
Plane talking



Abbreviations

AFIS	Aerodrome flight information service
AIP	Aeronautical Information Publication
ATC	Air traffic control
ATIS	Automatic terminal information service
ATS	Air traffic service
AWIB	Aerodrome and weather information broadcast
CFZ	Common frequency zone
FATO	Final approach and take-off area (helicopter)
FIS	Flight information service
FISCOM	Flight information service communication
GNSS	Global navigation satellite system
IFR	Instrument flight rules
MBZ	Mandatory broadcast zone

MHz	Megahertz
NM	Nautical miles
NORDO	Non radio-equipped
PTT	Press to talk
QNH	An altimeter sub-scale setting to obtain elevation when on the ground
RCCNZ	Rescue Coordination Centre New Zealand
RTF	Radiotelephony
SARTIME	Search and rescue time
TLOF	Touchdown and lift-off area (helicopter)
UNICOM	Universal communication service
VFR	Visual flight rules
VHF	Very high frequency (30 – 300 MHz)
VMC	Visual meteorological conditions
VNC	Visual navigation chart

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See the CAA website for Civil Aviation Rules, advisory circulars, airworthiness directives, forms, and more safety publications. Visit aviation.govt.nz.

Every effort is made to ensure the information in this booklet is accurate and up-to-date at the time of publishing. But numerous changes can occur with time, especially in regard to airspace and legislation. Readers are reminded to get appropriate up-to-date information.



When a hand-held microphone is used, make sure that the transmit button is not accidentally pressed when it's stowed in the holder.

Effective communication

Good radio communication is vital to aviation safety. Current and accurate information allows orderly sequencing, adequate separation and collision avoidance. In an emergency, clear and timely communications help get the quickest and most appropriate response.

This booklet is intended to be a handy guide to good radio operating practice. It should be read in conjunction with Advisory Circular AC91-9 & AC172-1 *Radiotelephony Manual* and the *New Zealand airspace* booklet.

To be effective, all radio communications must be clear, concise, consistent, and correct.

Clear

You need to speak into the microphone, at a slightly slower rate than normal conversation, using standard phraseology.

Concise

Transmit only for the minimum time necessary. There are important elements in a radio call – make sure you include them, without unneeded information.

Most people don't need to hear what your departure point or destination is, unless it's nearby and is relevant to your current position and direction of flight. Think of the information you would like to hear from other aircraft.

Consistent

Be consistent, not only by using standard phraseology, but also by the order in which you give the information.

Correct

The situational awareness of others is affected by the accuracy of your radio calls – more specifically your position reporting. For instance, never use the words “abeam” or “approaching” to describe your position, as they are meaningless to anyone else. A precise description, such as “three miles southwest of Rakaia” is much more useful.





Know your equipment

A basic VHF aircraft radio will have the following features as standard:

- A volume control, which may also incorporate the ON – OFF (power) switch.
- A squelch control, which may be a simple press switch, or adjustable in a similar manner to the volume control. This feature permits reception of signals above a predetermined strength. With the squelch off or disabled, you will hear continuous ‘white noise’, which can be useful when setting the desired volume. When reception is ‘broken’, the squelch control can be adjusted so you can hear the full transmission.
- A means of selecting (and indicating) the desired frequency. Some radios have an ‘Active’ and ‘Standby’ frequency selector, enabling the next frequency to be set in the ‘Standby’ window, ready to be toggled into the ‘Active’ window when required.
- And more often than not, a visual indication that the set is transmitting.

Some glass cockpit displays have a ‘virtual’ radio panel as part of the display. The means of manipulating the radio controls may not be immediately obvious, so make sure you are familiar with these before you fly.

The ideal pilot-radio interface is a headset with a boom microphone, with the transmit button located on the control column.

Your boom microphone should be positioned to just touch your lips when they are pursed. With a headset, you will usually be able to hear ‘sidetone’ when you transmit – that is, you hear your own voice, which is useful for getting your tone, speech volume and cadence right.

Some headsets are also equipped with a volume control for the earphones – this needs to be considered when adjusting the radio volume.

Most aircraft are equipped with intercom systems, and these come in a variety of configurations. You need to know how the system in your aircraft works, as there are several traps for the unwary.

Some intercom systems are voice-activated (‘hot mike’), while others have a press-to-talk (PTT) button. Don’t confuse the intercom PTT with the radio transmit button – many of us have heard those embarrassing ‘long-range intercom’ conversations over the airwaves.

Intercom systems can have their own separate volume and squelch controls, which may or may not affect the radio volume heard in the headset – it’s worth checking this before you use the radio.

Audio selector panels are generally standard on IFR-equipped aircraft, and can also be found on VFR aircraft, depending on the avionics suite. The panel enables listening on individual COM or NAV radios, on either headset or speaker, and has a transmit selector switch. The characteristics of these vary between manufacturers, so some familiarisation may be required when you encounter one you haven’t used before.

If a hand-held microphone is provided as a backup, take care to ensure that the transmit button is not accidentally depressed when the microphone is stowed in its holder. When transmitting, hold the microphone the same distance from your lips as you would set your boom microphone.

Situational awareness can be enhanced with two radios. This is especially useful with increasing traffic and many airspace boundaries. The selection of appropriate frequencies needs to be planned in advance.

Transmitting technique

To ensure your message is received clearly, use the following transmitting techniques:

- Before transmitting, check the receiver volume is set at the optimum level. Listen out on the frequency to be used to ensure your transmission will not interfere with a transmission from another station.
- Be familiar with microphone operating techniques and do not turn your head away from the microphone while talking, or vary the distance between it and your mouth. Severe distortion of speech may arise from talking too close to the microphone, or holding on to the microphone or boom.
- Use a normal conversational tone, speaking clearly and distinctly.
- Maintain an even rate of speech, slightly slower than conversational speed. When it's known that elements of the message will be written down by the recipient, speak at a slightly slower rate.
- Maintain the speaking volume at a constant level.
- A slight pause before and after numbers will assist in making them easier to understand.
- Avoid using hesitation sounds such as "um" or "er".
- Press the transmit switch fully before speaking and do not release it until the message is complete. This will ensure that the entire message is transmitted.

Always remember to keep a good lookout and maintain situational awareness.

Listen up!

Before transmitting, always listen out to make sure that you will not be butting in



on someone else's conversation. A good habit to develop is to use the second radio, where fitted, to listen out on the next frequency to be used. Two or three minutes' monitoring of the new frequency before you need to call can give you an idea what and where the traffic is. This builds situational awareness.

If you do not have a 'pilot' selection on your intercom, to help you hear what is going on, and listen effectively, it may help to ask your passengers to keep quiet at certain points in the flight. You can brief them on the ground before you fly that when you hold up your hand, you would like them to be quiet while you listen to the radio. You can also ask them to keep quiet during the important parts of the flight, like take-off and landing.

Four Ws

The 'Four Ws' is a good guide to keeping your radio calls structured and intelligible. Others expect to hear your calls in the right order:

Who you are calling – the name of the station you are calling, for example "Christchurch Information", "Feilding Traffic", or "New Plymouth Tower".

Who you are – your call sign, which will be either your aircraft registration or the call sign from your flight plan. Prefixing the registration with aircraft type on first contact can assist ATC and others in recognition and expected performance.

Where you are – give an accurate position report, including your location and altitude.

What you want – what you are requesting or what your intentions are. For example, "joining overhead to land", "request controlled VFR on track Raglan Paeroa 3500 feet", or "request latest METAR Hokitika".

Not all calls fit the 'Four Ws' model. Some examples:

- Circuit call – "XYZ downwind". In this example, once you've established initial contact with an air traffic control service, their call sign can be omitted in subsequent related transmissions. Here, the 'what you want' element is also omitted if your intention is to make a normal landing.
- A simple position update while you are operating in an MBZ would not usually have the 'what you want' component.

Another useful mnemonic for position reporting, whether IFR or VFR, is 'PTA-ETA'. That is, Position – Time – Altitude – ETA, and intentions if applicable.



Consider having a prearranged signal to let your passenger(s) know when the radio requires your full attention.
Photo: Andrena Davis

Reading it back

There is a range of ATC clearances, information and instructions that must be acknowledged by a full readback, followed by the aircraft call sign. These are:

- ATC route, approach and departure clearances, and any amendments to these
- clearances for VFR flights to operate within controlled airspace, including entering or vacating the circuit
- clearances (including conditional clearances) to operate on the manoeuvring area at a controlled aerodrome, including:
 - clearances to land on or take off from the runway-in-use
 - clearances to enter, cross, taxi on or backtrack on the runway-in-use
 - instructions to remain on or hold clear of the runway-in-use
 - taxi instructions including a taxi route and holding position where specified
- runway-in-use
- SSR codes
- level instructions
- heading and speed instructions
- altimeter settings, including if received through ATIS; and
- frequency, after frequency change instructions.

The following exceptions are permitted:

- When a VFR aircraft is cleared by ATC to route via a published arrival or departure procedure that is identical to that initially requested by the pilot, there is no requirement for the pilot to read back the clearance in full.
- Instructions not requiring a full readback are acknowledged by “WILCO”, which clearly indicates they have been understood and accepted.

Messages that do not require a readback are acknowledged by transmitting the aircraft call sign.

What's a conditional clearance?

Conditional clearances must be read back in full in all cases.

A conditional clearance depends on another movement being completed before the clearance takes effect. Some typical examples are:

- “XYZ, behind the Cessna coming from your left, cross runway 20”
- “Mount Cook 941, behind the A320 on short final, line up runway 20 behind”
- ABC, after the departing C172, line up behind.



Standard phraseology

Letters are transmitted using the International Phonetic Alphabet to avoid confusion between similar sounding letters, such as M and N.

Letters

A	ALFA	AL fah	N	NOVEMBER	no VEM ber
B	BRAVO	BRAH voh	O	OSCAR	OSS cah
C	CHARLIE	CHAR lee or SHAR lee	P	PAPA	pah PAH
D	DELTA	DELL tah	Q	QUEBEC	keh BECK
E	ECHO	ECK oh	R	ROMEO	ROW me oh
F	FOXTROT	FOKS trot	S	SIERRA	see AIR rah
G	GOLF	GOLF	T	TANGO	TANG go
H	HOTEL	ho TELL	U	UNIFORM	YOU nee form or OO nee form
I	INDIA	IN dee ah	V	VICTOR	VIK tah
J	JULIETT	JEW lee ETT	W	WHISKEY	WISS key
K	KILO	KEY loh	X	X-RAY	ECKS ray
L	LIMA	LEE mah	Y	YANKEE	YANG key
M	MIKE	MIKE	Z	ZULU	ZOO loo

Some abbreviations are transmitted without using the phonetic alphabet, and common examples are:

DME, ETA, ETD, FIR, GPS, IFR, ILS, MBZ, NDB, QNH, RVR, VFR, VHF, and VOR.

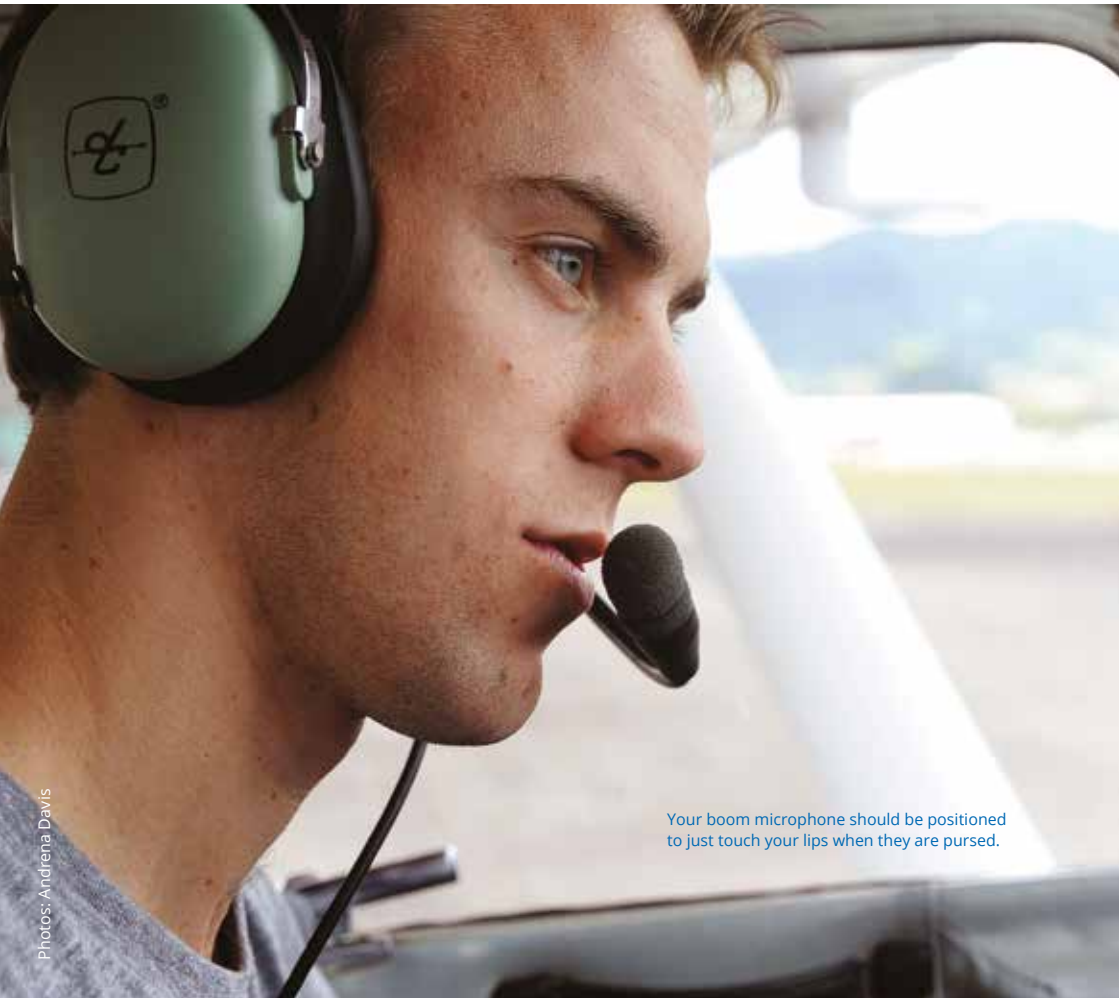
Some other common abbreviations are transmitted as spoken words, for example:

ACAS (A-cas), ATIS, METAR, SIGMET, SPECI, STAR, and T-VASIS (TEE-va-zee).



Numbers

0	ZE-RO	6	SIX
1	WUN	7	SEV-en
2	TOO	8	AIT
3	TREE	9	NIN-er
4	FOW-er	hundred	HUN-dred
5	FIFE	decimal	DAY-SEE-MAL
thousand	TOU-SAND		



Your boom microphone should be positioned to just touch your lips when they are pursed.

Words and phrases

A number of set phrases are used to avoid ambiguity and minimise transmission time. In many cases, one word replaces a lengthy phrase or sentence.

ACKNOWLEDGE	Let me know you have received and understood this message
AFFIRM	Yes
APPROVED	Permission for proposed action granted
BREAK	I hereby indicate the separation between portions of the message (to be used where there is no clear distinction between the text and other portions of the message)
BREAK BREAK	I hereby indicate separation between messages transmitted to different aircraft in a very busy environment
CANCEL	Annul the previously transmitted clearance
CHECK	Examine a system or procedure (not to be used in any other context – no answer is normally expected)
CLEARED	Authorised to proceed under the conditions specified
CONFIRM	I request verification of: (clearance, instruction, action, information)
CONTACT	Establish communications with ...
CORRECT	True or accurate
CORRECTION	An error has been made in this transmission (or message indicated) the correct version is ...
DISREGARD	Ignore
HOW DO YOU READ	What is the readability of my transmission?
I SAY AGAIN	I repeat for clarity or emphasis
MAINTAIN	Continue in accordance with the condition(s) specified, or in its literal sense, eg, "Maintain VFR"
MONITOR	Listen out on (frequency)
NEGATIVE	No, or permission is not granted, or that is not correct, or not capable
OVER	My transmission is ended and I expect a response from you (not normally used in VHF communication)
OUT	My transmission is ended and I expect no response from you (not normally used in VHF communication)

READ BACK	Repeat all, or the specified part, of this message back to me exactly as received
RECLEARED	A change has been made to your last clearance and this new clearance supersedes your previous clearance or part thereof
REPORT	Pass me the following information
REQUEST	I should like to know or I wish to obtain
ROGER	I have received all of your last transmission (under NO circumstances to be used in reply to a question requiring READBACK or a direct answer in the affirmative (AFFIRM) or negative (NEGATIVE))
SAY AGAIN	Repeat all or the following part of your last transmission
SPEAK SLOWER	Reduce your rate of speech
STANDBY	Wait and I will call you
UNABLE	I cannot comply with your request, instruction or clearance (normally followed by a reason)
WILCO	I understand your message and will comply with it
WORDS TWICE	(a) as a request; (b) as information



Examples

Application	Example	Transmitted as
Aircraft call sign	QFA 355 RLK 582 XYZ	Qantas three five five Link five eight two X-ray Yankee Zulu
Altitude (and cloud height)	300 ft 1500 ft 10,500 ft 13,000 ft	three hundred feet one thousand five hundred feet one zero thousand five hundred feet one three thousand feet
Flight levels	FL 180 FL 200	flight level one eight zero flight level two hundred
Headings	150 080 300	heading one five zero heading zero eight zero heading three zero zero
Wind direction and speed	080/25 100/18 210/25G40	wind zero eight zero degrees two five knots wind one zero zero degrees one eight knots wind two one zero degrees two five knots gusting four zero knots
Runway designator	19 06 23L	runway one nine runway zero six runway two three left
Mach number	0.84	Mach decimal eight four
Altimeter setting	984 hPa 1000 hPa 1027 hPa	QNH nine eight four QNH one thousand QNH one zero two seven
Time	1634 0803 1300	three four or one six three four (include hour if possibility of confusion) zero three or zero eight zero three one three zero zero
Visibility	200 m 1500 m 3000 m 10 km	two hundred metres one thousand five hundred metres three thousand metres one zero kilometres
Runway visual range	700 m 1600 m	RVR seven hundred metres RVR one thousand six hundred metres
Frequencies	128.3 MHz 135.75 MHz	one two eight decimal three one three five decimal seven five

Using a shorthand

You may find it helpful to write down a clearance or instruction, especially if you have to read it back. Most transmissions have a fixed order which will help you anticipate what comes next.

Here are some examples of shorthand you could use, either in planning a radio call, or writing a clearance.

Above	<i>ABV</i>
Above (eg 7000 ft)	<i><u>70</u></i>
Advise	<i>ADV</i>
After	<i><</i>
Altitude 3000 – 7000 ft	<i>30-70</i>
ATC clears or cleared	<i>C</i>
Before	<i>></i>
Below	<i>BLW</i>
Below (eg 7000 ft)	<i><u>70</u></i>
Cleared to land	<i>L</i>
Heading	<i>H</i>
Left/right hand	<i>LH/RH</i>
Left turn after take-off	<i>↶</i>
Maintain or magnetic	<i>M</i>
Out of (leave) control area	<i>△→</i>
Remain well to left side	<i>LS</i>
Remain well to right side	<i>RS</i>

Report	<i>R</i>
Reporting point	<i>REP</i>
Climb to (eg 5000 feet)	<i>↑50</i>
Contact	<i>CTC</i>
Cross	<i>X</i>
Cruise	<i>→</i>
Descend to (eg 7000 ft)	<i>↓70</i>
Direct	<i>DCT</i>
Enter control area	<i>→△</i>
Final	<i>F</i>
Flight planned route	<i>FPR</i>
From	<i>FM</i>
Right turn after take-off	<i>↷</i>
Runway (number)	<i>RWY 18</i>
Squawk	<i>SQ</i>
Take-off (direction)	<i>(N)</i>
Tower	<i>TWR</i>
Until	<i>U</i>
Until further advised	<i>UFA</i>
Via	<i>VIA</i>
While in control area	<i>△</i>



When writing a clearance, and you miss or don't fully understand any element, it's important that you clarify the relevant points before reading it back.

Use the phrase "SAY AGAIN" if you want the whole message repeated. If only one element was unclear use "say again (eg, altitude)". If the last part of the message was missed use "say again all after ...".

If you cannot comply with a clearance, say "UNABLE" and give the reason, eg, "rate of climb too low", so an alternative can be given.

If you are not ready to copy a clearance or other information, do not be afraid to say "STANDBY". Conversely, when you are asked to "STANDBY", do not acknowledge, but wait until you are asked to transmit.



Enroute frequency selection

Pre-plan which frequencies to use in uncontrolled airspace.

119.1 MHz

Aerodromes with their details published in *AIP New Zealand* will always have a designated unattended frequency (except where there is a 24-hour ATC service). In some cases, this frequency will be 119.1 MHz, as it will be with most unpublished aerodromes. If unpublished aerodromes are located in an MBZ or CFZ, expect the unattended frequency to be the same as the airspace.

119.1 MHz is for unattended aerodromes that do not have a designated frequency. It is for use within 10 NM of these aerodromes – use outside this can compromise appropriate joining and circuit communications.

FISCOM frequency

This is your best option. You will hear traffic broadcasting in your FISCOM area, and this can help keep you up-to-date with any relevant information that the flight information officer broadcasts. This is also the assured frequency where, in the unlikely event of an emergency, an immediate emergency response is generated.

If appropriate, you may address another aircraft on the FISCOM frequency.

To get clear reception on a FISCOM frequency, you may need to be above 4000 feet, depending on your location and the terrain. In some areas in the Southern Alps there are communication ‘shadows’, where you will need to be a lot higher to make radio contact. Refer to *AIP New Zealand*, Figures GEN 3.4–2 and 3.4–3 for more information.

MBZ

In an MBZ, you must use the published frequency, as will all the other traffic in the MBZ.

CFZ

In a CFZ, all traffic in the area should be on the published CFZ frequency.

Special use airspace

Be aware of any special use airspace and associated frequency requirements on your route. This includes permanent and temporary danger or restricted areas. Temporary special use airspace is often active around events or emergencies. You must check the current NOTAMs and AIP Supplements before flight.

Air traffic service

There are three main types of air traffic service (ATS) units in New Zealand:

- Air traffic control (ATC) – which includes aerodrome control; approach control procedural; approach control surveillance; area control procedural; and area control surveillance
- Aerodrome flight information service (AFIS)
- Area flight information service (FIS).

The type of service is prefixed by the name of the location, for example, Christchurch Control, Gisborne Tower, Paraparaumu Flight Service.

Service	Function
CONTROL	Area control (procedural or surveillance)
APPROACH	Approach control (procedural or surveillance)
TOWER	Aerodrome control, or aerodrome and approach/area control where these services are provided from an aerodrome control tower
GROUND	Surface movement control
FLIGHT SERVICE	Aerodrome flight information service (AFIS)
INFORMATION	Area flight information service (FIS)

DELIVERY	Clearance delivery
RADIO	Air-ground service
APRON	Apron management service
UNICOM	UNICOM (Universal Communication) service

When you are being provided with an air traffic control service, your obligations are to:

- comply with clearances and instructions
- say when you are unable to comply with any instructions or clearances
- keep a good lookout at all times
- tell ATC if you're not flying IFR and are unable to remain in VMC. This is a must.

When you are in controlled airspace, ATC will not automatically separate you from other traffic. It will depend on whether you are an IFR or a VFR flight, and what type of airspace you are in. Regardless of the circumstances, when you are in VMC, the final responsibility for collision avoidance rests with you.

VFR in control areas

On occasions, ATC may not be able to provide you with a controlled VFR service, but will do when the workload or traffic allows it. Sometimes the level of traffic simply does not allow them to accept you. If they can't give you a clearance, have a plan B that will keep you outside the airspace.

Controlled VFR flight gives you access to the airspace at the level and route you are cleared for. Once you have accepted the clearance, you must not deviate from it without an amended clearance to do so. For example, if it looks like you are going to enter cloud at your present heading and altitude, you must request an amendment from ATC to avoid the cloud before you change heading or altitude.

If traffic levels increase you may be asked to leave controlled airspace, or accept a deviation from track or altitude. Be prepared at all times so that you can carry this out as requested. You must be able to navigate visually at all times.

To request a controlled VFR clearance, ATC will need the following information – note this is just a slightly more detailed version of the four Ws call:

- ATC unit call sign
- your call sign
- wait for ATC acknowledgement THEN
- your call sign
- position – accurate distance and bearing from a significant point
- altitude
- squawk code, if you have one
- requested type of clearance – controlled VFR
- requested track
- requested altitude.

Remember to read back the clearance, including new squawk code and QNH if issued.

Controlled aerodromes

Controlled aerodromes are those where an air traffic control service is being provided from a control tower. Operations at controlled aerodromes require you to both request and comply with clearances and instructions.

If you are new to the aerodrome, it can be helpful to tell the Tower.

ATIS

Controlled aerodromes have an automatic terminal information service giving the weather and ground conditions at that aerodrome. This is important information, because it gives you the local weather and QNH, and includes relevant operational information, such as runway-in-use, or wind shear on approach.

Before you make contact with the tower, copy down the ATIS, then give the identifier and QNH on first contact.

Before departure

Make sure you are familiar with the *AIP New Zealand* aerodrome chart and, if applicable, departure charts. The three main international aerodromes (Auckland, Wellington, Christchurch) have comprehensive ground movement charts and instruction pages, as well as detailed departure procedures. They also require VFR pilots to complete a local VFR flight notification via IFIS before start up.

Some secondary aerodromes, particularly those with a high level of IFR traffic, also have detailed departure procedures.

There may or may not be a Ground (surface movement control) frequency. Some aerodromes also have a Delivery frequency, which is normally used for requesting and issuing IFR clearances.

VFR flights do not usually need a clearance to start, but you will need one to taxi. Make sure you have the aerodrome or ground movements chart handy, as it's very easy to get lost on an aerodrome.

Even though you are receiving an ATC clearance, you still need to develop and maintain your situational awareness (mental picture) of where you are and where the other traffic is.

Don't forget to read back the correct elements of your clearance, and then follow it.

Departing

Some aerodromes, particularly those with a high level of IFR traffic, also have detailed VFR departure procedures. These have individual identifiers, but it's still possible to mistake one for another. Be familiar with these departures and have the correct charts readily available.

You may be given departure instructions where there are no published procedures. These may be as simple as requiring you to vacate the control zone via a specific reporting point. The tower should already know what your intentions are, as you will have informed them by phone or IFIS before you went out to the aircraft, or on the radio when about to taxi.

If you can't comply with the departure instructions, for example if you can't maintain the rate of climb needed, then inform the tower and request an alternative. If you simply don't like them, that's too bad. There will be a good reason for giving you that clearance or instruction, and usually that will involve other traffic.

Arrival

Copy down the ATIS in advance and confirm receipt (with identifier and QNH) on first contact with Tower. You will need a clearance before you enter the control zone, so make sure you request this in plenty of time, not when you arrive at the zone boundary.





The clearance may be direct or via a published VFR arrival procedure, and will usually be accompanied by joining instructions and traffic information where applicable. If VFR arrival procedures apply, have your charts to hand and make sure you are familiar with the procedures.

Unless you request one specifically, your arrival generally won't be via an overhead join, although you may be cleared overhead the field onto the downwind leg. The clearance will usually be to join the circuit via either downwind or on base leg. Remember you still need to keep a good lookout, and it's especially important to make sure you identify any aircraft ahead of you in the sequence. If, for example, you are told to join number three, clearly identify the two aircraft ahead of you and sequence correctly behind them.

Once you have acknowledged traffic in sight you are responsible for maintaining your separation. If you lose sight of the traffic, you must advise ATC accordingly or request a traffic update.

Exiting the runway

At the end of your landing roll, Tower will give you taxi clearance, and if applicable, instructions to contact Ground.

Where taxi instructions are likely to be detailed, ensure that you have your applicable aerodrome or ground movements chart to hand.

See *AIP New Zealand AD 1.5 Aerodrome Operations* for more detailed information on operations at controlled aerodromes.

AFIS aerodromes

An aerodrome flight information service may be provided at aerodromes where the number of scheduled air transport operations is not enough to justify an ATC service, but the mix and number of movements is such that safety would be improved by having a flight information service available. At the time of publication of this booklet, an AFIS was provided at Paraparaumu and Milford Sound.

An AFIS provides information useful to pilots for the safe and efficient conduct of their flights. It differs from an air traffic control service in that pilots being provided with an AFIS are responsible for assessing a situation based on information passed to them by the flight information officer and then advising their intentions. Other pilots hearing these intentions and information make their own decisions and, in turn, state their intentions.

Not a control service

The flight information officers cannot issue clearances, although they can relay them from ATC. They will, however, inform you of other traffic in the area.

The AFIS is there to help ensure you have all the information you need. It will provide weather, QNH, runway-in-use, significant traffic, and pertinent operational information, such as bird hazards. It will not limit your movements or direct you, and it certainly does not provide separation.

Collision avoidance

Just as at uncontrolled aerodromes, making sure you don't hit anything is entirely your responsibility at an AFIS aerodrome.

You retain the ultimate responsibility for where you put your aircraft to maintain separation and sequencing with other traffic.

A particular note – Paraparaumu is located within the Paraparaumu Mandatory Broadcast Zone. Pilots intending to transit the zone without landing must comply with MBZ procedures and keep clear of the Paraparaumu circuit area. There is scheduled IFR traffic in and out of Paraparaumu most days.

Listen carefully

You still make the decisions about where to place your aircraft at an AFIS aerodrome, so you need to listen carefully to the radio traffic and plan your movements accordingly.

Before you speak, listen for a minute or two to hear what other traffic is doing, to form a mental picture of the traffic.

When the frequency is busy, and to help reduce radio congestion, you can acknowledge the traffic and conditions you have already heard.

Paraparaumu flight service
Photo: Andrena Davis



Remember, the information you provide the AFIS is used to advise other traffic, so it should be timely and clear.

Taxi and departure

The AFIS aims to give you the most up-to-date traffic and conditions, and if you then have an extended run-up or preparation time before you are ready to depart, the information could well be out-of-date, so may require another radio call to update you.

Arrival and joining

Plan well in advance of your arrival.

Do not arrive on frequency without having taken the time to listen to the traffic for a few moments. It's your responsibility to be aware of the other aircraft in the circuit and sequence with them – not for them to give you their position reports.

Generally, the standard overhead join procedure is not used at AFIS aerodromes – *AIP New Zealand AD 1.5 Aerodrome Operations* gives the option of joining overhead or directly on downwind, base, or long final, with the following provisos:

- joining intentions are advised to AFIS if the aircraft is RTF equipped
- the runway-in-use and aerodrome traffic are properly ascertained
- when making a straight-in approach, or joining downwind or base leg, the aircraft is sequenced in such a way as to give priority to aircraft already established in the circuit or established in the standard overhead circuit joining pattern
- when entering or flying within the circuit, all turns are made in the direction appropriate to the runway-in-use.

Area Flight Information Service (FIS)

The area flight information service is provided to give advice and information useful for the safe and efficient conduct of flights. It includes:

- SIGMET (significant meteorological information)
- weather conditions reported or forecast, at departure, destination, and alternative aerodromes
- changes in the condition of aerodromes and associated facilities
- facility to file or amend flight plan details and SARTIME
- traffic information
- other activities likely to affect safety.

Although you can ask for this information from any ATC service, this will not be their primary task and they might be busy doing other things. You may be asked to stand by, or directed to Information to make your request.

The VNCs show the FISCOP frequencies in specific areas of New Zealand. This information is based on VHF coverage at 4000 feet.

There are benefits to using this service, and you don't have to file a VFR flight plan to use it. You can receive up-to-date information, and it provides a form of assurance that somebody has an idea of where you are, as every call and position report is logged.

But you must be aware of the etiquette. One Flight Information Officer (FIO) will be working 14 frequencies at one time, and you may not be able to hear pilots transmitting on the other frequencies, but you will hear the FIO. It's important to establish contact and wait to be acknowledged before you transmit the whole message, and be prepared to wait for the FIO to get back to you.

They will not charge you if you call up wanting assistance – so use the service – they are there to help.

UNICOM

UNICOM is not an air traffic service – it's a non-certificated air-ground communications facility providing an information service at aerodromes with no aerodrome control or aerodrome flight information service.

There is currently only one UNICOM in New Zealand – at Ardmore aerodrome, where the service is provided by the airport company.

Information provided may include:

- current aerodrome information and conditions
- basic weather information such as:
 - wind direction and strength
 - visibility
 - cloud cover
 - temperature
 - QNH
- Aerodrome and Weather Information Broadcasts (AWIB).

The UNICOM operator may also provide other services. The operator is not permitted to provide traffic information derived from their own observations, but may relay specific aircraft position reports, or make a general broadcast to all aircraft (such as information on inbound IFR traffic).

VFR flight plans and SARTIME

It currently costs a few dollars to file a VFR flight plan, and potentially millions of dollars to try and find you if you go missing – and they will try to find you! Comforting to know, but a lot more comforting when they are looking in the right place.

Even if you don't want to file a full flight plan you can give ATS a SARTIME – this is a time at which ATS will initiate a search for you if you haven't made contact with them. But make sure you cancel that SARTIME when you arrive safely, because as soon as it's reached, alarms go off and ATS will start trying to find you. If they haven't spoken with you after about five minutes, they start search action.

Remember that you can amend or update your flight plan and SARTIME during flight to allow for stopovers.

On multi-leg flights you may nominate a SARTIME relative to the first destination, but you must remember to amend the SARTIME after each landing or take-off. Recommended practice is to set your SARTIME to a maximum of 30 minutes after your next landing, not the time you expect to make your last landing of the day.



Weather

Weather information is available from many sources during flight:

- Christchurch Information – you can find the frequency on the VNCs or the FISCO charts in *AIP New Zealand* GEN 3.4.
- ATIS – within line-of-sight of the aerodrome, you should receive the ATIS. The frequency is on the Vol 4 aerodrome chart.
- AWIB – aerodrome and weather information broadcast. An automated broadcast at some unattended aerodromes. The frequency is on the Vol 4 aerodrome chart.
- ATS – control tower or area controllers.
- VOLMET – broadcasts selected meteorological information on discrete HF frequencies.
- Basic Weather Report (BWR) – usually reported by another pilot, and may be disseminated as flight information by ATS.

METAR Conditions

Place	Type	Time - local	Wind - T	Visibility	Weather	Cloud (agl)	Temp/ DP	QNH
TG	Auto	1000	290/12 260V320	20km NDV	//	BKN 2100	17/13	1019
RO	Auto	1000	280/09	15km NDV	-SHRA	FEW 2000 OVC 2600	14/13	1019
AP	Auto	1000	320/10	6000m NDV	-DZ	FEW 800 BKN 1000	15/15	1017
NR	Auto	1000	330/10	20km NDV	//	BKN 8000	21/13	1012
GS	Auto	1000	310/15	20km NDV	//	No Cloud Detected	18/13	1015



Operating at unattended aerodromes

Flying at uncontrolled aerodromes has its challenges. Most people think they are not as busy as controlled aerodromes. They can be even busier, so you need to be prepared. There can also be quite a mix of aircraft operating at the same time, like gliders, helicopters, microlights, parachutes and IFR aircraft.

At an uncontrolled aerodrome you are responsible for your own sequencing and collision avoidance. Lookout, 'listenout' and good RTF are crucial for building situational awareness and ensuring safe separation.

The key to flying at uncontrolled aerodromes is to show as much courtesy to others as you would like them to show you.

Collision avoidance

Making sure you don't hit anything is entirely up to you.

The best way to do this is to build, and then maintain, good situational awareness.

Use your eyes and ears. Ask your passengers to speak up if they see other aircraft too.

Don't just rely on hearing the traffic in the circuit, as there are still plenty of NORDO aircraft out there, or others that aren't on the frequency for some reason.

Give your position relative to published reporting points, prominent geographical features, or the aerodrome. Avoid using 'local knowledge' names, which could be meaningless to a non-local pilot.

Use your lights to enhance the ability of others to see you. If you become concerned that another pilot has not seen you, a small banking manoeuvre may expose a more visible view of your aircraft.

When it comes to sequencing and separation, a good rule of thumb is not to do anything that would cause or require another pilot to change their flight path. Overall, be predictable.

Listen carefully

Before you speak, listen for a minute or two to hear what other traffic is doing, to form a mental picture of the traffic.

Taxi and departure

While you are starting up and completing the checks, keep a listening watch on the traffic. Mentally plot their positions and try to anticipate their movements, and listen for their intentions.

When you have a good mental picture of what is going on at the aerodrome, on the ground and in the air, decide how you are going to fit into the sequence, and make your radio call.

Mixing with IFR traffic

Aircraft doing IFR approaches at uncontrolled aerodromes can present a hazard to VFR traffic and vice versa. Their radio calls may relate only to the procedure they are flying, and not to anything a VFR pilot might recognise.

Generally, this is an issue only when the weather is fine and the IFR aircraft is training, or when the cloud base is approximately 2000 feet above the aerodrome.

If you are one of those IFR pilots, then you should be giving additional radio calls that allow a VFR pilot to be able to locate you. Using range bearing from the airfield or geographic references is easier for the VFR pilot to interpret than points on an IFR approach or final approach fix/holds.

If you are a VFR pilot, you can get some indication of where the approach may be from by looking at the VNC. There is a purple teardrop symbol on the charts, giving the approximate direction of the instrument approaches (both ground navaid-based and GNSS-based) in relation to the aerodrome.

The symbol is located away from the chart 'clutter' around the aerodrome, so the distance from the aerodrome is not truly representative but it does give you a quadrant in the sky in which to be concentrating your visual search.

Planning for arrival

Plan well in advance of your arrival. The overhead join procedure should be sorted out in your mind (if it's the appropriate way to join at this particular aerodrome).

Do not arrive on frequency without having taken the time to listen to the traffic for a few moments. It's your responsibility to look out and be aware of the other aircraft in the circuit, and sequence with them – not for them to give you their position reports.

Joining and circuit

The standard overhead join procedure is recommended, unless *AIP New Zealand* specifies another way to join at the aerodrome. This could be due to a contrary circuit – for helicopters or gliders, for example.

When using the procedure, orbit overhead until you have identified all of the traffic and can safely sequence into the pattern.

Make only the appropriate calls. There is usually no need for 'rolling', 'crosswind', 'early downwind', 'final' and 'vacating' calls – unless other aircraft are affecting your flight and you need to alert them to your position.

Using standard calls will help to improve everyone's situational awareness, while cutting down on radio 'clutter'.

Common IFR radio calls

For further information on radio calls and instrument approach procedures, refer to *AIP New Zealand* ENR 1.1 and 1.5 respectively, and Advisory Circular AC91–9.

Overhead	The aircraft is overhead the radio navigation aid (beacon) – as shown on the aerodrome chart.
Commencing base turn	The aircraft is at the end of the outbound leg of the teardrop and is now turning back towards the aerodrome.
10 DME	The aircraft is approximately 10 NM away from the beacon.
Circling	The aircraft has established visual reference and is positioning for another runway – usually the one that is into wind. This is still an IFR procedure.
Established in the holding pattern	The aircraft is following a racetrack pattern generally above the beacon but can be up to 15 NM from the aerodrome.
Beacon outbound	The aircraft passed over the beacon (which may not be on the aerodrome) and is following the outbound leg of a teardrop approach, (normally) away from the aerodrome.
Inbound	The aircraft is established on the final track of the instrument approach and is (usually) descending towards the runway.
Established on the arc	Some instrument approaches follow a flight path that keeps them up to 15 NM from the beacon until they intercept the final approach path. This position puts the aircraft at a 10–15 NM radius tracking towards the final approach path.
Missed approach	The aircraft has abandoned the approach and is climbing and following the missed approach procedure (which usually turns it back towards the beacon).
Visual	The pilot has the runway in sight and may now manoeuvre to intercept final to land. This may be a continuation of the final approach path, or may require the aircraft to circle for another runway.

GNSS approach

Aircraft on a GNSS approach should be using the phraseology listed in the table, but might be reporting ranges to waypoints. These will probably make no sense to the VFR pilot, but IFR pilots should also be making position reports in 'plain language'. If they're not, ask them to.

It's also very useful to know where the approach waypoints are, in general, on the approaches at your home aerodrome, or ones you visit frequently. You can find this information on the approach charts in *AIP New Zealand* Vols 2 and 3, or you can ask your local instructors.





Communications failure

Troubleshooting

Sometimes it can seem like you are experiencing a communications failure, but some simple checks may resolve the problem.

Check these basic items:

- PTT button – fully released after transmitting
 - squelch – set correctly
 - radio/intercom selector – in the correct position – radio selected, not intercom
 - radio – correct radio selected if there are two radios
 - radio – volume set to audible level
 - frequency – correct frequency set and active.
- If these don't solve the problem, check the following:
- headset jacks in the correct socket and fully inserted
 - headset volume
 - headset batteries on noise attenuating headsets, if fitted
 - master switch is ON (including the avionics switch if applicable)
 - alternator ammeter charge/discharge indication
 - fuses or circuit breakers
 - try another headset if there is one available
 - turn the aircraft 90 degrees to try and get a better signal
 - is the terrain in the way? VHF radio waves work on 'line of sight'.

If you still can't make contact, try the 'speechless technique' detailed in *AIP New Zealand* ENR 1.15. This applies when the transmit and receive functions are serviceable, but the microphone input is unserviceable. When an unmodulated transmission is heard, the ATS operator will request the pilot to activate the transmitter (that is, press the PTT button) three times; and if the pilot complies, the operator will ask questions requiring YES or NO answers to determine if the aircraft can continue visually or can make an instrument approach. This and any other information required will be obtained by requiring the pilot to transmit:

- once for YES or ROGER
- twice for NO
- three times for SAY AGAIN
- four times for AT NOMINATED POSITION.

Aircraft communications failure

If the troubleshooting checks are unsuccessful, assume that you have a communications failure. The procedures are listed in *AIP New Zealand* ENR 1.15:

- Maintain terrain clearance throughout all procedures.
- Switch transponder to code 7600.
- Try alternate then secondary published ATS frequencies for the sector or unit you should be in communication with.
- Check aircraft communications equipment.
- Listen to ATIS if possible.
- Transmit position reports and intentions, assuming the aircraft transmitter is operating, and prefixing all transmissions with "TRANSMITTING BLIND".
- Turn on landing lights, beacons, and strobe lighting.

- If a mobile phone is available in the aircraft, attempt to establish telephone communications with Christchurch Control or Christchurch Information on 0900 62 675 or (03) 358 1509, or the ATC unit you should be communicating with (refer to GEN 3.3 for numbers).
- If the destination is within an MBZ, proceed to an alternate aerodrome unless the risk in proceeding safely to an alternate aerodrome is clearly greater than continuing, without communications, to the planned destination. (Refer to s13A of the Civil Aviation Act – beforehand, that is; not when you have the problem!)

The pilot of an aircraft operating under VFR should:

- not enter controlled airspace, including control zones, unless complying with:
 - a clearance already received and acknowledged; or
 - published COM failure procedures for that aerodrome.
- divert to an unattended aerodrome and report arrival to ATS as soon as possible.

If unable to divert to an unattended aerodrome, the pilot of an aircraft should:

- continue to operate transponder on code 7600; and
- enter the control zone via a published arrival procedure; or
- approach the aerodrome side-on to the main runway or runway-in-use, and carry out a standard overhead circuit joining procedure; and
- contact ATS as soon as possible after landing.
- If an emergency condition exists, switch transponder to emergency code 7700.

ATS communications failure

If there is a significant disruption to air traffic or telecommunication services, ATS will, as far as practicable, advise pilots when the level of available communication is being reduced.

This advice will facilitate transition to either:

- alternative communications; or
- a TIBA (traffic information broadcasts by aircraft) environment.

In the worst case, there will be no ATS available. See *AIP New Zealand* ENR 1.15 for detailed procedures.

If you have suffered a communications failure and are landing at a controlled aerodrome, the control tower will be able to give you instructions by light signals.

Colour and type of signal	To aircraft in flight	To aircraft on the aerodrome
Steady green	Cleared to land	Cleared for take-off
Steady red	Give way to other aircraft and continue in the circuit	Stop
Series of green flashes	Return for landing	Cleared to taxi
Series of red flashes	Aerodrome unsafe – do not land	Taxi clear of landing area in use
Series of white flashes	Land at this aerodrome and proceed to apron	Return to starting point on aerodrome
Series of alternate red and green flashes	Danger – be on the alert	Danger – be on the alert
Red pyrotechnic	Notwithstanding any previous instructions do not land for the time being	

Emergency procedures (AIPNZ, ENR 1.15)

In an emergency, do not be afraid to speak up, and do so early. Making an early call frees you up to aviate and navigate; increases the possibility of being received due to height; and gives your ELT time to transmit a signal.

MAYDAY message

Distress is defined as a condition of being threatened by serious and/or imminent danger and requiring immediate assistance.

The pilot of an aircraft in distress must transmit on the air-ground frequency in use at the time of the distress, the distress signal MAYDAY (spoken three times), followed by the distress message.

If on an unattended frequency, and it's considered that better assistance can be provided by transferring to another frequency, the pilot should do so, after broadcasting this intention on the original frequency.

The distress message should consist of as many of the following elements spoken distinctly and if possible, in the following order:

- name of station addressed (time and circumstances permitting)
- identification of the aircraft
- nature of the distress condition
- intention of the pilot
- present position, flight level or altitude, and heading.

The transmission of an accurate aircraft position may be critical to any subsequent search and rescue action.

In addition, the pilot should switch the transponder to the emergency code 7700, or emergency mode in the case of ADS-B equipped aircraft; and

- activate the ELT, and tracking system alarm, if fitted
- if the emergency situation is recovered, turn the ELT off and advise ATC or RCCNZ as soon as possible
- if the ELT is turned off and ATC or RCCNZ are not advised as soon as possible, it will be assumed that the aircraft has crashed and search planning will have started.

PAN PAN message

Urgency is defined as a condition concerning the safety of an aircraft, or of some person on board or within sight, but which does not require immediate assistance.

The pilot of an aircraft reporting an urgency condition must transmit on the air-ground frequency in use at the time, the urgency signal PAN PAN (spoken three times), followed by the urgency message.

The urgency message should consist of as many of the following elements spoken distinctly and if possible, in the following order:

- name of station addressed
- identification of the aircraft
- nature of the urgency condition
- intention of the pilot
- present position, flight level or altitude, and heading
- any other useful information.



Good Aviation Practice



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See the CAA website for Civil Aviation Rules, advisory circulars, airworthiness directives, forms, and more safety publications.

To request publications such as GAPs and posters email: publications@caa.govt.nz.

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Plane talking
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