GAP
Good Aviation Practice

Plane talking

CAA
CIVIL AVIATION AUTHORITY
OF NEW ZEALAND
Te Mana Rererangi Tūmatanui o Aotearoa

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

Contents

Cover photo: Courtesy of Carlton Campbell

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.

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. Read this booklet in conjunction with Advisory Circular AC91-9 & AC172-1 *Radiotelephony Manual* and the *New Zealand airspace* GAP booklet.

There are four reasons why we need to make a radio call.

1. To avoid conflict, including the possibility or hazard of conflict.
2. To inform other pilots' situational awareness.
3. For airspace purposes.
4. In an emergency.

If none of these reasons apply to you, consider whether your proposed call is necessary.

Photo courtesy of Massey University School of Aviation

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

Clear

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. Pilots will be expecting you to state your position, altitude, and intentions (PAI), so stick to this information, in this order.

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're meaningless to anyone else. A precise description, such as "three miles southwest of Rakaia" is much more useful.

Relative bearing

Relative bearing using the clock code is effective and easy to understand.

The correct method of using the clock code is to state position of yourself, from the receiver's point of view, where you want them to look. A rough distance, along with level information such as low, same level, or high, can make this even better.

An example of this might be: "ABC, DEF, at your 2 o'clock, one mile, same level."

This tells the receiver to look right of their nose, approximately 60 degrees, at the horizon, and expect to see DEF about one mile away.

It's important that position is stated relative to the nose of the receiving aircraft.

A call saying "You're at my 2 o'clock" means very little to a receiving pilot, as usually, they won't know the transmitting pilot's direction of travel. So, "You're at my 2 o'clock" could be anywhere relative to the receiver.

Example of a clock code call.

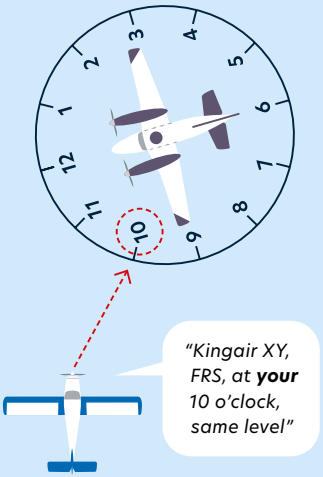

Diagram designed by Jonathan Mauchline

Know your equipment

VHF radio

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'll 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're familiar with these before you fly.

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.

Make sure you're familiar with your equipment, before you fly.

Headset

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're pursed. With a headset, you'll 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.

Photo courtesy of Rudi Bosman

Some headsets are also equipped with a volume control for the earphones. Consider this when adjusting the radio volume.

If a hand-held microphone is provided as a backup, make sure the transmit button isn't 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.

Intercom

Most aircraft are equipped with intercom systems, and these come in a variety of configurations. Make sure you know how the system in your aircraft works.

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. Check this before you use the radio.

Audio selector panel

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 familiarise yourself when you encounter one you haven't used before.

Transmitting technique

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

- Think carefully about your radio call before making it. Making sure you know what you're going to say first will reduce the opportunity for 'umms' and 'ahhs'. Take the opportunity to ensure what you're about to say is, in particular, concise and consistent.
- Before transmitting, check the receiver volume is set at the optimum level. Listen out on the frequency to be used, to ensure your transmission won't interfere with a transmission from another station.
- Be familiar with microphone operating techniques, and don't 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 you know 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.
- Add a slight pause before and after numbers to make them easier to understand.
- Press the transmit switch fully before speaking, and don't 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.

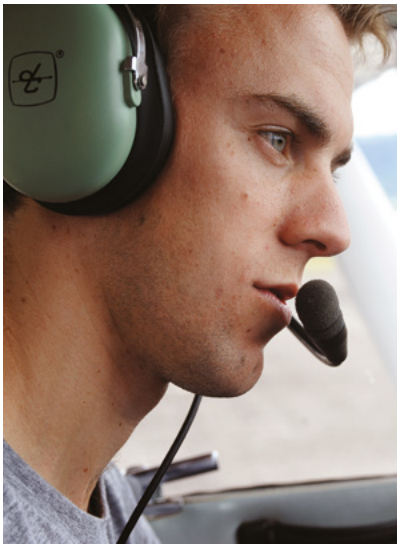

Photo: Andrena Davis

Listen up!

Before transmitting, always listen out to make sure that you're not butting in on someone else's conversation. A good habit to develop is to use the second radio or dual watch, 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 don't 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 take-off and landing.

Four 'W's

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're calling - the name of the station you're 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. Note, specifying feet or NM distance

Photo: CAA

in a radio call shouldn't be necessary as standard, unless there's a chance of ambiguity.

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

An example of a standard radio call could look like this:

"Whanganui Traffic, Foxtrot Romeo Sierra, 5 west airfield, 2500, north."

Because of the consistent format, the call is able to be kept concise. There's no ambiguity, in that 5 means distance in miles, 2500 is altitude in feet, and even that north means northbound track.

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

- 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.

Reading it back

There are a range of ATC clearances, information, and instructions that must be acknowledged by a full read-back, 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 and altitude 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's no requirement for the pilot to read back the clearance in full.
- Instructions not requiring a full read-back, such as a request to report, are acknowledged by "WILCO", which clearly indicates pilots have understood the instruction and will comply.

Messages that don't require a read-back 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"
- "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
B	BRAVO	BRAH voh
C	CHARLIE	CHAR lee or SHAR lee
D	DELTA	DELL tah
E	ECHO	ECK oh
F	FOXTROT	FOKS trot
G	GOLF	GOLF
H	HOTEL	ho TELL
I	INDIA	IN dee ah
J	JULIETT	JEW lee ETT
K	KILO	KEY loh
L	LIMA	LEE mah
M	MIKE	MIKE
N	NOVEMBER	no VEM ber
O	OSCAR	OSS cah
P	PAPA	pah PAH
Q	QUEBEC	keh BECK
R	ROMEO	ROW me oh
S	SIERRA	see AIR rah
T	TANGO	TANG go
U	UNIFORM	YOU nee form or OO nee form
V	VICTOR	VIK tah
W	WHISKEY	WISS key
X	X-RAY	ECKS ray
Y	YANKEE	YANG key
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).

Photo: CAA

Numbers

0	ZE-RO
1	WUN
2	TOO
3	TREE
4	FOW-er
5	FIFE

6	SIX
7	SEV-en
8	AIT
9	NIN-er
hundred	HUN-dred
thousand	TOU-SAND
decimal	DAY-SEE-MAL

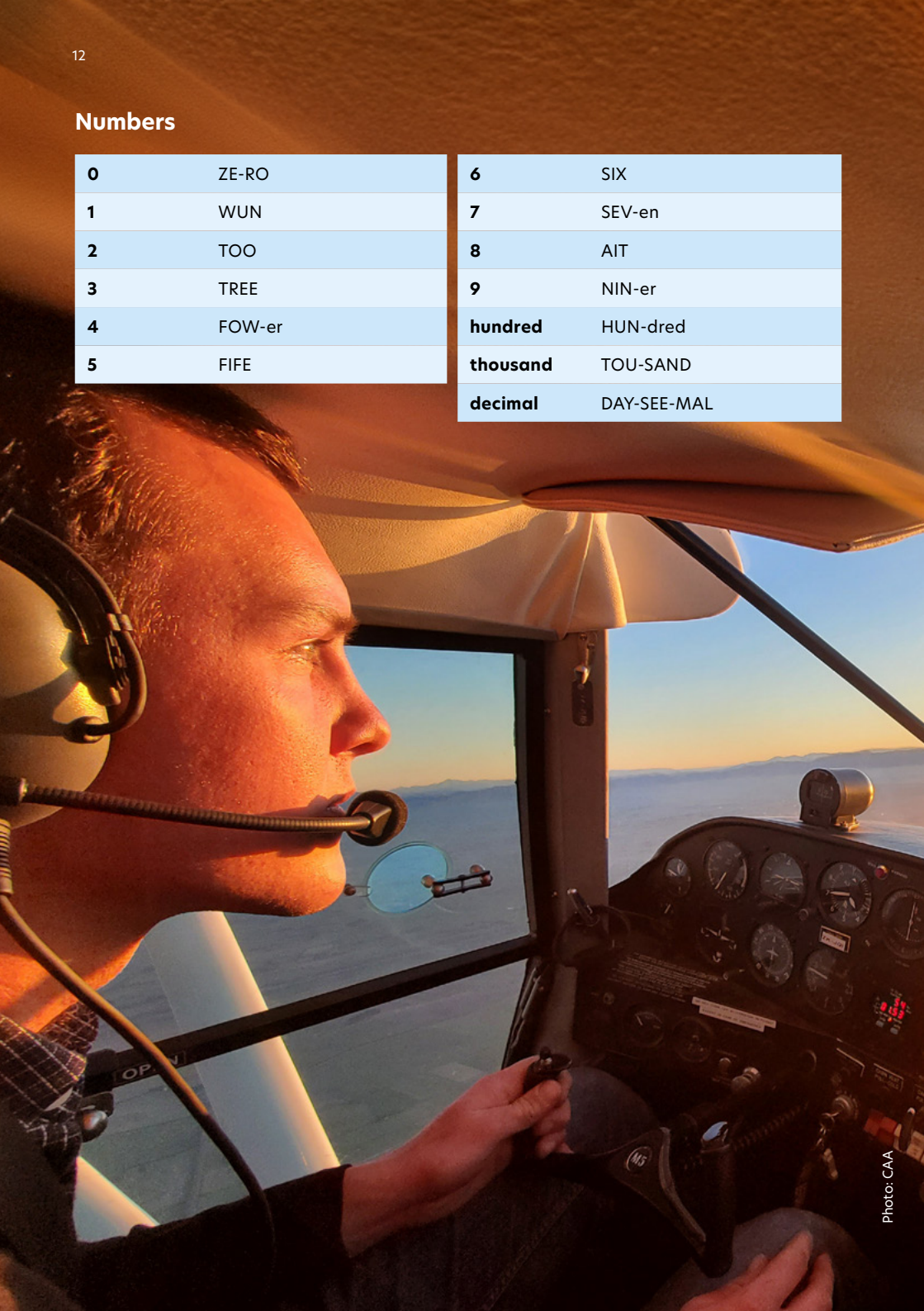

Photo: CAA

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 READ-BACK 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

Photo: iStock.com/GeorgeRudy

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)	300ft 1500ft 10,500ft 13,000ft	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	200m 1500m 3000m 10km	two hundred metres one thousand five hundred metres three thousand metres one zero kilometres
Runway visual range	700m 1600m	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	ABV
Above (eg 7000 ft)	$\underline{70}$
Advise	ADV
After	<
Altitude 3000 - 7000 ft	30-70
ATC clears or cleared	C
Before	>
Below	BLW
Below (eg 7000 ft)	$\overline{70}$
Cleared to land	L
Heading	H
Left/right hand	LH/RH
Left turn after take-off	
Maintain or magnetic	M
Out of (leave) control area	
Remain well to left side	LS
Remain well to right side	RS

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

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", then the specific element you want to be repeated, such as altitude. If the last part of the message was missed use "say again all after ...".

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

If you aren't ready to copy a clearance or other information, don't be afraid to say "STANDBY". Conversely, when you're asked to "STANDBY", don't acknowledge, but wait until you're asked to transmit.

Photo: CAA

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 10NM 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.

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.

Pre-plan which frequencies to use in uncontrolled airspace.

MBZ

In an MBZ, you must use the published frequency, as will all the other traffic in the MBZ. They usually have specific reporting intervals, so refer to the MBZ on the VNC.

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.

Photo courtesy of Rudi Bosman

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

* Apron management service is not an Air Traffic service, but may be provided by ATC at some locations.

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

- comply with clearances and instructions
- say when you're 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're in controlled airspace, ATC won't automatically separate you from other traffic. It will depend on whether you're an IFR or a VFR flight, and what type of airspace you are in. Regardless of the circumstances, when you're 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've accepted the clearance, you mustn't deviate from it without an amended clearance to do so. For example, if it looks like you're 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 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 again
- 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're 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're 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 startup.

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 don't 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.

Moving map software is a useful tool for navigating.

Photo courtesy of Rudi Bosman

Even though you're 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 the departure instructions, 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'll need a clearance before you enter the control zone, so make sure you request this in plenty of time – 5 minutes before the boundary should be sufficient.

Milford Sound is a popular flying destination that provides an aerodrome flight information service.

Photo: iStock.com/simonbradfield

The clearance may be direct into a circuit leg 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're familiar with the procedures. ATC can issue clearances to join non-standard legs – this is permitted at a controlled airfield, but don't do the same at an uncontrolled aerodrome.

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're told to join number three, clearly identify the two aircraft ahead of you and sequence correctly behind them.

When ATC informs you of traffic to look for, the two responses you can give are either "traffic in sight", or "looking for traffic". You are then 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 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 can't 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 won't limit your movements or direct you, and it certainly doesn't provide separation.

Collision avoidance

Just as at uncontrolled aerodromes, making sure you don't create conflict 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.

If you're transiting through any MBZ, such as at Paraparaumu, you must remain clear of the circuit area (further than 2NM from the aerodrome, or at least 1500 above aerodrome level.

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.

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

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 maintain a good listening watch throughout.

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. Also, don't rely completely on AFIS reports, as they may contain out-of-date information.

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 FISCOM 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, 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.

Photo courtesy of Whanganui Airport

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 won't 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 are currently two UNICOM facilities in New Zealand. One is at Ardmore Airport, where the service is provided by the airport company. The other is at Whanganui Airport.

Information provided may include:

- current aerodrome information and conditions
- basic weather information such as:
  - wind direction and strength
  - visibility
  - cloud cover
  - temperature
  - QNH.

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 previously heard specific aircraft position reports, or make a general broadcast to all aircraft (such as information on inbound IFR traffic).

VFR flight plans, SARTIME, and flight following

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 will attempt to contact you and will start search action after 15 minutes.

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.

Informal flight following can be a simple option for shorter flights. ADS-B-based flight trackers can make it easy for family, friends, or aero clubs to keep an eye on your progress, and check in after certain time intervals. Be aware though, third-party flight trackers have major visibility limitations, and aren't suitable in many scenarios. They shouldn't be considered an alternative for an Airway's SARWATCH, or filing of a VFR Flight Plan. Airway's flight following and SARWATCH services use comprehensive radar services, where staff are trained professionals using formal processes. They have a direct line to RCCNZ (Rescue Coordination Centre New Zealand) if something does go wrong.

Photo: iStock.com/ohannes Wiegand

Weather

Weather information is available from many sources during flight:

- Christchurch Information – you can find the frequency on the VNCs or the FISCOM 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.
- Basic Weather Report (BWR) – usually reported by another pilot, and may be disseminated as flight information by ATS.
- Some electronic flight bag (EFB) applications, such as Go Preflight, have the ability to provide inflight weather forecasts and updates.

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, 'listen-out', 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. But if you cannot see other traffic, try to maintain level wings for as long as possible for the best visibility.

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're 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's going on at the aerodrome, on the ground and in the air, decide how you're going to fit into the sequence, and make your radio call.

North Shore Airport is an example of an unattended aerodrome.

Photo courtesy of North Shore Aero Club

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).

Don't 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.

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

Make only the appropriate calls. There's 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'.

Over-reliance on ADS-B

While Automatic Dependent Surveillance-Broadcast technology can greatly increase situational awareness, in no way does it substitute a thorough lookout and good radio calls.

Installing ADS-B in your aircraft does not automatically guarantee that:

- every other aircraft flying in the same airspace will have ADS-B installed
- every other ADS-B-equipped aircraft flying in the same airspace will have it switched on
- there are no line-of-sight obstructions
- such as your own aircraft's body – preventing your ADS-B OUT signal from transmitting
- the display device you're using for your ADS-B IN receiver is up-to-date and working correctly
- the display device you're using for your ADS-B IN receiver is displaying correct altitude readings.

So, even with ADS-B IN and OUT, practise robust lookout, and clear, concise, consistent, and correct radio calls to get a true picture of who's around you and what they intend to do next.

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're 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're 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.

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 10NM 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 15NM 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 15NM from the beacon until they intercept the final approach path. This position puts the aircraft at a 10–15NM 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.

Photo courtesy of Barrier Air

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. 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.


Photo: CAA

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 (03) 353 7777 or (03) 358 5029, 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.

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.

See *AIP New Zealand*, Volume 4 "Pink pages" for more information.

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 after receiving a steady green	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	

Photo: iStock.com/zodebala

Emergency procedures (*AIPNZ*, ENR 1.15)

In an emergency, don't 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 Emergency Locator Transmitter (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 Rescue Coordination Centre New Zealand (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 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.

GAP
Good Aviation Practice

CAA
CIVIL AVIATION AUTHORITY
OF NEW ZEALAND
Te Mana Rererangi Tūmatanui o Aotearoa

PO Box 3555
Wellington 6140

Tel: +64 4 560 9400
Fax: +64 4 569 2024

Email: info@caa.govt.nz

Te Kāwanatanga o Aotearoa
New Zealand Government

See the CAA website for civil aviation rules, advisory circulars, airworthiness directives, forms, and more safety publications.

To order publications such as GAPs and posters, go to aviation.govt.nz/education.

aviation.govt.nz

Plane talking
was revised in November 2024.