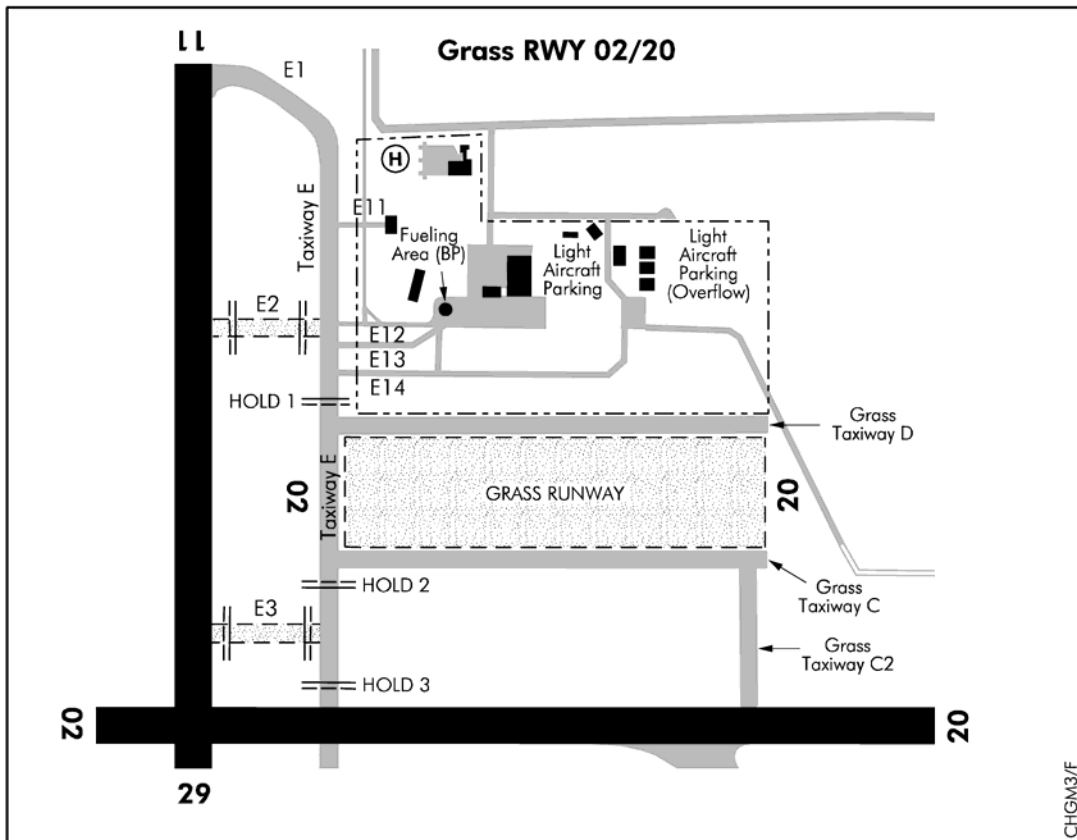
The Grass Runway at Christchurch allows GA aircraft to operate at the same time larger international and domestic aircraft are using the main runway. This keeps the traffic moving and avoids sealed runway capacity issues, thereby minimising the delay to the scheduled traffic. There are, however, several areas to consider when using the Grass Runway and it is very important to be familiar with these before operating.

The lateral separation between the grass and sealed runway is only 165m. This requires a pilot to be alert to other aircraft movements to or from the aerodrome and use appropriate airmanship at all times. The grass circuit is at 900ft AMSL, inside and below the sealed runway circuit of 1500ft AMSL. Helicopters operate to the Christchurch Helicentre some 300m to the west of the grass.

Prior to operating to or from the grass familiarise yourself with the following publications and rules:

- AIPNZ NZCH AD 2. The Christchurch Aerodrome (1) and (2) landing plates show the circuit altitude and direction and have a note with a list of rules and procedures for Grass Runway 02/20. Read these carefully as the grass is quite wide and up to three aircraft may be cleared to land at one time.
- AIPNZ NZCH AD 2. The Christchurch operational data page shows a group rating of 3 for the grass. This is below the group rating of the most common GA aircraft types. The Grass Runway is quite short at 515m and it may be necessary to check a performance chart for your aircraft, particularly if it is a hot day. If you have any doubt request to use the runway.
- AIPNZ NZCH AD 2. The Christchurch ground movements chart (1) and (3) require study and help you to become familiar with the position of the grass landing area, grass taxiways C and D, the holding points (Hold 1,2,3) on taxiway E and the taxiways to the aero club and western GA areas. These are reproduced below for an overview.
- AIPNZ NZCH AD 2. The Christchurch Helicentre procedure page is useful to know about because of the close proximity to the grass. This plate shows the departure and arrival procedures used.





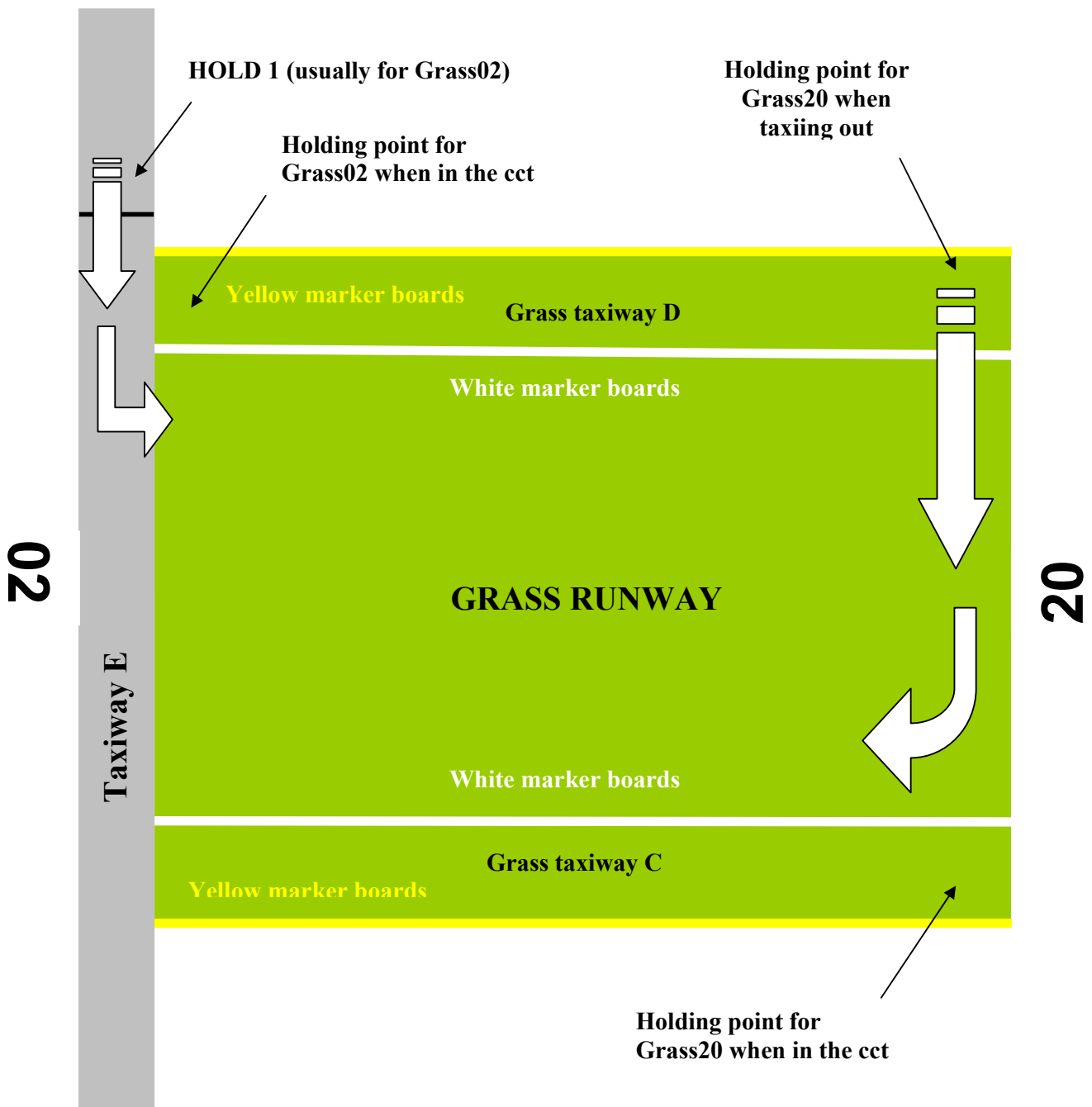
Departures

Listen to the ATIS for conditions at Christchurch.

Call Christchurch Ground 121.9 for taxi clearance and advise if you need the sealed runway for departure. If using the grass, Ground will issue a taxi clearance to the appropriate holding point (HOLD 1 for Grass 02 or Grass taxiway D for Grass 20). This clearance will also normally include your VFR departure instructions.

When ready at the holding point contact Christchurch Tower 118.3. At a suitable position in the traffic you will be given a line up or take-off clearance. If there is wake turbulence from departing runway traffic you may be held at the holding point clear of the grass to allow for grass landings. When you do line up, the Grass Runway is quite wide so plan to line up on the left hand side to leave a reasonable space to your right for other aircraft to land or take-off. This is easier when Grass 02 is in use because it is necessary to cross the grass to line up when using Grass 20 as shown in the following diagram.

Grass 02/20 Line Up



When lined up and take-off clearance has been given, just before you roll, make a mental note of any sealed runway traffic which may be about to depart or overshoot, as this may end up relatively close behind or even overtake you on the climb out.

On the climb out ensure you follow the instructions on the AIPNZ NZCH AD 2 Christchurch Aerodrome (2) landing plate.

Overshooting: Because of simultaneous operations on the main RWY 02/20 aircraft taking off or overshooting **must not converge towards the main runway**. Passing 420ft AMSL aircraft are to commence a turn to diverge away from the main runway by at least 10°, then fly a square crosswind. The turn is not required if ATC confirm on departure a non-standard turn towards the main runway.

The small turn away from the sealed runway on the climb out helps to add a little buffer between the grass and sealed runway traffic.

ATC may offer a non standard turn out towards the runway if you are departing to the east, but this is dependant on the traffic situation at the time and should never be anticipated.

Arrivals

Listen to the ATIS for conditions at Christchurch prior to joining.

What to expect

From the west

This is easier than coming through the overhead. Usually you will get a VFR arrival and joining for the grass unless a Rwy11 IFR arrival is in the way. If this is the case you can sometimes expect to be held west of Pine until you can sight the IFR traffic and are able to follow.

When the grass circuit is busy keep a good lookout and you will be given traffic in the circuit to follow. Listen carefully as to where to join the circuit as you may be given base, mid downwind or early downwind by the controller to make your joining smoother and hopefully into a gap if it is busy.

Keep in mind that the tower is looking directly towards the setting sun, which is particularly bad in the winter months, and at this time of the day keep a good look out for other traffic. The tower controller can breathe a small sigh of relief when you say the words “traffic in sight”, so listen carefully to the traffic information you are given and let the tower know as soon as you can see it.

From the east

Arriving for the grass through the overhead from the east is more complex than from the west. The controller has to take into account the following:

- Departing runway traffic
- IFR training MAP aircraft

- A possible go round by arriving IFR traffic
- Opposite direction traffic through the overhead
- Position of grass traffic

Often you will be required to hold at Russley until the controller can get you across. Remember the tower controller cannot see you because of the tower roof from shortly after Russley until you are west of the main runway.

If it is not too busy and all the above things are OK normally you will get direct from the east on to a right or left base for the grass the shortest way. Don't always expect this though because sometimes the traffic flows much better if you cross overhead and join left-hand or right-hand downwind, depending on the runway in use.

When arriving for the Grass Runway it is important to comply with NZCH AD Aerodrome (2) 5.(b). This says that whenever possible do not extend the grass circuit further north or south than abeam the main paved runway 02/20 thresholds. The intention of this statement is to avoid a situation where you could end up on a medium to long final and be significant traffic for aircraft using the sealed runway. So keep the base leg at least abeam the sealed runway thresholds or closer. If you need further, request this from ATC as you may need to be sequenced with sealed runway traffic. If the grass circuit is busy extra vigilance is required staying abeam or within the sealed thresholds because if you go too far downwind the other grass traffic is also forced to make a bigger than desired circuit.

Something else to watch out for, is **do not** go through the centreline of the grass runway to the east of final, as you make the turn from base leg on to final. This not only scares the controller but also the pilots of any IFR traffic on final for the runway. There is a particular set of conditions, with a nor westerly wind aloft, which make this highly probable as the wind is pushing you round the base turn. There can still be a steady northeaster on the ground. If these conditions exist on a Grass 02 day, it can sometimes be easier to aim to roll out on final over the PSR aerial and this extra wind will put you nicely on the grass centreline. It is much better this way around than having to correct after missing the centreline and possibly affecting other traffic.

Photographs are included of final approach for Grass 20, a downwind picture and a picture showing the latest point to turn base abeam the sealed runway threshold. This is also repeated for Grass 02.



Photo 1 Final for **Grass 20** (landing area highlighted in white, grass taxiways C (left) and D (right)). Note traffic landing ahead on the Grass runway and one departing from the sealed runway.



Photo 2 Short final for **Grass 20** lined up on left side of grass runway. Note that it is not that easy to see the white marker board boundary of the landing area. The aircraft just landed has turned left into Grass Taxiway C.



Photo 3 Downwind for the Grass runway abeam the Grass 20 threshold.



Photo 4 Base for Grass 20. Do not go any further north than the sealed runway threshold shown.



Photo 5 Turning final for **Grass 02** (landing area highlighted in white, grass taxiway D on the left and grass taxiway C on the right)



Photo 6 Short final for **Grass 02** lined up on the left side. Note how difficult it is to see the white marker boards on the left.



Photo 7 Base for Grass 02. Do not go any further south than the sealed runway threshold shown.

Landing

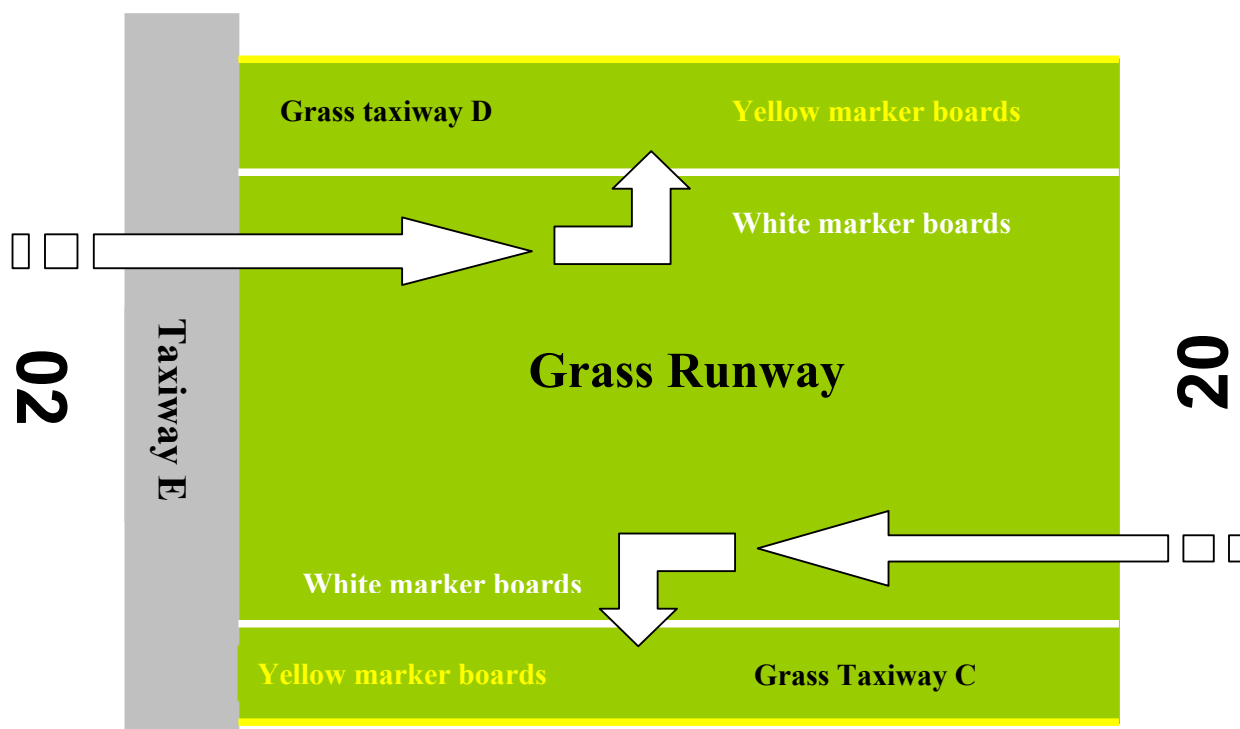
The landing area of the Grass is quite wide at 135m. It is bounded by the white marker boards. Visually this can look a little bit strange because of the width as shown in the photographs above. Do not be tempted to land on either of the grass taxiways which have yellow marker boards on one side. The width of these taxiways may look better from the air and itinerant aircraft have mistakenly landed on these from time to time.

When landing on the Grass note the Arrival Procedures on the AIPNZ NZCH AD Christchurch Aerodrome (2) landing plate.

- (i) **Runway separation is NOT provided on the grass and aircraft may be cleared to land up to number 3.** This is because the Grass Runway is quite wide. There is also the additional benefit of less R/T congestion when the landing clearance can be given early. E.g. “Grass 20 number 2, Cleared to land”.
- (ii) **Aircraft when landing shall land on the right of any aircraft which has already landed or is about to land or which is taking off or about to take-off.** This is again because of the width of the Grass Runway.
- (iii) **Aircraft when landing shall leave a reasonable space to the right for other aircraft to land or take-off.** Primarily this is so aircraft following you, which have been cleared to land number 2 or 3, have enough room to position on to final while you are landing.
- (iv) **Aircraft after landing shall turn left, unless otherwise instructed by ATC, for the purpose of observing other aerodrome traffic and then move clear to grass taxiway east or west as soon as possible.** This left turn after landing is the safe direction with possible traffic following you but positioned on your right. **N.B.** The only time you will be offered anything other than a left turn after landing by ATC is when you are complete on Grass 20 and there is enough space with traffic behind. In this case tower would use the phraseology “Cleared to land right, taxi right”.

Typical approach positioning, roll out and turn are shown in the following diagram:

Western GA parking



Overshooting

When overshooting for any reason (too high on approach or sent round by ATC etc) the same rules apply as when you are departing from the grass.

On the climb out ensure you follow the instructions on the NZCH AD 2 Christchurch Aerodrome (2) landing plate as follows:

Taking off or Overshooting: Because of simultaneous operations on the main RWY 02/20 aircraft taking off or overshooting **must not converge towards the main runway**. Passing 420ft AMSL aircraft are to commence a turn to diverge away from the main runway by at least 10° then fly a square crosswind.

Tower will sometimes offer an early turn into the circuit if there is no traffic crosswind or early downwind. This helps by moving you away from the sealed runway sooner, particularly if there is wake turbulence from a departure.

Wake Turbulence



When big aircraft and little aircraft operate from the same airfield there is always the danger of wake turbulence. Whilst we do have simultaneous parallel operations approved for the runway and the grass, wake turbulence still needs to be applied. This of course interrupts a lot of grass traffic particularly if you are staying in the circuit. Picking a time to come out for grass circuits is important if you want the minimum amount of disruption. Our peak times are particularly 1100-1200 and 1400-1600. These times would be worth avoiding for grass circuits, as you can experience a string of IFR heavy or medium wake turbulence departures causing a 3 minute delay and they can all leave radar wise, 2 minutes apart. This means continuous wake turbulence for sometimes 10-15 minutes at a time. You can help the tower controller by listening out and being ready for an expeditious departure when there is a gap.

As well as departure there are two other areas we want to protect for wake turbulence. Firstly, on climb out we may want you to make the crosswind turn away from the runway as soon as you are at a safe height. This is to keep you away from the wake turbulence of an IFR aircraft off the runway. This aircraft may have rolled slightly after you but will overtake you on the climb out.

Secondly, on final approach you may be instructed to “go around” because an aircraft, usually a jet has departed from full length and rotated before the grass vector. This normally only applies when RWY02 is in use. An early crosswind turn is normally approved to keep you clear of the departing jet’s wake turbulence.

You can choose to take your own wake turbulence separation but be very careful and “know” what you are saying “no” to. As you can see in the pictures above this is a very serious phenomenon. This will not be suggested by the tower.

Grass Circuit “Full”



The number of aircraft that can operate in the Grass circuit for circuit training is self limiting. This is mostly because the circuit becomes too big and the number of aircraft in the grass circuit can force the downwind leg to extend beyond the sealed threshold limitation. The risk is that aircraft on base leg for the grass, outside the sealed runway thresholds, will conflict with aircraft on final for the runway.

If preceding grass traffic extends too far downwind it is impossible to stay behind that traffic and keep the circuit within the sealed thresholds. Pay particular attention to **keeping your circuit within the sealed thresholds** when it is busy as you may be causing a potential problem for those behind you. Christchurch Tower will normally limit the number of aircraft operating in the grass circuit to four or less for these reasons. This also leaves enough gaps for the departing and arriving grass traffic.

If Grass circuits are required it would be normal to wait until one of the four maximum aircraft was complete before taxiing out. On the very odd occasion that another local operator requests grass circuits and you have been operating for the longest period of time you may be asked to land or vacate the circuit. This is a very rare occurrence as the wake turbulence, described previously, from the greater number of Heavy and Medium IFR aircraft, has meant there is less circuit training conducted on the Grass Runway overall.

Other Airmanship Considerations

It is a requirement to squawk 2200 in the grass circuit. This allows the tower to operate a 2200 filter and avoid label clutter close to the airfield. For information this does make you visible on the TCAS of inbound IFR aircraft. Remember when leaving the grass circuit or on completion of the exercise to return the aircraft transponder to the allocated skin code e.g. EYD 1657. If there is no allocated code, return to 1200.

Grass Closed

Sometimes the grass runway is closed (e.g. after frost or rain). This means all traffic has to be sequenced for the runway. It is very unlikely under these circumstances that you will get runway circuits unless it is very quiet and outside the peak times. So plan circuit training at another airfield while the Grass is closed. If it is calm, and you are going to the west, you may be offered Rwy 29 for departure from taxiway E3 to help avoid the Rwy 02/20 traffic and wake turbulence. If going to the east you may be offered Rwy 11 from taxiway E2 or E1 for the same reason. When arriving there may be slightly more holding in order to set up the correct sequence for the runway. It is possible you could be offered Rwy29 or Rwy11 if appropriate and this would help the traffic flow.

Night Circuits



The sealed runway separation standards used by the tower controller at night are much greater than those used during the day. This means to allow more space between your aircraft and the one in front. As an example you cannot cross the sealed runway threshold for a touch and go until the preceding aircraft on touch and go has commenced a crosswind turn or reached the upwind threshold. This is quite a distance because of the long runway. If you are too close behind, you will be instructed to “Go Around”.