

INTRODUCTION TO RADIO FOR THE VFR PILOT



INTRODUCTION

My introduction to using an aeronautical radio was a disaster! I had spent a short time trying to master a Cessna without much success, and as I taxied out on about the 4th lesson, the Instructor informed me that from now on I was doing the radio work.

My God, all my attention was being concentrated on trying to prevent this uncooperative aeroplane from running into something, and the additional strain of talking to God and broadcasting my nervousness to the world was just too much.

My first transmission was garbage. The instructor intervened part way through and transmitted the call himself. "Haven't you been listening to what the calls are?" he asked. What a bloody silly question. All the transmissions I had heard so far had been made by people who hadn't learned to speak English and, apart from the odd word, I hadn't been able to understand a thing.

The lesson was a disaster and the thought of having to do battle with the radio prevented me from flying again for about three months. Hopefully, this may ease the pain for those starting out.

It is a good idea for all new pilots to visit a control tower to see what happens from their side. In my experience, Controllers are pleased to explain what goes on, and you will probably discover, as I did, that their job is a very complex one with a large percentage of their work load dealing with traffic that is not in the circuit. They are professional and tolerant and ready to help with any problems a pilot may have, and some confidence and a reasonable standard of radio procedure on your part will make their job a little easier.

The phraseology used seems strange at first but it has been very carefully designed to keep Radio Traffic to a bare minimum, while ensuring that everything is clearly understood. It is frustrating waiting to make a call while some prat waffles on with extraneous dribble, so some effort is helpful to all.

In the body of the pamphlet I have used the Napier Control Zone and my own aircraft's registration as a call sign. For practice substitute examples that are suited to your own situation. Also, I refer to the Controller as a man. My humble apologies to the many lady Controllers. I blame my chauvinistic upbringing and the fact that his/her throughout the text doesn't help the flow of things. No offence meant.

I would like to take this opportunity to thank Kerry Rusbridge and the Napier ATC unit for all their assistance. I Owe You One.

LICENCE REQUIREMENTS

To legally operate an aeronautical radio, unless you are under the supervision of an instructor, you must be the holder of either a FLIGHT RADIO TELEPHONE OPERATORS rating (FRTO) or a RESTRICTED RADIO TELEPHONE OPERATORS rating (R/RTOC).

Each aircraft, if fitted with a radio must have Radio Station Licence, and if you fly one, as a pilot in command, it is your responsibility to ensure that it is carried.

EXTRACTS FROM THE RADIO REGULATIONS 1970

- 34** Every licensee of a radio station shall faithfully observe and cause to be observed all the conditions and provisions of the license and of these regulations as far as they are applicable.
- 49** No person shall, by means of a radio station, impersonate any other person, or pass off that radio station to be any other radio station, or use the call sign of another radio station improperly, or without lawful justification.
- 50** No person shall transmit or cause or permit to be transmitted any radio communication of a false, fictitious, or misleading character and in particular but without prejudice to the foregoing, transmit or cause permit to be transmitted any false or deceptive distress signal or distress call.
- 51** No person shall transmit or cause or permit transmission of any radio communication of a seditious, profane, obscene, or libellous nature, of an offensive nature or meaning.
- 54** Every person who, by virtue of any radio station, has access to any radio communication not intended for his information, shall preserve the secrecy of that radio communication and any information whatsoever derived from it and shall not reproduce or cause or permit to be reproduced in a newspaper or elsewhere, or communicate to any third party, any such radio communication or any information derived therefrom, nor shall the fact of the existence of the radio communications be disclosed.
- 90** Stations of the aeronautical mobile service shall accept, with absolute priority, distress calls and distress messages regardless of their origin and the operator shall immediately convey any such calls and message to the captain or other person responsible for aircraft and take such other action in regard thereto as may be required.
- 91** No provision in these regulations shall be so constructed as to hinder an aircraft station in distress using any means at its disposal to attract attention,

indicate its position and obtain assistance.

- 92** Except as provided in regulation 91 of these regulations, aircraft stations are authorised to communicate only with other stations of the aeronautical mobile service, or with stations of the maritime mobile service; provided that aircraft stations when communicating with stations of the maritime mobile service shall conform to those provisions of the International Radio Regulations which relate to the maritime mobile service. Provided also that aircraft stations shall exchange public correspondence with stations of the maritime mobile service only as indicated if so authorised in the aircraft station license.

NOTE: Legal penalties can be imposed for breaches of the foregoing regulations.

DEFINITIONS

1. Communications Methods

Tele Communication; Any transmission, emission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, visual or other electromagnetic systems.

Air-Ground Communication; Two-way communication between aircraft and stations or locations on the surface of the Earth.

Blind Transmission; A transmission from one station to another to another station in circumstances where two way communication cannot be established, but where it is believed that the called station is able to receive the transmission.

Broadcast; A transmission of information relating to air navigation that is not addressed to a specific station or stations.

Radiotelephony Network; A group of radiotelephony aeronautical stations which operate on and guard frequencies from the same family and which support each other in a defined manner to ensure maximum dependability of air - ground communications and dissemination or air - ground traffic.

Read Back; A procedure whereby the receiving station repeats a received message or an appropriate part thereof back to the transmitting station so as to obtain confirmation of correct reception.

2. SERVICES

Aeronautical Fixed Telecommunication Network (AFTN); An integrated world - wide system of aeronautical fixed circuits provided as part of the aeronautical fixed service, for the exchange of messages between aeronautical Fixed stations within the network.

Aeronautical Mobile Service; A radio communication service between aircraft stations and aeronautical stations or between aircraft stations.

Aeronautical Telecommunication Service; A telecommunication service provided for any aeronautical purpose.

3. STATIONS

Aeronautical Station: A land station in the aeronautical mobile service. In certain instances an aeronautical station may be placed on board a ship or an Earth Satellite.

Aeronautical Telecommunication Station: A station in the aeronautical telecommunication service.

Aircraft Station; A mobile station in the aeronautical mobile service on board an aircraft or an airspace vehicle.

Air-Ground Control Radio Station; An aeronautical telecommunication station having primary responsibility for handling communications pertaining to the operation and control of aircraft in a given area.

HINTS ON OPERATING A RADIO

VHF TRANSCEIVER CONTROLS. Most radios have universal controls to enable the operator to select a frequency, adjust volume, turn the radio ON/OFF, and to adjust the sensitivity of the receiver. On some radios each function has a separate control while on other they have multiple functions.

Frequency selector - Most modern radios have 720 channels spaced at 25kHz intervals throughout the VHF range.

ON/OFF switch - provides power to the radio. Note that the radio should not be left on while the engine is being cranked by the starter motor. This is because transistor failure can occur if the voltage drops below 10 volts.

Volume control - is self explanatory as it adjusts the gain on the output side of the receiver to the headphones or speaker.

Squelch control - Is primarily to cut out the hissing noise you normally hear in your receiver when no signal is being received. Some radio equipment will have a separate 'Squelch ON/OFF' switch. Other may have an adjustable control and still others may have an automatic adjustment.

Quite a few pilots don't understand how the squelch control really functions so here's how.

The squelch controls the strength at which a received signal must be before it is passed to the audio amplifier.

For maximum reception sensitivity you would ordinarily turn the squelch control all the way clockwise at which point you will hear a hissing sound from your receiver. This setting, with the squelch open, allows you to receive the weakest signals.

As you turn the squelch control anti-clockwise, there will be a point where the hissing noise disappears. This is the correct setting for your squelch control.

SPEAK NORMALLY. Position the microphone so it just brushes your lips. Many operators tend to shout into the microphone. This distorts the transmission. The set will transmit at the required level without you needing to raise your voice. Some radio setups don't allow you to hear what you are saying properly and this may take a little getting used to, but remember, don't shout.



Speak at a normal rate or a little slower if transmission is difficult. Fast speech is very hard to copy at the other end. Remember to keep the microphone as close to your lips as possible. This helps to prevent picking up background noise.

LISTEN BEFORE TRANSMITTING. This is very important. An aircraft which is out of range to you may be transmitting, and just because you don't hear anything doesn't mean the frequency is clear. Wait at least 30 seconds before transmitting.

REMEMBER YOUR CALL SIGN. This traps a lot, including yours truly. If you fly different aircraft, be careful. Don't taxi as one call sign and call downwind another. It could confuse the situation and be dangerous if the incorrect call sign used is also flying. The call sign is normally the aircraft's registration letters which are normally marked on or near the instrument panel.

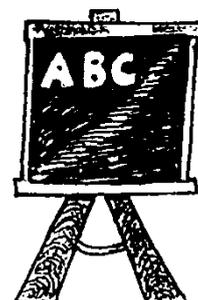
BATTERIES. Radios operating on NICAD batteries give little warning when the batteries are going flat. Suddenly you will lose the power to transmit, which can be a problem in some situations, so make sure before you start that your batteries are charged enough. Most radios have a claimed operation battery life of about 4 hours. Hardwiring your radio to the aircraft battery and charging system requires the radio and transponder and most other avionics to be turned off while starting and shutting down the engine. This minimises voltage surges or spikes which may cause failure of the avionics.

PHONETIC ALPHABET

Something we must all learn. I practice by reading the letters on car licence plates while driving. Probably not a good idea from the police point of view but a great way to learn

The syllables to be emphasised are in CAPITALS

Letter	Identifying Word	Spoken As
A	ALFA	ALfah
B	BRAVO	BRAH VOH
C	CHARLIE	CHARlee
D	DELTA	DELLtah



E	ECHO	ECKoh
F	FOXTROT	FOKStrot
G	GOLF	GOLF
H	HOTEL	hohTELL
I	INDIA	IN de ah
J	JULIETT	JEWleeETT
K	KILO	KEYloh
L	LIMA	LEEmah
M	MIKE	MIKE
N	NOVEMBER	noVEMber
O	OSCAR	OSScah
P	PAPA	pahPAH
Q	QUEBEC	keyBECK
R	ROMEO	ROW me oh
S	SIERRA	seeAIRRAH
T	TANGO	TANGgo
U	UNIFORM	YOU ne form
V	VICTOR	VIKtah
W	WHISKEY	WISSkey
X	X-RAY	ECKS RAY
Y	YANKEE	YANGkee
Z	ZULU	ZOOloo

TRANSMISSION OF TIME

To add to our problems, aviation circles have adopted UNIVERSAL CO-ORDINATED TIME (UTC) which must be used on all flight plans etc.

It is exactly 12 hours out from NZ STANDARD TIME and when used with the 24 hour clock, we have the big numbers in the morning and the small numbers in the afternoon.



EXAMPLE:

10.00 am NZST = 2200hrs UTC
 07.30am NZST = 1930hrs UTC
 01.30pm NZST = 0130hrs UTC
 06.30pm NZST = 0630hrs UTC

The introduction of NZ DAYLIGHT SAVING TIME will further confuse things so be careful. UTC does NOT have daylight saving.

When transmitting times when there will be no confusion with hours, only the minutes are given. E.G.. %ESTIMATE TAUPO AT THREE FIVE.+

I will be there at 35 minutes past 3 3 3

ALTITUDES AND NUMERALS

There is an official format for the pronunciation of numerals when transmitting by RTF.

1	WUN	2	TOO
3	TREE	4	FOWEr
5	FIFE	6	SIX
7	SEVen	8	AIT
9	NINer	0	ZE RO

DECIMAL	say	DAY - SEE- MAL
THOUSAND		TOUSAND
HUNDRED		HUNdred

The emphasis is placed on the capital letters. There is no need to go overboard with this but correct pronunciation does help.

FLIGHT LEVELS (altitudes) should be given as below.

In practice this is not always the case but if the correct format is used there should not be any misunderstanding.

Only the whole hundreds and thousands are given as HUNDRED or TOUSAND.

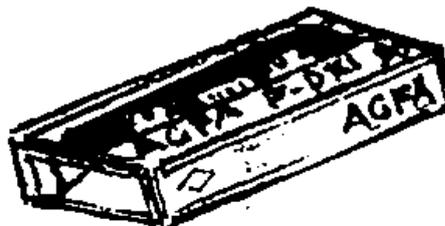
NUMBER	SPOKEN AS
10	WUN ZE RO
65	SIX FIFE
300	TREE HUNdred
783	SEVen AIT TREE
4000	FOWEr TOUSAND
11000	WUN WUN TOUSAND
25000	TOO FIFE TOUSAND
25500	TOO FIFE TOUSAND FIFE HUNdred

When giving radio frequencies, the word **DECIMAL** (pronounced DAY CE MAL) must be used.

E.G.: 118.1 WUN WUN AIT DAY-CE-MAL WUN

ATIS

Some Control Towers have an **ATIS** (Automatic Terminal Information Service) facility. This is a continuous tape of relevant weather and runway information which a pilot may tune to on special radio frequency. (In the case of Napier, 121.8)



a

The human voice on these is soon to be replaced by the monotones of a computer so don't think ET has contacted you. The Information is updated each time there is a change in the situation, and each change is given a letter of the alphabet as a title to enable the Controller to check that you are in receipt of the correct ATIS.

A TYPICAL ATIS IS :-

*NAPIER TERMINAL INFORMATION ALFA ISSUED ATUTC
 EXPECT VOR/DME APPROACH RUNWAY 16
 (May be remarks about runway serviceability or work on the airfield)
 SURFACE WIND 160 degrees MAGNETIC, 10 KNOTS
 VISIBILITY 10 KILOMETRES, HAZE
 CLOUD FEW 4 TOUSAND FEET
 TEMPERATURE 14 DEW POINT 4
 QNH 1013
 FORECAST 2000FT WIND 140 MAGNETIC 20 KNOTS
 ON FIRST CONTACT WITH NAPIER TOWER NOTIFY RECEIPT OF ALFA.*

Remember when you confirm the receipt of a particular ATIS you must read back the QNH.

When the tower is off watch an **OFF WATCH** message is transmitted.

e.g.

*NAPIER TOWER IS OFF WATCH
 USE UNATTENDED PROCEDURES ON 118.1
 TERMINATE FLIGHT PLANS ON 124.8
 NAPIER TOWER WILL RE - OPEN WATCH ATUTC*

This **OFF WATCH** message is handy for finding out what time the controller will commence duties. If you have started flying before his hours of attendance, when the controller announces that control has commenced if you are inside his controlled airspace, give a position report and tell him what you are doing so he can get a picture of the traffic in his area.

READ BACK REQUIREMENTS

On receipt of a transmission from a controller, certain things must be read back to ensure that you have received the transmission correctly.

These are:-

- A Runway in use.
- B ATC route clearances.
- C Flight level instructions.
- D Heading and speed instruction.
- E Altimeter settings (QNH).
- F The frequency after frequency change instructions.
- G Conditional clearances that involve Crossing, Back - tracking or lining up on the runway.

A good rule is: WHEN IN DOUBT, READ IT BACK.

Also, if you are not sure you have received a transmission correctly, read it back. It could save a problem later.

KNOW YOUR FREQUENCIES

The frequency band for VHF Aeronautical communication radios is between 118.0 and 135.975 MHz.

The emergency VHF frequency is 121.5 MHz for both voice transmission and your ELT.

Before operating your radio, and especially before operating in control airspace, check the radio frequencies in use and write them down where they can be easily referred to.

The palm or back of your throttle hand is a good place. I use this handy reference spot often.

If you begin a flight before the hours of operation of the controller, you will use the unattended frequency for the airfield. (In the case of Napier 118.1), and after the tower comes on you must change to the control frequency (Napier 124.8). If you are in an unfamiliar area, don't try and remember the frequencies. WRITE THEM DOWN.

LANGUAGE AND CONVERSATION

If you are flying using an intercom remember a small technical fault, or the inadvertent pressing of the prestle switch (the switch you press to transmit) you will broadcast the conversation to the world.

THIS DOES HAPPEN.

Imagine what broadcasting your desires for the lady controller or your feelings towards the club instructor will cost you.



LISTEN TO OTHER TRAFFIC

As you are flying around, keep half an ear open to the transmissions of other traffic.



Often you will only be able to hear one side of the conversation (if a transmission can be referred to as such) because one station is out of range to you but you will still (with a bit of practice) be able to get a good picture of the traffic in your area. Remember that there may also be

NORDO (Non Radio Equipped) traffic around so never let up on your lookout. A reasonable picture of what is going on is always a great help.

RADIO CHECKS

If at any time you are not sure that your radio is operating correctly, you can request a **Radio Check** from the controller as follows:-

NAPIER TOWER FOXTROT TANGO INDIA RADIO CHECK ONE TWO FOUR DECIMAL EIGHT.

You must give the frequency that you are transmitting on because the Controller is monitoring several frequencies.

The controller will reply:-

FOXTROT TANGO INDIA RECEIVING YOU READABILITY FIVE (Or any number from 1 to 5 explained below).

5	Perfectly readable
4	Readable
3	Readable with difficulty
2	Readable now and then
1	Unreadable

Use this if it is necessary but don't do it too often or you may wear out your welcome.

COMMONLY USED STANDARD PHRASES

ACKNOWLEDGE	Let me know that you have received and understood this message.
AFFIRM	Yes
APPROVED	Permission granted
BOUND	I am en-route to

CANCEL	Annul the previous clearance
CHECK	Examine a system or procedure
CLEARED	Authorised to proceed under conditions specified
CONFIRM	Have I correctly received the following, or did you receive the message
CONTACT	Establish Radio Contact with õ õ õ õ ..
CORRECT	That is correct.
CORRECTION	An error has been made. The correct version is õ õ õ .
DISREGARD	Consider that transmission as not sent.
GO AHEAD	Proceed with your message.
IN BOUND	I am en-route to your location.
I SAY AGAIN	I repeat.
MONITOR	Listen out on frequency.
NEGATIVE	No - Permission not granted - That is not correct.
OVER	My transmission has ended. I expect a response.
OUT	My transmission has ended. I expect No Response.
READ BACK	Repeat back exactly as received.
RE CLEARED	A change has been made to your last clearance and This new clearance supersedes the last.
REPORT	Pass me the following information.
REQUEST	I should like to know - I wish to obtain.
ROGER	I have received all of your last transmission. <u>Not to be used as a read back or an answer in the AFFIRMATIVE or NEGATIVE.</u>
SAY AGAIN.	Repeat your last transmission.
STAND BY	Wait and I will call you.
VACATING	I am leaving.
TRANSIT	I wish to pass through.
VERIFY	Check and confirm.
VIA	My route is.
WILCO	I understand and will comply.



TERMS USED TO DESCRIBE YOUR POSITION IN THE LANDING SEQUENCE.

YOU ARE NUMBER ONE

You are first in the landing sequence, but because the runway is obstructed another aircraft may be taxiing across or taking off you cannot be given clearance to land. Clearance to land will come later.

YOU ARE NO 2 or 3 or 4 etc.

This is your position in the landing sequence. Locate the aircraft positioned before you (and the others if there are any) and slot yourself in. The Controller may direct how he wants you to achieve this.



RADIO FAILURES

Remember ~~M~~urphy's Law+Whatever can go wrong will do so, and at the worst possible time.

If your radio should fail at any time during a flight here are some guide lines.

RADIO FAILS OUTSIDE CONTROLLED AIRSPACE.

DON'T enter controlled airspace. (Especially a Zone).

Land out and ring the Controller and arrange to enter NORDDO.

RADIO FAILS INSIDE THE ZONE BUT OUTSIDE THE CIRCUIT.

Continue approach and make a %Standard Overhead Re-join and wait for lights. Remember, because you are NORDDO you must use the designated circuit direction for your runway.

RADIO FAILS IN THE CIRCUIT.

This is a tricky one.

Continue your approach and land. Watch out for lights. These may not come so be especially careful.

If your radio fails inside controlled airspace remember that just because you cannot hear does not mean your transmitter is faulty, so continue to transmit your intentions prefixed by %TRANSMITTING BLIND+, and keep a lookout for lights.

If you are on a flight plan and your radio fails, remember your calls. SEARCH AND RESCUE is a bit drastic for just a radio failure so land as soon as possible and RING UP.

A jammed transmitter or press to talk switch will block that frequency and stop any further transmission being understood in the vicinity.

LOCAL FLIGHTS

When requesting taxi clearance for a local flight, just saying %local+ is not sufficient. The controller must know where in the local area you intend to go, so plan your flight before you leave and let him know the route you wish to take.

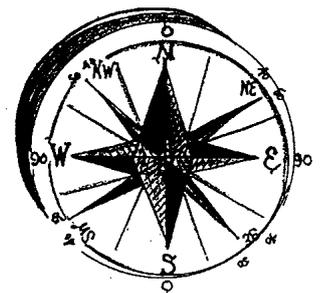
If you decide to deviate from your plan, let him know.

Often when you are flying within a zone the controller will call you requesting a %Position Report+

e.g. *FOXTROT TANGO INDIA REPORT POSITION.*

Your reply must contain **Position** and **Altitude**, (He should already know your heading and intentions because the details of your flight were given prior to take off)

Position is sometimes difficult unless you are overhead a prominent place. Terms like 'abeam' or 'approaching' are useless.



They don't give any indication of distance or accurate direction. Use a prominent feature in the vicinity (a village, well known hall, or small lake etc). Preferably a position shown on the VFR Navigation Chart because others may be using this if they are not familiar with the area. Work compass directions using this feature as a reference. The 8 points of the compass will be sufficient and a reasonable estimate of distance will give an accurate position.

Altitude is simple (Read from the altimeter) but remember that if you are climbing or descending let him know

E.G.:

FOXTROT TANGO INDIA IS THREE MILES SOUTH WEST OF RISSINGTON AT ONE THOUSAND FEET.

FOXTROT TANGO INDIA IS TWO MILES NORTH OF BAY VIEW AT ONE THOUSAND FIVE HUNDRED FEET, DESCENDING TO ONE THOUSAND FEET.

This method will ensure that you communicate your position briefly and accurately. If you are in an unfamiliar area use a chart and **KEEP TRACK OF YOUR PROGRESS ON IT.**

In unfamiliar country it can take some time to sort things out if the controller requests a position report and you do not know where you are. **AT LEAST GIVE YOUR ALTITUDE AND +STAND BY+.** The Controller now knows if you are on the same level as other traffic and probably knows which direction you are in from the Airfield VDF.

Know your area or use a chart

DON'T TELL LIES. Apart from being stupid, each time you transmit the VDF in the tower will show the compass direction of your transmission and although this doesn't give distance or altitude, the controller will know what you are up to.

FLIGHT PLANS AND SARWATCH

FLIGHT PLANS

VFR flight plans are only required if your flight will take you more than 50NM from land, But you can submit a VFR flight plan for any flight if you wish.

VFR flights for which a flight plan has been filed must maintain a listening watch on the appropriate frequency. If the pilot wishes to report positions the report should contain the following elements (as appropriate)

Identification	Your call sign.
Position	As covered in %local Flights+
Time	In minutes past the Hour
Altitude	As covered in %local Flights+
ETA	At your destination or next landing point as appropriate.
Route	To next significant position.

Remember you must give a position report and get clearance from ATC to enter or transit class C and D airspace and (class E airspace by night), and flights within that airspace must be in accordance with such a clearance.

SARWATCH. (search and rescue watch)

Sarwatch is an option pilots may choose when requiring an alerting service. Sarwatch is available for flights both within controlled and class G airspace.

To request Sarwatch the following details must be provided.

1. Aircraft registration.
2. Aircraft type.
3. Route details including destination or standard plan identification.
4. Persons on board.
5. Nominated %Sartime+ (The nominated time for search and rescue to be initiated if you do not arrive).
6. Remarks including Pilot-in-Command.

To request SARWATCH just radio the nearest ATC unit.

“NAPIER TOWER, FOXTROT TANGO INDIA, REQUEST SARWATCH.”

The Controller will then ask you for the above details.

Submitting a Flight Plan or Requesting a Sarwatch might cost you a few dollars (everything in aviation seems to these days), but they are available for your safety so don't be frightened to use them.

If you realise that you will not arrive at your destination before or at your ETA, contact the nearest ATC unit and **amend your Flight plan or Sartime.**

REMEMBER!!!! Both Flight plans and Sarwatch **MUST** be terminated, either by contacting an ATC unit by Radio or Telephone or if this is not possible ringing %The National Briefing Office+on **0800 626 756.**

Failure to do this will cause a lot of people considerable annoyance and leave you with egg on your face which will be difficult to wash off.



TRANSPONDERS

Transponders allow the positive identification of aircraft by a system where your aircraft is sent a signal that prompts your transponder to transmit a Squawk Code which establishes your position, altitude, heading, and speed. At the beginning of each flight, individual aircraft are instructed to dial in a code which will identify them for that flight.

Certain areas are classed as %Transponder Mandatory Airspace+. These areas are depicted on the charts by the Category and Class being in reverse print. Refer to the

Planning Manual, RAC section.

Before entering Transponder Mandatory Airspace you may be asked to dial up a specific code frequency by ATS. The action of dialling a requested frequency is called **SQUAWKING**.

Unless instructed otherwise by an ATS unit, all transponder equipped aircraft in Transponder Mandatory airspace must set a standard code as indicated below.

Taxiing and circuit flying	Select Stand By
Circuit flying in controlled aerodromes	Select 2200
Powered aircraft in General Aviation Areas.	Select 1400
Fixed wing (VFR) aircraft	Select 1200 .

Emergency situations can be indicated to ATS by dialling your transponder to certain codes.

Code **7700** To indicate a state of emergency other than the following.

Code **7600** To indicate communication failure.

Code **7500** To indicate unlawful interference. (Hijack etc)

When dialling in a code into your transponder you **MUST** remember to switch to **Stand By** mode if passing through the 7000 series otherwise your transponder will lock on to 7500 and at your next stop you could get your tyres shot out. Also, do not operate the **IDENT** feature unless instructed by ATC.

TRANSPONDER PHRASEOLOGIES

“SQUAWK” (eg **Squawk 3512**) Which means set the code as instructed by adjusting the dials on the transponder to the numbers given .

You are also required to read back the instruction, eg **Squawk 3512 Sierra Alpha Quebec**.

“CONFIRM SQUAWK” (eg **Confirm Squawk 3512**) Which means confirm (mode Alfa) set and the correct code (numbers) on the transponder and read back the code and numbers.

“SQUAWK CHARLIE” Which means set your transponder to (Mode C or ALT) which transmits altitude and position information. ALT is the code you should have selected at all time except in the circuit, it should then be on *standby*.

“SQUAWK IDENT” Which means press the ident button on your transponder. This causes your radar symbol to flash so that the controller can identify you. You do not need to respond to this instruction.

“CONFIRM” Which means check and report your present altitude to Air traffic Control. This needs to be done by ATC so they can use your read out for separation purposes if within 300ft.

“**SQUAWK NORMAL**” Which means select the mode that is normally used ie ALT. This would normally mean you have forgotten to turn on the transponder or it is still on standby.

FLIGHT SERVICE AERODROMES

Aerodromes that are not provided with an Air Traffic Control Service are known as uncontrolled aerodromes. Some of these uncontrolled aerodromes may have an Aerodrome Flight Information Service (AFIS) in attendance.

The **Aerodrome Flight Information Service** is provided by the flight service station (FSS) established in the tower located on the aerodrome. Because somebody is in attendance in the tower these aerodromes are known as *attended uncontrolled* aerodromes.

Flight service do not normally issue clearances but only provide advise and information for the safe and efficient conduct of flights in the vicinity of the aerodrome.

You should advise a flight service what your intentions are and POB before taxiing. Then call as per normal unattended procedures and they will give you traffic, wind and runway in use information.

MANDATORY BROADCAST ZONES (MBZ)

Mandatory Broadcast Zones (MBZ) have been established around busy unattended aerodromes and in airspace not specific to one aerodrome.

Pilots must transmit position and intentions on a specified frequency prior to entering and while in the zone at specified intervals, normally 5 mins or as depicted on the appropriate chart.

UNICOM

A Unicom is an air to ground communication facility that may be provided at MBZ aerodromes to provide information to aircraft but not as a controlling facility.

Ardmore provides this type of service and after transmission on the appropriate frequency uses a Beep back response system giving conformation they are using the right frequency.

Unicom provides:

- Basic weather info, wind, visibility, cloud, temp, and QNH.
- Current aerodrome info and condition.
- A base radio and telephone service.

Radio procedures are similar to Flight Service Stations (Basically Unattended)

VFR COMMON FREQUENCY ZONE (CFZ)

These areas are similar to Mandatory Broadcast Zones in that position, altitude and intentions are broadcast at various intervals as required while operating inside a (CFZ).

The main difference from an (MBZ) is that the requirements associated with a special procedures area are not mandatory but good airmanship should prevail.

THE EMERGENCY LOCATOR TRANSMITTER (ELT) OR (ELBA)

The emergency locator transmitter or also known as emergency locator beacon aircraft (ELBA) is a radio transmitter capable of sending a signal simultaneously on the international distress frequencies. The unit has its own power source (Battery).

Most General Aviation aircraft require the (ELT) to activate automatically under given conditions where as Microlight aircraft only require personal Locator Beacons (PLB) which are normally switched on manually as required.

It is normal to check your ELT before shut down by listening on 121.5 to see if it has been set off inadvertently in flight or by a heavy landing. (It sound like a siren).

Under no circumstances must an ELT be tested in flight. If a test is required it must be done under the following conditions:

- Tests must be carried out in shielded areas under controlled conditions.
- Do not test longer than 3 audio sweeps.
- Restrict tests during the first five minutes past each hour.
- If testing outside this time period is essential, coordinate the test with the nearest ATC unit.

DISTRESS CALLS

If you find yourself in a LIFE THREATENING situation during flight or observe another aircraft or ship etc in a similar situation, a ~~M~~MAYDAY+call should be made to the appropriate ground station for the area. (Control Tower, or Flight Information Service).

There is an official ICAO format for distress calls which must be used in all examinations. (Failure to get emergency procedures correct, results in failing the exam).

It is as follows;-

MAYDAY MAYDAY MAYDAY.

- (1) NAME OF STATION BEING ADDRESSED.
- (2) IDENTIFICATION OF AIRCRAFT. (Call Sign)
- (3) NATURE OF DISTRESS.
- (4) INTENTION OF PERSON IN COMMAND.
- (5) PRESENT POSITION HEIGHT AND HEADING.



e.g.

MAYDAY MAYDAY MAYDAY.

NAPIER TOWER.

FOXTROT TANGO INDIA.

HAS ENGINE ON FIRE UNABLE TO MAINTAIN HEIGHT.

MAKING FORCED LANDING.

PRESENTLY THREE MILES NORTH WHIRINAKI MILL AT THREE THOUSAND FEET HEADING SOUTH.

If you are in a situation of URGENCY and require assistance or priority, (passenger with a suspected heart attack or you are in extreme turbulence where control is very difficult to maintain etc) or you observe another aircraft, ship etc in a similar situation a PAN call should be made.

Once again the official ICAO format is as follows;-

PAN PAN PAN PAN PAN PAN

- (1) NAME OF STATION BEING ADDRESSED.
- (2) IDENTIFICATION OF AIRCRAFT.(Call Sign)
- (3) NATURE OF URGENCY.
- (4) INTENTIONS OF PERSON IN COMMAND.
- (5) PRESENT POSITIONS HEIGHT AND HEADING.

e.g.

PAN PAN PAN PAN PAN PAN.

NAPIER TOWER.

FOXTROT TANGO INDIA.

HAVE PASSENGER WITH SUSPECTED HEART ATTACK.

RETURNING TO NAPIER REQUEST PRIORITY LANDING.

PRESENTLY OVERHEAD PUKETAPU AT ONE THOUSAND FEET

RETURNING VIA PORAITI.

The above examples are international format and although they must be used in the exam situation they are not ideal for most sport flying in New Zealand.

They are based on the assumption that the position height and heading of the aircraft is known (e.g. on Radar) which will not necessarily be the case here, therefore POSITION HEIGHT AND HEADING becomes one of the most essential

elements of the call and should not be left until last in case your ability to transmit is cut short.

A more suited format for DISTRESS and URGENCY calls is;-

*MAYDAY MAYDAY MAYDAY.
(or PAN PAN PAN PAN PAN PAN)
STATION BEING CALLED.
IDENTIFICATION OF AIRCRAFT.
POSITION HEIGHT AND HEADING.
NATURE OF DISTRESS OR URGENCY.
INTENTIONS OF PERSON IN COMMAND.*

*MAYDAY MAYDAY MAYDAY.
NAPIER TOWER.
FOXTROT TANGO INDIA IS OVERHEAD BAY VIEW AT ONE THOUSAND
FEET HEADING SOUTH.
ENGINE ON FIRE.
MAKING EMERGENCY LANDING.*

The essential elements you must convey are;-

- Who you are.
- Where you are.
- What the problem is.
- What you intend doing about it. (If time permits).

If you hear another station broadcast a DISTRESS or URGENCY call maintain radio silence so you don't hinder communications and be ready to give assistance if directed.

Listen after you hear the call to make sure that it has been acknowledged by someone. If not, acknowledge the message, and relay it to the nearest AIR TRAFFIC SERVICE UNIT as soon as possible.

JUST REMEMBER.

KEEP CALM.

USE YOUR HEAD.

REMEMBER WHAT YOU HAVE BEEN TAUGHT.

IF ITS NOT YOU IN DANGER, ASSIST, BUT DON'T GET IN THE WAY.

DON'T ADD TO THE PROBLEMS BY TAKING UNNECESSARY RISKS.

LIVES ARE IMPORTANT.

AIRCRAFT AREN'T!!!!!!!!!!

Notes:

NOW LET'S TRY SOME PRACTICAL RADIO WORK

A SIMPLE CIRCUIT

Throughout the text of the radio calls unless otherwise specified.



Represents NAPIER TOWER.



Represents Aircraft FOXTROT TANGO INDIA.

Lets try a simple example on a controlled airfield (in this case NAPIER)
You wish to take a passenger up for 1 circuit.

FIRST, listen to the %ATIS+(available at Napier on frequency121.8) and take note of the weather and runway information given. You will have to read back the title of the current ATIS, e.g. Alpa or Bravo, or Charlie etc and the current QNH so take particular note of these. Write them on the back of your hand if necessary to save confusion in the heat of the moment later.

BEFORE starting to taxi, make contact with the Tower on the Control Frequency (in the case of Napier 124.8) to get taxi instructions and to allow the Controller to write out your flight strip.

To make contact, station being called FIRST, aircraft type then your callsign.
(The registration letters of your aircraft) .



NAPIER TOWER (Bantam Microlight) FOXTROT TANGO INDIA

Napier Tower's reply will be.



FOXTROT TANGO INDIA NAPIER TOWER.

You have established contact, and he is now waiting for you to fill him in on your flight details. First your flight, which in this case is 1 circuit. Next the number of persons on board (POB), which, in this case is 2, and then inform him that you have listened to the current ATIS. (Remember the read back of the QNH.

For this example say *ATIS Bravo QNH 1013*



REQUEST TAXI FOR ONE CIRCUIT, TWO POB, HAVE BRAVO ONE ZERO ONE THREE.

The Controller is writing out your strip and will now instruct you to taxi to the holding point for the runway in use or the one he wishes you to use. He will confirm that you have the current ATIS and make you aware of any other traffic or obstacles in your taxi path, and give you the time (only the minutes) to allow you to check your watch. The time check does not have to read back.



*TAXI TO HOLDING POINT XRAY FOR GRASS 34
BRAVO CONFIRMED.
TIME TWO FIVE.*

You now have to read back any instructions given to confirm that you have received them correctly, which in this case is the runway holding point you are instructed to proceed to and then acknowledge the call with your callsign.



*TAXI TO HOLDING POINT XRAY FOR GRASS 34 FOXTROT
TANGO INDIA*

Now taxi to holding point Xray for grass 34 via the NORMAL route. If you wish to get there via any other route this must be requested and approved by the Controller.

At the holding point do your checks and when finished let the Tower know you are ready for take off. As you have already established contact with the Tower and he knows you are there, so there is no initial contact call.



FOXTROT TANGO INDIA IS READY.



*FOXTROT TANGO INDIA LINE UP GRASS 34, CLEARED FOR
TAKE OFF.*

You must now confirm his take off clearance.



*LINE UP GRASS 34, CLEARED FOR TAKE OFF. FOXTROT
TANGO INDIA.*

Away you go.

Your next call is your down wind call which should be made abeam the upwind end

of the runway. If you are unable to make your down wind call at this point due to the frequency being busy, report the position you are at when you make the call.
(e.g. mid down wind, late down wind,.)

When you are abeam the upwind end of your runway call the tower and give the controller your position. It is a good idea to identify the circuit you are flying and the runway you are circuiting for. If there are a number of aircraft in the circuit or a number of circuits in use it will make it easier for the Controller to find and identify you. Also you must tell the Controller if you are making a %Full Stop+landing or a %Touch and Go+

As before, contact is already established with the Tower.



*FOXTROT TANGO INDIA IS RIGHT HAND DOWNWIND
GRASS THREE FOUR, FULL STOP.*

The Controller will now give you instructions to join the landing sequence.



FOXTROT TANGO INDIA GRASS 34. CLEARED TO LAND.

Once again you must confirm the clearance.



GRASS 34 CLEARED TO LAND FOXTROT TANGO INDIA.

You can now continue your approach as normal and land.

Often the Controller will be too busy to give you taxi instructions to return to your hanger and if there is nothing in your path he may omit these. If you wish to taxi to a different location you must get clearance from the controller.

COMPLICATED CIRCUITS

NOW LETS TRY A FEW MORE CIRCUITS WITH SOME PROBLEMS THROWN IN.

You will go by yourself this time for 30min circuit practice.

First listen to the ATIS and make contact with the tower as per the previous example.



NAPIER TOWER FOXTROT TANGO INDIA.



FOXTROT TANGO INDIA NAPIER TOWER.



*REQUEST TAXI FOR THREE ZERO MINUTES CIRCUITS ONE POB
HAVE BRAVO ONE ZERO ONE THREE.*



*TAXI TO HOLDING POINT WHISKEY.
QNH NOW ONE ZERO ONE FOUR.
TIME FOUR FIVE.*

A lot has been thrown at you this time.

First the QNH has changed recently and the Controller has not had time to alter the ATIS yet. Remember to read back the new QNH. Next, to get to the holding point for grass 16 you must cross grass 10-28 and at present this is active, therefore, the Controller wants to hold short of crossing this vector. He will give you clearance to cross the vector later. You must now acknowledge the taxi clearance so far and the new QNH.



*HOLD AT HOLDING POINT WHISKEY.
QNH ONE ZERO ONE FOUR FOXTROT TANGO INDIA*

Now taxi there via the usual route. Stop short of crossing Vector 10-28 and notify the Controller that you are there.



FOXTROT TANGO INDIA IS HOLDING AT WHISKEY.

When the vector is clear the Controller will give you clearance to continue to the holding point grass 16.



*FOXTROT TANGO INDIA CLEARED TO HOLDING POINT ALPHA
FOR GRASS ONE SIX.*

Once again acknowledge the clearance.



*CLEARED TO HOLDING POINT ALPHA FOR GRASS ONE SIX
FOXTROT TANGO INDIA.*

You can now taxi to the holding point, complete your pre take-off checks, and when ready notify the controller as before.

You have decided to circuit to the right so you don't have to fly over a built up area and to save having to climb to 1000ft on the downwind leg you want to fly low level circuits. Now is the time to request this.



*FOXTROT TANGO INDIA IS READY, REQUEST LOW LEVEL
RIGHT HAND CIRCUITS.*



FOXTROT TANGO INDIA HOLD POSITION.

Your vector is required for other traffic, usually landing, which has priority and the Controller wants you to hold. Again you must acknowledge the instruction.



FOXTROT TANGO INDIA IS HOLDING.

When the vector is clear the Controller will give you clearance to take off.



*FOXTROT TANGO INDIA LINE UP GRASS 16, RIGHT HAND LOW LEVEL
CIRCUITS APPROVED BUT MAKE FIRST CIRCUIT LEFT HAND.
CLEARED FOR TAKEOFF.*

You have the necessary clearances for your low level right hand circuits but because of other traffic the Controller wants you to circuit to the left first circuit. (Remember the little catch, first circuit left then the rest right.) Once again acknowledge the clearance and instruction.



*LINE UP GRASS 16 LOW LEVEL RIGHT HAND CIRCUITS
APPROVED FIRST CIRCUIT LEFT HAND CLEARED FOR TAKEOFF, FOXTROT
TANGO INDIA.*

Takeoff now and prepare for your downwind call



*FOXTROT TANGO INDIA IS LEFT HAND DOWNWIND GRASS ONE
SIX TOUCH AND GO.*



*FOXTROT TANGO INDIA EXTEND DOWNWIND NUMBER TWO TO
CESSNA ON LONG FINAL GRASS ONE SIX.*

The Controller wants you to extend your downwind leg to allow a Cessna on long final to land before you. You must now acknowledge the Tower's instruction.



*EXTEND DOWNWIND, NUMBER TWO, TRAFFIC IN SIGHT
FOXTROT TANGO INDIA.*

If you do not have the Cessna in sight your acknowledgement would be,



*EXTEND DOWNWIND, NUMBER TWO, LOOKING, FOXTROT
TANGO INDIA.*

When you have the Cessna in sight,



TRAFFIC IN SIGHT, FOXTROT TANGO INDIA.

Now continue on your downwind leg until the Cessna passes your wing tip before you turn onto your base leg.

The Controller cannot clear you to touch and go until the Cessna has cleared the runway so continue your approach and keep an eye on the Cessna's progress



FOXTROT TANGO INDIA CLEARED TOUCH AND GO GRASS 16.

Now acknowledge the clearance. It is not required but it is a good idea to remind The Controller at this point that your future circuits will be right hand. He has probably had a great deal to contend with since the original clearance was given and this may help to keep things up to date.



*CLEARED TOUCH AND GO GRASS 16. RIGHT HAND CIRCUIT
FOXTROT TANGO INDIA.*

Do your touch and go and begin your right hand circuit and prepare for your next downwind call.



*FOXTROT TANGO INDIA IS RIGHT HAND DOWNWIND GRASS
16 TOUCH AND GO.*



FOXTROT TANGO INDIA MAKE 1 LEFT HAND ORBIT.

Because of the traffic situation the Controller wants you to orbit in the position you

are in. Don't make your orbit too tight. It should be approximately rate 1 to allow sufficient time for the traffic position to change. After completing your orbit the Controller will clear you to continue your approach, or, if necessary orbit again. In this situation try to ascertain the position of other traffic to get a picture of what is happening.



FOXTROT TANGO INDIA CONTINUE APPROACH NUMBER TWO TO CESSNA LEFT BASE GRASS ONE SIX.

Your reply. (Remember you should already know the position of the Cessna.)



CONTINUE APPROACH NUMBER TWO TRAFFIC IN SIGHT FOXTROT TANGO INDIA.

After the Cessna has cleared the runway.



FOXTROT TANGO INDIA CLEARED TOUCH AND GO GRASS 16.



CLEARED TOUCH AND GO GRASS 16. FOXTROT TANGO INDIA.

Once again you are cleared to your downwind call.



FOXTROT TANGO INDIA IS RIGHT HAND DOWNWIND GRASS ONE SIX FULL STOP.

You have decided to make this your last circuit and are requesting a Full Stop+ landing.



FOXTROT TANGO INDIA CONTINUE APPROACH NUMBER ONE.

This means that you are first in the landing sequence on Vector 16, but the Controller is going to clear another aircraft to take off before you land. Just continue as instructed and reply to the Tower in the usual manner.



CONTINUE APPROACH NUMBER ONE FOXTROT TANGO INDIA.

When the Vector is clear.



FOXTROT TANGO INDIA CLEARED TO LAND GRASS 16.



CLEARED TO LAND GRASS 16 FOXTROT TANGO INDIA.

Continue now and land as normal.

If for some reason when you are on short final the runway is still obstructed, the Controller may instruct you to go **GO ROUND**; this means you over fly the runway along the centre line, or just to one side to avoid flying over the obstruction, and climb to 500ft as after a takeoff and re-circuit.

This doesn't happen often but always be ready just in case. If you are instructed to **GO ROUND** don't muck about, climb away as soon as possible.



FOXTROT TANGO INDIA GO ROUND.



GOING ROUND FOXTROT TANGO INDIA.

VACATING THE CIRCUIT

You are leaving the airport for a flight south to a friends farm which is just outside controlled air space and you plan to return later that day. The ATIS %Golf+ gives the wind at 310/10, QNH 1020.



NAPIER TOWER FOXTROT TANGO INDIA.



FOXTROT TANGO INDIA NAPIER TOWER.



*REQUEST TAXI VACATING TO THE SOUTH VIA FERNHILL
(A small town on the edge of the zone) ONE POB HAVE GOLF
ONE ZERO TWO ZERO.*

(If you wish you can also tell him that you will be returning later in the afternoon).



TAXI TO HOLDING POINT XRAY FOR GRASS THREE FOUR, GOLF

Now read back the instructions as previously covered.



*TAXI HOLDING POINT XRAY, GRASS THREE FOUR, FOXTROT
TANGO INDIA.*

Taxi and do your checks as before.

Because you are heading south and taking off on Vector 34, a left turn after takeoff is the most convenient path out. The circuit for this runway is right hand therefore you must request the left turn.



*FOXTROT TANGO INDIA IS READY REQUEST LEFT TURN
OUT.*



*FOXTROT TANGO INDIA LINE UP GRASS 34, CLEARED SOUTH VIA
FERNHILL ONE THOUSAND FEET OR BELOW, LEFT TURN APPROVED,
CLEARED FOR TAKEOFF.*

You have now been cleared for your intended flight with the instruction not to exceed 1000ft until clearing the zone.



LINE UP GRASS 34, TRACK SOUTH VIA FERNHILL ONE THOUSAND FEET OR BELOW, LEFT TURN APPROVED, CLEARED FOR TAKEOFF, FOXTROT TANGO INDIA.

Ok takeoff, turn left, and fly to Fernhill below 1000ft. At Fernhill contact the tower and give him your position and flight level. You will have to make initial contact with the Tower again.



NAPIER TOWER FOXTROT TANGO INDIA.



FOXTROT TANGO INDIA NAPIER TOWER.



FOXTROT TANGO INDIA IS OVERHEAD FERNHILL ONE THOUSAND FEET, CLEAR OF THE ZONE.



FOXTROT TANGO INDIA.

You are now clear to continue to your friend's farm.

ENTERING CONTROLLED AIRSPACE

Any time you want to enter controlled airspace, whether it be to land at an airport, or transit to another destination, you must **FIRST** obtain clearance from the Controller. On the first contact you are required to give a position report, so prepare for this before your transmission. In an unfamiliar area use a chart. In busy airspace accurate reporting is vital. You must also give him the number of persons on board. (POB).

The order of information is: *A/C Identification, Position, Height, Intentions, POB*

Before entering the Zone at Fernhill (the settlement on the edge of the zone) you call Napier Tower. If you call at the boundary and the Controller cannot give you clearance at that time there is no time to orbit outside controlled airspace.



NAPIER TOWER, FOXTROT TANGO INDIA.



FOXTROT TANGO INDIA NAPIER TOWER.



FOXTROT TANGO INDIA IS 5NM SOUTH, ONE THOUSAND FEET ONE POB INBOUND NAPIER.

The controller will now give you the essential elements of the weather situation at the Airport, including the current QNH which you are required to read back so take particular note of this, plus instructions to approach the circuit.



FOXTROT TANGO INDIA ENTER THE CONTROL ZONE ON TRACK TO NAPIER VIA PUKETAPU, ONE THOUSAND FIVE HUNDRED FEET OR BELOW, SURFACE WIND THREE THREE ZERO FIVE KNOTS QNH ONE ZERO TWO ONE CALL AGAIN PUKETAPU.

The controller has cleared you into the zone to Napier via Puketapu (a village just short of the circuit) below 1500ft. The wind direction and strength tells you that you will probably be instructed to use grass Vector 34 and the QNH has changed since you left this morning so you will have to adjust your altimeter. As usual confirm receipt of the clearance and instruction.



CLEARED TO NAPIER VIA PUKETAPU, ONE THOUSAND FIVE HUNDRED FEET, OR BELOW, CALL AGAIN PUKETAPU QNH ONE ZERO TWO ONE FOXTROT TANGO INDIA.

Continue now to Puketapu as instructed and overhead call again.



NAPIER TOWER FOXTROT TANGO INDIA.



FOXTROT TANGO INDIA NAPIER TOWER.



FOXTROT TANGO INDIA IS OVERHEAD PUKETAPU ONE THOUSAND FEET REQUEST JOINING.



FOXTROT TANGO INDIA JOIN LEFT BASE GRASS 34 TRAFFIC IS A CESSNA LATE DOWNWIND GRASS 34.

You now have your instructions to join the circuit with a caution that a Cessna is late downwind therefore you will have to locate this aircraft before joining. Acknowledge the Tower as usual.



JOIN LEFT BASE GRASS THREE FOUR, COPY THE TRAFFIC FOXTROT TANGO INDIA.

This means that you understand his caution regarding the Cessna but you have not located the aircraft yet.

You now locate the Cessna and join the circuit on left base after it has passed. When you join the circuit at the instructed point you must inform the Tower.



*FOXTROT TANGO INDIA IS JOINING LEFT BASE GRASS
THREE FOUR FULL STOP.*



*FOXTROT TANGO INDIA CONTINUE APPROACH NUMBER TWO BEHIND
THE CESSNA ON SHORT FINAL.*



NUMBER TWO CESSNA IN SIGHT FOXTROT TANGO INDIA.

You are now back in the familiar circuit pattern again.

TRANSITING CONTROLLED AIRSPACE.

If you wish to pass through controlled airspace during any part of a flight you must get clearance from the Air Traffic Control unit for the area on the appropriate frequency.

You are flying from Waipukarau to Wairoa and wish to pass through the Napier Control Zone.

BEFORE entering the zone you would call Napier Tower.



NAPIER TOWER FOXTROT TANGO INDIA



FOXTROT TANGO INDIA NAPIER TOWER.



*FOXTROT TANGO INDIA IS 5NM SOUTH AT ONE THOUSAND
FIVE HUNDRED FEET BOUND WAIROA REQUEST
CLEARANCE THROUGH THE ZONE.*



*FOXTROT TANGO INDIA CLEARED THROUGH THE ZONE TRACK TO
WAIROA, ONE THOUSAND FIVE HUNDRED FEET OR BELOW, REPORT
ABEAM NAPIER.*

You have been cleared through the zone on track to Wairoa. (remember, if you want to deviate from this path you must get clearance) and you have been instructed to call the Tower when you are abeam (at your closest point) to Napier Airport. You reply in the normal manner.



CLEARED ON TRACK TO WAIROA, ONE THOUSAND FIVE HUNDRED FEET OR BELOW, WILCO, FOXTROT TANGO INDIA.

Another example would be



FOXTROT TANGO INDIA CLEARED THROUGH ZONE TWO THOUSAND FEET OR BELOW, VIA PUKETAPU, BAYVIEW, REPORT LEAVING THE ZONE TO THE NORTH.

In this example you are cleared through the zone via a certain route with altitude restrictions. Reply in the normal manner.



CLEARED VIA PUKETAPU, BAYVIEW, TWO THOUSAND FEET OR BELOW WILCO, FOXTROT TANGO INDIA.



FOXTROT TANGO INDIA IS CLEAR OF THE ZONE TO THE NORTH.



FOXTROT TANGO INDIA.

UNCONTROLLED AIRFIELDS

VFR flights in uncontrolled airspace and within 5 to 10 nautical miles of an airfield, and this includes airports serviced by Flight Information Service and controlled by Air Traffic Control before the hours of attendance, are required to listen on the appropriate radio frequency and let other traffic know their position and intentions.

This is required for obvious reasons.

In uncontrolled airspace your calls are made to all other traffic in the area and there will not be a reply to your transmission.

(1) INBOUND

You are flying to Napier Airport and will arrive before the controller's hours of attendance.

Between 5 to 10 miles out you would make your first radio call giving position report and intentions.



*NAPIER TRAFFIC FOXTROT TANGO INDIA IS OVERHEAD
WAIPATAKI BEACH AT ONE THOUSAND FIVE HUNDRED FEET
INBOUND NAPIER.*

Other traffic in the area will now know where you are and what you are going to do. If your ETA in the circuit is more than 5 minutes away it is a good idea to give another traffic call midway to the Airport.



*NAPIER TRAFFIC FOXTROT TANGO INDIA IS OVERHEAD
BAYVIEW ONE THOUSAND FEET JOINING RIGHT HAND
DOWNWIND GRASS THREE FOUR.*

Remember, there will not be a reply to your call. You should have an idea of other traffic in the area through their traffic calls but keep a special lookout and always remember that there may be NORDO traffic around. Now slot yourself into the traffic and call joining the downwind leg.



*NAPIER TRAFFIC FOXTROT TANGO INDIA IS RIGHT HAND
DOWNWIND GRASS THREE FOUR FULL STOP.*

Although **not required** I like giving a call on final. There are 8 runways at Napier and in calm weather this may help prevent 2 aircraft landing on conflicting runways.



*NAPIER TRAFFIC FOXTROT TANGO INDIA IS FINAL GRASS
THREE FOUR FULL STOP.*

Remember to turn left after landing.

(2) **OUTBOUND.**

As before all calls are traffic calls and there will not be a reply. You are leaving Napier Airport heading South before the controller's hours of attendance.

You first call prior to taxiing to the holding point of your intended runway.



*NAPIER TRAFFIC FOXTROT TANGO INDIA IS TAXING TO
HOLDING POINT GRASS THREE FOUR.*

Next call is just prior to takeoff. You wish to head south and the most convenient way out is a left turn after climb out. The circuit for grass 34 at Napier is to the right therefore you must broadcast your left turn to inform other traffic that you are not

turning with the circuit.



NAPIER TRAFFIC FOXTROT TANGO INDIA IS ROLLING ON GRASS THREE FOUR, VACATING TO THE SOUTH, TURNING LEFT AFTER TAKEOFF.

Now takeoff, climb and turn left and when clear of the circuit set your heading south. After approx. 5 minutes give a position report.



NAPIER TRAFFIC FOXTROT TANGO INDIA IS ONE MILE SOUTH EAST OF PUKETAPU AT ONE THOUSAND FEET HEADING SOUTH.

If you are still within 10 nautical miles from the airport after another 5 minutes give another position report.

(3) EN-ROUTE CALLS.

(Basically for Cross Country flying.)

If you are on a cross country flight and your route takes you within 10 nautical miles of an uncontrolled airfield you should listen out on the appropriate frequency and if other traffic is around a position report is a good idea.



WAIPUKARAU TRAFFIC FOXTROT TANGO INDIA IS THREE MILES NORTH WEST OF WAIPAWA AT ONE THOUSAND FIVE HUNDRED FEET HEADING SOUTH.

FLIGHT INFORMATION SERVICE – COMMUNICATION REGIONS

Uncontrolled airspace in New Zealand is covered by CHRISTCHURCH FLIGHT INFORMATION. Referred to as **(FISCOM)** on the charts

The region provides radio coverage for the whole of the uncontrolled airspace below 9500ft.(above 9500ft is the UTA which is a whole new world that VFR Pilots seldom stray into.)

Various regions are covered by different frequencies so check a Visual Flight Guide etc. when planning your flight.

The VFR Navigation Chart will show you the areas covered by each region.

Your en-route calls are made to %CHRISTCHURCH INFORMATION.+



CHRISTCHURCH INFORMATION FOXTROT TANGO INDIA.



FOXTROT TANGO INDIA CHRISTCHURCH INFORMATION.



*CHRISTCHURCH INFORMATION FOXTROT TANGO INDIA IS
THREE MILES SOUTH OF RANGATIKI AT FIVE THOUSAND
FIVE HUNDRED FEET*

The reference point used in your position report must be a position shown on the VFR Navigation Chart because the FIR's are large areas and he will be using a chart to establish your position.

You can request weather information, area QNH or any other information you require. If you are on a flight plan you would make your 30 min calls to them.



FOXTROT TANGO INDIA
Remember to acknowledge their call.

If you are on a Flight Plan, Christchurch information will have been given your details and have been expecting your call.

Any information you may need en-route regarding weather changes etc can be requested from a FIR. They are there to provide a safety and information service and you should call them if problems occur rather than wait until things become serious.

If you get lost, start to lose visibility, or any of the multitude of things that can strike, if you call them they will help you. Because of difficulties in terrain, coverage by normal means is not possible in all areas. Some sectors of FIR's are covered by other means. (eg. an area north of Napier is covered by Napier Tower). Also different sectors of the FIR are covered by different frequencies.

If you are not sure check with a Control Tower to find out the FIR frequencies and coverage for your flight.

SUMMARY

After a bit of practise, using a radio is not the daunting task it first seems. IT WILL SOON BECOME YOUR FRIEND.

Just remember, especially in congested airspace, if others know you are there they probably won't bang into you and it's better to call too often than too late.

Controllers are your friends who will help you if necessary and they would rather receive too much information than not enough. Before a flight (especially a cross country) plan things. What frequencies you will use and when.

In many cases the first impression you will give to others will be the competence of your radio work.

REMEMBER THE 6 GOLDEN RULES

PROPER PREPARATION PREVENTS PISS POOR PERFORMANCE.

I hope that this has been a help in sorting out the unfamiliar world of RADIO and will provide a reference for you to get practice at home before you have the additional problem of an aeroplane. If you don't find things easy at first, remember you are in good company and only a fool will make fun if you are nervous. Most other Pilots will remember their own first efforts.

GOOD LUCK ÷ ÷ SAFE FLYING.

Flight Radio Telephone Operator

Microlight Rating Certificate Examination

Sport
Aviation
Corp Ltd

Question Booklet Sample Examination

**Sport Aviation Corp
Ltd**

A CAA Certified Part 149
Organisation
www.sportflying.co.nz

Introduction

Suggested Time: Forty Minutes
Questions: 15 multiple choice
Pass Standard: 70% (11 correct answers)
Special Instructions: Please do not mark this examination question booklet
Questions contained in this examination do not require you to read special messages identified on the Visual Navigation Chart.

This exam contains 15 questions and has a recommended sitting time of 40 minutes. The actual qualifying exam has 25 multiple choice questions and a maximum sitting time of 1 hour

Required Resources:

An AIP New Zealand Volume IV may be referred to at any time during this exam.

Appendices:

The following appendices are included at the rear of the Answer Booklet and should be used to assist answering questions in this examination. You may write on the Appendices, but must return them with the Examination and Answer Booklets at the end of the examination.

Appendix A: Matamata Aerodrome Page [Extract from AIP New Zealand Volume IV]

Appendix B: Visual Navigation Chart C3 Auckland [Extract]

Today's Flight:

- ✓ For today's exam you will be flying from Te Kowhai, an unattended airfield
- ✓ Then to Hamilton International Airport which is located in a Control Zone (CTR/D).
- ✓ After picking up your friend from Hamilton, you will fly on to Matamata. Matamata is located in a Mandatory Broadcast Zone.
- ✓ You are flying a microlight equipped with a radio and a transponder. It's registration is ZK-SBR.

Examination Questions

1. You start up at Te Kowhai and are ready to broadcast your taxi intentions. There is another aircraft broadcasting a call at a nearby airfield. What should you do?

- A) Wait for the other aircraft to complete its radio call before broadcasting your own
- B) Adjust the squelch until you cannot hear the other radio call, then broadcast your own
- C) Broadcast your radio call, local traffic will hear your call as it is the closest
- D) Taxi without broadcasting a call, but be sure to broadcast a call before taking off

2. Which of the following calls should you make to announce your taxi intentions?

- A) Te Kowhai Traffic, Sierra Bravo Romeo is taxiing runway five
- B) Te Kowhai Traffic, Sierra Bravo Romeo is taxiing runway zero-five
- C) Sierra Bravo Romeo is taxiing to runway zero-five at Te Kowhai
- D) Sierra Bravo Romeo is taxiing runway zero-five

3. You get airborne from Te Kowhai and near the edge of the Hamilton Control Zone. Before contacting Hamilton Tower for clearance, what should you do first?

- A) Contact the Hamilton ATIS Controller and ask for weather and a radio check
- B) Contact Christchurch FISCOM and ask for weather and local conditions
- C) Tune to the Hamilton ATIS and listen for weather and local conditions
- D) Tune to the Hamilton ATIS and click your transmitter four times to activate the automated broadcast

4. After obtaining the local conditions and QNH, you need to tune your radio to the appropriate frequency to request a clearance. Which frequency should you use to contact Hamilton Tower?

- A) 114.00
- B) 122.90
- C) 125.90
- D) 128.60

5. After tuning your radio to the correct frequency, you are ready to make contact with Hamilton Tower. How should you do this?

- A) Hamilton Tower, how do you read Sierra Bravo Romeo
- B) Hamilton Tower, Sierra Bravo Romeo
- C) Sierra Bravo Romeo to Hamilton Tower
- D) Hamilton Tower, Sierra Bravo Romeo is 3nm north-west of Temple View at 1,500 feet request entry clearance, 2 POB, in receipt of India 1022

6. The Tower replies *Sierra Bravo Romeo, Standby*. What action should you take in response to this instruction?

- A) Read back the instruction, "Standby, Sierra Bravo Romeo"
- B) Turn your transponder on to Standby and push the IDENT button
- C) Turn your transponder on to Standby and wait for the controller to respond
- D) Say nothing, remain clear of controlled airspace, and wait for the controller to contact you back

7. A few moments later you get cleared to enter the zone at Temple View. Temple View is marked on the map by a blue line and diamond symbol. What does this symbol indicate?

- A) A mast or tall building which poses a hazard to air navigation
- B) An area where kites and model aircraft are flown
- C) A visual reporting point, identified from the air by a large, prominent building located to the south-east of a township. It is used to aid navigation and position reporting
- D) A navigation beacon used by IFR aircraft

8. Also in the Control Zone is a vintage biplane. It doesn't have a radio, so the Tower uses light signals to communicate with it. The tower displays a series of green flashing lights. What does this instruct the vintage biplane to do?

- A) Return to the aerodrome for landing, follow the active circuit and land
- B) Return to the aerodrome for landing, clearance to land will be given later
- C) Cleared to land
- D) Danger, be on the alert

9. After stopping at Hamilton, you are ready to leave for Matamata. After starting up and using the ATIS facility, you contact the tower. The tower replies "Sierra Bravo Romeo, Hamilton Tower." How would you request a taxi clearance now?

- A) Hamilton Tower, Sierra Bravo Romeo requests taxi clearance, vacating east, 2 POB, in receipt of Juliet 1022.
- B) Sierra Bravo Romeo requests taxi clearance, vacating east, 2 POB, in receipt of Juliet 1022.
- C) Sierra Bravo Romeo requests taxi clearance
- D) Sierra Bravo Romeo is taxiing Runway 18

10. After completing take off checks and reporting ready, the Tower issues the following clearance: "Sierra Bravo Romeo, line up Runway 18, after take-off, leave the zone to the East 1,500 feet or below". After correctly reading this clearance back, what should you do?

- A) Line up on runway 18 and take off, vacate the zone at 1,500 feet or below
- B) Line up on runway 18 and wait for a take off clearance
- C) Ask for take off clearance, as the controller seems to have forgotten to issue you one
- D) Taxi to the edge of the runway and be ready to take off, only enter the runway once you have a take off clearance

11. Immediately before you take off, you should squawk the appropriate transponder code, and turn it on to Mode C/Alt. What code should a private, fixed wing aeroplane normally use?

- A) 1200
- B) 1400
- C) 2000
- D) 7700

12. You get clear of the zone, and are now ready to broadcast calls to join the circuit at Matamata. On which frequency should you broadcast these calls?

- A) 118.80
- B) 119.10
- C) 120.00
- D) 125.30

13. Radio procedure can vary depending on the type of airspace you are operating in. Matamata Airfield is located inside what sort of airspace?

- A) Mandatory Broadcast Zone
- B) Common Frequency Zone
- C) General Aviation Area
- D) Danger Zone

14. Which of the following calls should you broadcast to announce your intentions to join at Matamata Airfield?

- A) Sierra Bravo Romeo is joining overhead, presently 5 miles west at 2,000 feet
- B) Sierra Bravo Romeo is 5 miles west at 2,000 feet, making a standard overhead rejoin
- C) Matamata Traffic, Sierra Bravo Romeo is 5 miles west at 2,000 feet, joining overhead
- D) Matamata Traffic, Sierra Bravo Romeo is 5 miles west, joining overhead shortly. Is there any other traffic?

15. You arrive overhead at Matamata Airfield and you see other aircraft using Runway 28. What radio call should you broadcast to join the circuit?

- A) Matamata Traffic, Sierra Bravo Romeo is joining overhead
- B) Matamata Traffic, Sierra Bravo Romeo is overhead, descending non traffic side to join downwind Runway 28
- C) Matamata Traffic, Sierra Bravo Romeo is overhead, joining 28
- D) Sierra Bravo Romeo is overhead, joining

Flight Radio Telephone Operator

Microlight Rating Certificate Examination

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Answer Booklet Sample Examination

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Please read the following instructions and sign below before commencing the examination. Time taken completing this page is not included in the allocated time for the examination.

This exam contains 15 questions and has a recommended sitting time of 40 minutes. The actual qualifying exam has 25 multiple choice questions and a maximum sitting time of 1 hour

The maximum recommended time is forty minutes. There is no additional reading time allocated at the start of the examination.

Applicants should answer all fifteen questions. All questions are ~~multiple choice~~ Read the question and select the correct answer. Indicate your choice of answer by placing a ✕ in the appropriate box on the next page of this Answer Booklet.

Please use a blue or black ink pen. The required pass standard is 70% which requires you to correctly answer at least 11 questions. Applicants will be notified of their result in writing.

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Signature: _____

Date: _____

Answer Sheet

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
Question One	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Two	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Three	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Four	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Five	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Six	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Seven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Eight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Nine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Ten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Eleven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Twelve	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Thirteen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Fourteen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Fifteen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Sixteen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Seventeen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Eighteen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Nineteen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Twenty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Twenty-One	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Twenty-Two	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Twenty-Three	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Twenty-Four	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question Twenty-Five	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Administration Use

Name: _____

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Examination Subject:
 Flight Radio

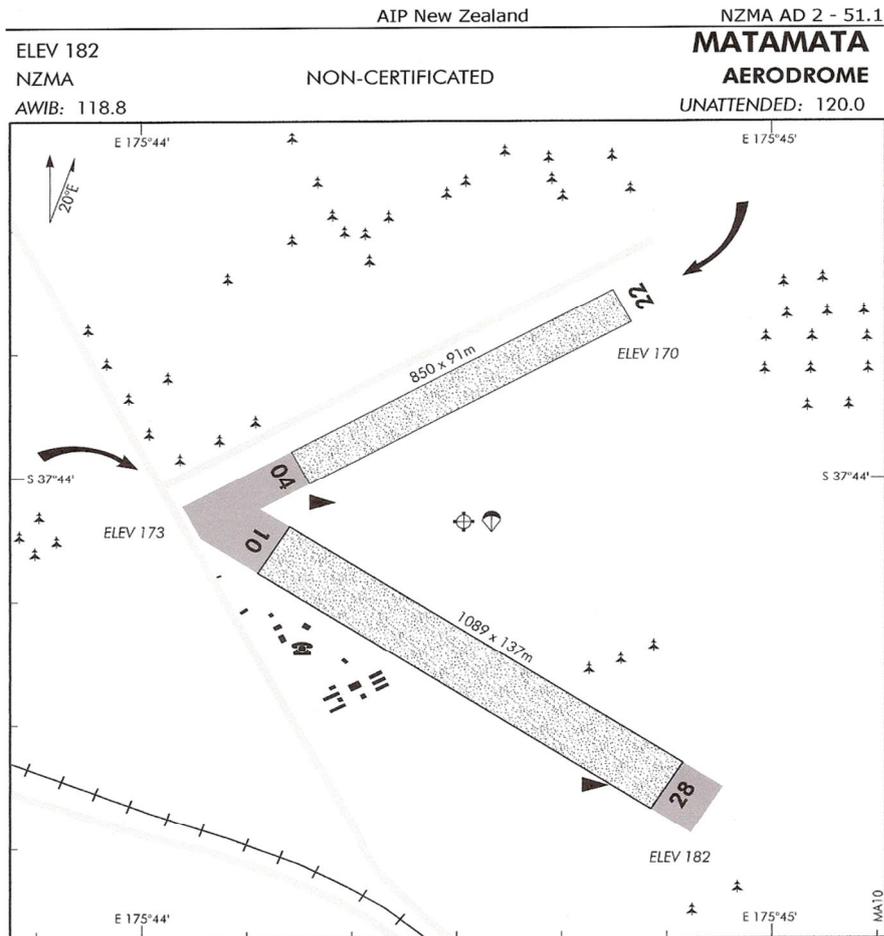
Paper Version:
 Sample

Marker's Name: _____

Answers Correct:

Result:
 PASS RESIT

Appendix A: Matamata Aerodrome Page from AIP New Zealand Volume IV (Extract)



1. Circuit Direction: RWYs 04, 28 — Left hand
RWYs 10, 22 — Right hand
2. Runways may be closed at any time for grass harvest or model aircraft operations. White crosses displayed will indicate runways closed for these purposes.
3. Intensive sporting activities take place, particularly during weekends.
4. Glider Winch Launching: Operations may take place at any time. Refer to Matamata Winch Launching Chart.
5. When "Gliding Operations" marker is displayed all parachute operations will be targeted to the PLA marker.
6. A private aerodrome located approx 0.5NM north of RWY 10 threshold necessitates extra care when operating on RWYs 10, 22 and 04.
7. Details on activities associated with the aerodrome can be obtained by contacting the appropriate operator:
Gliding: Tel (07) 888 5972
Sky Diving: Tel (029) 759 3483
Aero Club: Tel (07) 888 8011
8. Prior to start-up and taxi each pilot should make a radio call to ascertain whether there are any parachutists in the air. Aircraft within 100m of an active drop zone should have their engines turned off.

S 37 44 04 E 175 44 31

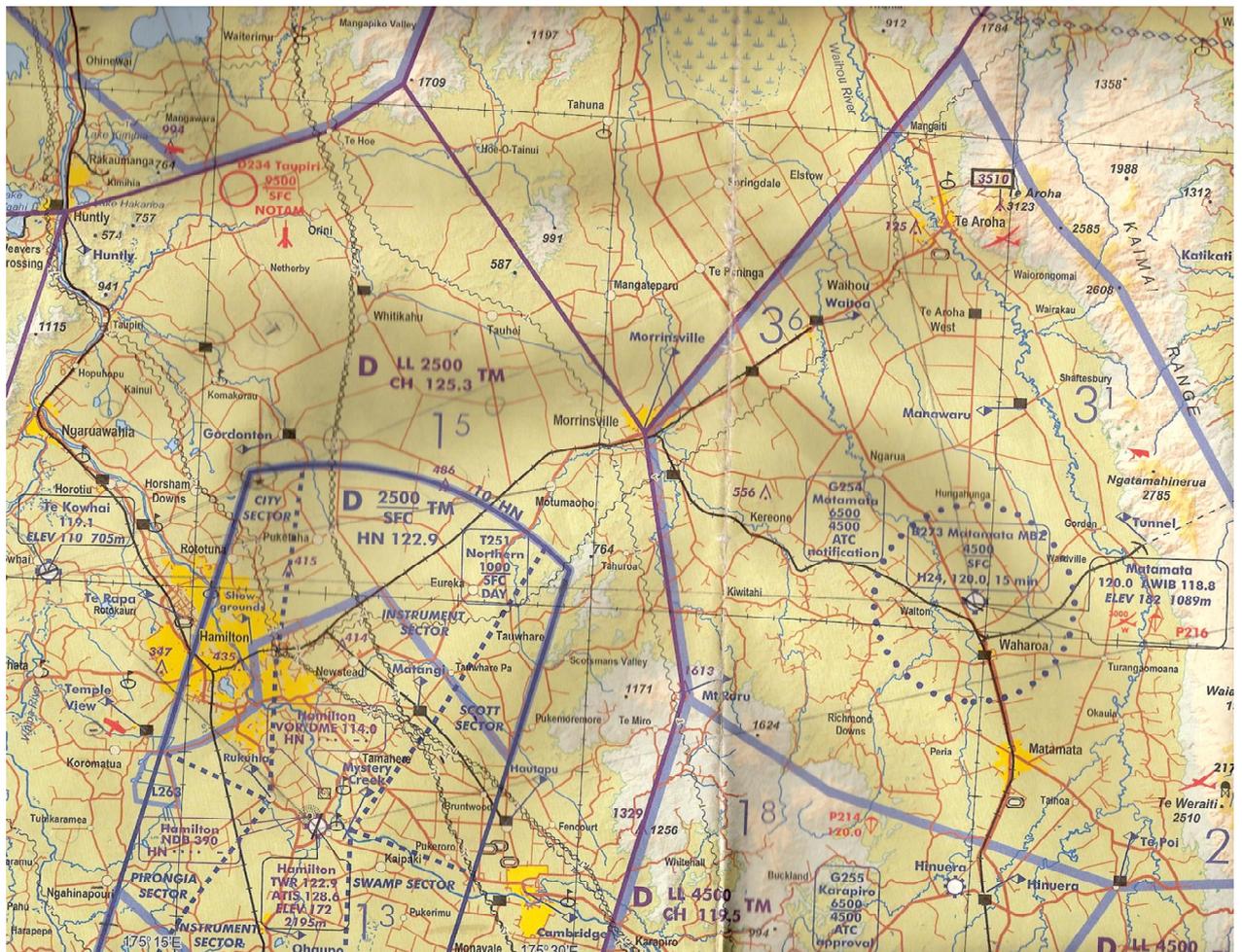
Effective: 12 APR 07

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**MATAMATA
AERODROME**

Appendix B: Visual Navigation Chart C3 Auckland [Extract]

An A3-sized, correctly scaled extract will be provided for the actual exam





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Aviation Law & Publications Sample Examination Answers

1. A
2. C
3. C
4. C
5. A
6. D
7. A
8. C
9. D
10. C
11. B
12. A
13. C
14. A
15. B

Air Navigation & Flight Planning Sample Examination Answers

1. C
2. D
3. C
4. A
5. B
6. A
7. C
8. C
9. B
10. C
11. D
12. C
13. A
14. A
15. C

Aviation Meteorology Sample Examination Answers

1. B
2. C
3. B
4. D
5. D
6. C
7. C
8. A
9. C
10. A
11. A
12. B
13. A
14. B
15. A

Aeroplane Technical Knowledge Sample Examination Answers

1. B
2. B
3. B
4. D
5. C
6. A
7. B
8. A
9. B
10. B
11. B
12. A
13. B
14. B
15. A

Flight Radio Telephone Operator Certificate Sample Examination Answers

1. A
2. B
3. C
4. B
5. B
6. D
7. C
8. B
9. B
10. B
11. A
12. C
13. A
14. C
15. C