GEN 3.4 COMMUNICATION SERVICES

1 RESPONSIBLE SERVICE

1.1 Civil Aviation Authority

1.1.1 The CAA is required to:

(a) determine the minimum level of aeronautical telecommunication services and the minimum number of telecommunication facilities to be provided by New Zealand in order to ensure the safe conduct of international air navigation in the region; and

(b) ensure those services are provided and those facilities implemented.

1.2 Civil Aviation Rules Part 171

1.2.1 CAR Part 171, Aeronautical Telecommunication Services — Operation and Certification, prescribes:

(a) Operating and technical standards for aeronautical telecommunications services and facilities; and

(b) Rules governing the certification and operation of organisations providing aeronautical telecommunication services in support of IFR flights or an air traffic service.

1.3 Service Provider

1.3.1 The Airways Corporation of New Zealand Limited (Airways) provides almost all of the aeronautical communication services in New Zealand, although there are two other organisations that hold CAR Part 171 certificates to provide limited and specific communication services.

Airways Corporation of New Zealand Ltd
PO Box 53093
Auckland 2150
NEW ZEALAND

Tel +64 3 358 1500

1.3.2 A small number of private radio aids and communications facilities (i.e. operated by organisations other than Airways) may also be operating around New Zealand at any time.

1.4 Applicable ICAO Documents

1.4.1 The ICAO Standards, Recommended Practices, and, when applicable, the procedures contained in the following ICAO documents apply in New Zealand's area of responsibility:

(a) Annex 10 Aeronautical Telecommunications

(b) Doc 7030 Regional Supplementary Procedures, Part 3

(c) Doc 7910 Location Indicators

(d) Doc 8400 ICAO Abbreviations and Codes

(e) Doc 8585 Designators for Aircraft Operating Agencies,

(f) Aeronautical Authorities and Services

1.4.2 As noted in GEN 1.7, differences from ICAO Standards, Recommended Practices and Procedures are included on the CAA website.

1.5 Hours of Service

1.5.1 The hours of service of all communication services associated with ATS are the ATS hours of operation as published in SUP and amended by NOTAM. All other communication services are H24 unless specifically noted in the ENR or AD parts of this AIP.

2 AREA OF RESPONSIBILITY

2.1 New Zealand FIR

2.1.1 Airways provides communication services throughout the New Zealand FIR (NZZC).

2.2 Auckland Oceanic FIR

2.2.1 Airways provides ATS throughout the Auckland Oceanic FIR (NZZO), except in the Cook, McMurdo, Samoa, and Tonga sectors, and at Norfolk Island.

Cook Sector

2.2.2 Responsibility for the provision of communication services within the Cook Sector of NZZO is vested in the Rarotonga ATS unit.

2.2.3 Information regarding communication services in the Cook Sector is contained in the AIP Cook Islands, and depicted on the Auckland Oceanic Enroute chart.

McMurdo Sector

2.2.4 Communication services within the McMurdo Sector (when the sector is activated) are provided by the US Navy facility at McMurdo, to aircraft supporting the US Antarctic programme.

2.2.5 Information regarding communication services in the McMurdo Sector is contained in the relevant US aeronautical publications.

Samoa Sector

2.2.6 Responsibility for the provision of communication services within the Samoa Sector of the Auckland Oceanic FIR is vested in the Faleolo ATS unit.

2.2.7 Information regarding communication services in the Samoa Sector is contained in the AIP Samoa, and depicted on the Auckland Oceanic Enroute chart.

Tonga Sector

2.2.8 Responsibility for the provision of communication services within the Tonga Sector of the Auckland Oceanic FIR is vested in the Fua'amotu ATS unit.

2.2.9 Information regarding communication services in the Tonga Sector is contained in the AIP Tonga, and depicted on the Auckland Oceanic Enroute chart.

Norfolk Island

2.2.10 Norfolk Island is contained within NZZO and administered by Australia.

2.2.11 For communication services within the Norfolk Island MBZ refer to the Australian AIP.

3 TYPES OF SERVICE

3.1 Radio Navigation Services

3.1.1 The following types of radio aids to navigation operate within the New Zealand FIR and Auckland Oceanic FIR:

(a) MF Non-Directional Beacons (NDB)

(b) Marine Radio Beacons D

(c) VHF Omni-Directional Radio Range (VOR)

(d) Distance Measuring Equipment (DME)

(e) Instrument Landing System (ILS)

3.1.2 Also operating within the New Zealand FIR are:

(a) Primary Surveillance Radar (PSR)

(b) Secondary Surveillance Radar (SSR)

(c) Automatic dependent surveillance — broadcast (ADS-B)

(d) Multilateration (MLAT)

MF Non-Directional Beacons (NDB)

3.1.3 There are a limited number of MF frequencies available in New Zealand, and the same frequency may be allocated to two or more beacons. Where this occurs, such beacons are widely spaced geographically to minimise any mutual interference.

3.1.4 The rated coverage of an NDB provides a radial distance from the beacon within which usable guidance may be obtained under normal conditions. Rated coverage and known limitations are listed in Table GEN 3.7-1. Variations in rated coverage resulting from changes in propagation, atmospheric noise, and night effect will occur.

3.1.5 Night effect may substantially reduce the coverage of an NDB as a result of interference between the ground waves, (received by direct path) and the sky waves (received after being reflected off the ionosphere).

Marine Radio Beacons

3.1.6 **CAUTION:** Marine radio beacons should not to be used for primary aeronautical navigation.

3.1.7 New Zealand maritime authorities maintain two marine radio beacons (NDBs), for ships MF DF calibration purposes, at Mokohinau Island and Dog Island. The beacons — and other marine NDBs around New Zealand that are being phased out — are shown on some aeronautical charts but they should not be used as a primary means of aeronautical navigation.

3.1.8 The beacons are not subject to flight or ground inspection by aeronautical authorities and NOTAM will not be issued concerning their serviceability.

Broadcast Stations

3.1.9 Broadcast stations are not authorised for use in IFR procedures.

D

VHF Omni-Directional Radio Range (VOR)

3.1.10 VOR operate in the frequency band 112–118 MHz. VOR radials are designated by the magnetic bearing of the radial from the station to the aircraft. Thus the 090 radial lies east of the station.

Distance Measuring Equipment (DME)

3.1.11 DME operate in the frequency band 962–1213 MHz. DME channels are "paired" with VOR frequencies. Many airborne installations require the VOR frequency to be selected in order to select the DME. The FREQ or CHANNEL listing in Table GEN 3.7-1 shows the paired VOR frequency, even for locations where only a DME is installed.

3.1.12 Where installed, DME channels are also paired with LOC frequencies.

3.1.13 Brief erroneous indications, caused by shading of the signal below IFR altitudes or by the complex processing used in some airborne equipment, can occur. DME distance indications should be clear and unambiguous for at least 15 seconds before being used for operational purposes.

Instrument Landing System (ILS)

3.1.14 ILS localisers (LOC) operate in the frequency band 108–112 MHz. Localiser coverage is not provided outside the sector of 35 degrees either side of the front course line.

3.1.15 Where installed, DME are paired with the LOC.

3.1.16 ILS glide path equipment operates in the frequency band 328.6 –335.4 MHz. The glide path frequency is "paired" with the LOC frequency.

3.1.17 ILS Markers operate on a frequency of 75 MHz.

3.1.18 Details of specific New Zealand ILS installations and known limitations are contained in Table GEN 3.7-1.

3.1.19 **CAUTION:** The following applies to the use of ILS outside Tower hours of watch (also refer ENR 1.5 4.28 IFR Arrival Procedures — Unattended Aerodromes):

(a) The ILS will be set to one runway only and cannot be changed by ATS unless a remote ILS switching procedure is available for that aerodrome. Approach units will be aware of which runway is selected and if it may be changed remotely.

(b) If using a remote QNH (ENR 1.5 section 4.25 refers) a glide path verification check will not be achieved to the same accuracy.

(c) Protection zones for the LOC and GP elements may not be protected from aircraft or vehicle intrusion which may cause course disturbances.

(d) ATC will not be able to notify change of equipment status if the aircraft is operating on the unattended frequency for that aerodrome.

3.1.20 Navigation facilities are contained in Table GEN 3.7-1.

3.2 Navigation Aid Identification

3.2.1 Radio navigation aids for general use are identified by a two letter identifier, normally taken from the name of the location concerned, e.g. **WN** = **W**ellingto**N**.

3.2.2 For ILS/Localiser and associated DME installations, the letter "I" precedes the two-letter identifier.

3.2.3 Non-Airways radio aids that are restricted on operational grounds to specific users are identified by a three-letter identifier.

3.3 Mobile/Fixed Services

Mobile services

3.3.1 Mobile services are as follows:

(a) Air–ground communications in the New Zealand FIR and Auckland Oceanic FIR are conducted by radiotelephony (RTF) in the VHF, UHF and HF frequency bands. Air–to–air communications are conducted in the VHF band.

(b) VHF is the primary frequency band for domestic operations, with HF available in the Southland/Fiordland area only. UHF is intended primarily for use with military aircraft. At some locations, re-transmission facilities are provided to link two or more VHF and/or UHF channels together or to remote the service to another ATS unit.

(c) Radio communications facilities and frequencies are provided in GEN 3.7, and on charts.

(d) All ATS units are equipped with automatic recording facilities that record all communications to and from each ATS unit, irrespective of the medium used.

3.3.2 A diagrammatic representation of the ATS speech circuits is provided in Figure GEN 3.4-1.

Flight Information Service Communications (FISCOM)

3.3.3 FISCOM charts for the North Island and South Island are shown in Figures GEN 3.4-2 and GEN 3.4-3 respectively. These charts show theoretical VHF coverage at 4000 ft AMSL or at the annotated altitude. Borders shown between adjacent areas of VHF cover, and those that annotate areas of unreliable cover, are approximate. FISCOM information is also available on VPC and VNC.

3.3.4 For information on Flight Information Service Broadcasts (FISB) see GEN 3.4.

Air–ground Services

3.3.5 In addition to flight service stations, the following aeronautical stations provide air–ground communications services and perform other specific functions:

(a) Auckland Radio;

(b) Chatham Islands Radio; and

(c) McMurdo Centre.

Auckland Radio

3.3.6 Auckland Radio maintains an air–ground service for international and domestic flights providing receipt and relay of:

(a) position reports;

(b) meteorological information;

(c) ATC clearances; and

(d) associated flight information.

3.3.7 Selective Calling (SELCAL) facilities are available through Auckland Radio.

Chatham Islands Radio

3.3.8 Chatham Islands Radio is an A/G service provided by Chatham Islands Airport Limited.

McMurdo Centre

3.3.9 McMurdo Centre provides an A/G service operated by the US Navy facility at McMurdo.

Datalink Communications

3.3.10 Auckland Oceanic Control has installed an automated Oceanic Control System (OCS) that is fully FANS 1/A compliant. The Logon address is "NZZO".

3.3.11 Auckland Oceanic control will accept:

(a) Automatic Dependent Surveillance — Contract (ADS-C) position reports; and

(b) Controller Pilot Datalink Communications (CPDLC). SELCAL checks by CPDLC equipped aircraft are not required when entering NZZO FIR. Aircraft filing a SELCAL code in item 18 of their flight plan will be assumed to have a serviceable SELCAL and to be maintaining a SELCAL watch on the HF primary frequency advised in the appropriate MONITOR instruction passed by the transferring CPDLC authority.
Note: *There is no requirement for FANS 1/A aircraft entering NZZO FIR to contact Auckland Radio for a SELCAL check.*

3.3.12 The following datalink services are available for ED-89A enabled aircraft:

(a) D-ATIS. Details of locations and hours of operation are provided in Table GEN 3.7-1.

3.3.13 DCL is available to departing IFR aircraft at Auckland, Wellington, Christchurch, Queenstown, Dunedin and Woodbourne aerodromes. The logon address, if required, is the ICAO location indicator for the departure aerodrome (e.g. NZAA). This service is available to:

(a) ED-85A enabled domestic IFR flights that file a flight plan with an ATS preferred route (using a designator or the full route equivalent) for the aerodrome of departure.

(b) ED-85A enabled international IFR flights that file a flight plan with a requested flight level above FL250.

SATCOM Communications

3.3.14 SATCOM communications may be used to contact both Auckland Oceanic and Christchurch Air Traffic Centre when the primary means of communication is either not available or an Urgent / Emergency situation arises.

(a) Auckland Oceanic Non-Urgent Requests and Position Reports
SATCOM: Inmarsat Short Code 451201
Tel +64 9 275 3589
Tel +64 9 275 9335

(b) Auckland Oceanic Emergency / Urgent Contact
Tel +64 9 275 9817 — *this will be answered by the Oceanic Controller*

(c) Christchurch Air Traffic Centre
SATCOM: Inmarsat Short Code 451202
Tel +64 3 358 1694

Air-to-air Communications

3.3.15 In the Asia and Pacific regions the frequency 123.45 MHz is available for exclusive use as an air–to–air communications channel over remote and oceanic areas out of range of aeronautical ground stations to exchange necessary operational information and to facilitate the resolution of operational problems.

3.3.16 The aircraft to aircraft chat frequency within the New Zealand FIR is 128.95 MHz. In uncontrolled airspace, if not within an MBZ/CFZ, operate on the appropriate FISCOM frequency.

Universal Communication (UNICOM) Services

3.3.17 UNICOM is not an air traffic service. UNICOM is an air/ground communications facility providing an information service at aerodromes with no aerodrome control or aerodrome flight information service.

3.3.18 UNICOM is provided at Ardmore aerodrome by Ardmore Airport Limited and Whanganui aerodrome by Whanganui airport.

3.3.19 Information provided may include:

(a) current aerodrome information and conditions;

(b) basic weather information such as:

(i) wind direction and strength;

(ii) visibility;

(iii) cloud cover;

(iv) temperature; and

(v) QNH (if from a CAR Part 174 certificated source) or mean sea level pressure.

(c) meteorological reports (subject to certification under Civil Aviation Rules Part 174);

(d) Aerodrome and Weather Information Broadcasts (AWIB).

3.3.20 The UNICOM operator may also provide other ancillary services.

Aerodrome Frequency Response Unit (AFRU)

3.3.21 An AFRU is a unit that provides confirmation to pilots that they have selected the correct aerodrome frequency, and that their aircraft radio is operating correctly. It may operate as a supplementary device to a ground facility (UNICOM) operating on the aerodrome frequency, or it may be the sole ground communications device.

3.3.22 If an aircraft operating within radio range of the AFRU makes a transmission on the aerodrome frequency, the AFRU will detect the transmission and automatically respond on the frequency with either:

(a) a pre-recorded voice message, (normally the aerodrome location and frequency) if no aircraft transmissions have been received in the period (typically 5 minutes) preceding the transmission; or

(b) a short tone burst if any transmissions have been received in the preceding period.

Aeronautical Fixed Service

3.3.23 The Aeronautical Fixed Telecommunications Network (AFTN) is primarily established for ATS unit intercommunication. Subject to certain provisions, the AFTN may be used to transmit messages concerning flight safety, flight regularity, reservation, and general operating agency matters.

3.3.24 A diagrammatic representation of the AFTN circuits is provided in Figure GEN 3.4-4.

SELCAL

3.3.25 SELCAL is utilised in HF air–to–ground communications. When SELCAL equipment is installed in an aircraft it enables an aeronautical ground station to call that aircraft only, using a combination of four audio tones that activate lights and/or chimes in the aircraft. Aircraft equipped with SELCAL consequently need not keep a listening watch on the aeronautical frequency in use unless desired.

3.4 Broadcasting Services

Meteorological Information for Aircraft in Flight (VOLMET)

3.4.1 VOLMET broadcasts contain selected meteorological information transmitted on discrete HF ground–to–air frequencies. Details are in GEN 3.5.

Automatic Terminal Information Service (ATIS)

3.4.2 ATIS is a continuous broadcast of the operational information provided by an ATS, and normally supplied to aircraft prior to take-off or landing. It is transmitted on a discrete VHF frequency. Details of frequencies and hours of operation are provided in Table GEN 3.7-1. Active ATIS broadcasts are also available on IFIS.

Aerodrome and Weather Information Broadcasts (AWIB)

3.4.3 An AWIB is an automated broadcast on a specified frequency at some unattended aerodromes. It relays information on meteorological and operational conditions that are obtained from automatic sensors and manual observations.

3.4.4 An AWIB is not provided by an air traffic service and is therefore not required to have the same standard of accuracy as an ATIS does.

3.4.5 The following information (which may be obtained from automatic sensors, manual observations, or a combination of both, and may vary with location) may be broadcast by an AWIB:

(a) Preferred runway–in–use;

(b) Other operational information;

(c) Wind direction and strength;

(d) Visibility;

(e) Cloud cover;

(f) Temperature;

(g) QNH (if from a CAR Part 174 certificated source) or mean sea level pressure.

3.4.6 Pilots should note that MET information may not necessarily be representative of the conditions in the vicinity of the runway because of the siting of the AWS and the area of scan.

3.4.7 Frequencies and hours of operation for AWIB are provided in Table GEN 3.7-1.

Flight Information Service Broadcasts (FISB)

3.4.8 FISB are made from locations depicted on the FISCOM charts provided in Figures GEN 3.4-2 and GEN 3.4-3.

3.4.9 FISB relieve RTF congestion on ATS frequencies, and provide information detailed in Table GEN 3.4-1.

3.4.10 Broadcasts are prefixed by the designator *(location)* FLIGHT INFORMATION, and commence as indicated below. Operational information may vary at short notice.

3.4.11 Since these broadcasts are made on VHF frequencies, the coverage of the service will depend on the height of the receiving aircraft and intervening terrain.

Table GEN 3.4-1
Flight Information Service Broadcasts

Callsign	FREQ MHz	Transmitter location	METAR/ SPECI	TAF	MOA/Danger Area
Ohakea❶	124.5❷	Ohakea aerodrome	Nil	Nil	NZM306 Raumai

❶ Status of NZM306 broadcast continuously.

❷ Available also via telephone 06 351 5477.

3.5 Language Used

3.5.1 The English language is used for all air–ground RTF communications within the New Zealand FIR and the Auckland Oceanic FIR.

3.6 Radiotelephony Phraseology

3.6.1 Details of phraseologies to be used by pilots and ATS are contained in AC 91-9/172-1 Radiotelephony Manual.

3.7 CPDLC Messages

3.7.1 Details of CPDLC message elements and sets are listed in ICAO Doc 4444 and the Global Operations Data Link (GOLD) document.

3.8 DCL

3.8.1 DCL is initiated by pilot request via datalink. Request shall be made within 25 minutes of filed EOBT and prior to engine start. ATC will respond upon receipt of the request.

3.8.2 For the DCL CLD (ATC Clearance) message the following elements will be included as appropriate in the RMK (remark) field:

(a) Route:

(1) Standard instrument departure (SID) transition, preceded by a full stop (.)

(2) Enroute instructions, as one of:

(i) Flight planned route (FPR);

(ii) SRC designator;

(iii) Waypoints and/or airway designators;

(iv) Waypoints and/or airway designators, followed by FPR.

(3) Standard arrival (STAR), preceded by STAR transition with both separated by a full stop.

For example:

"ROUTE:FPR"	*No SID transition, flight planned route, no STAR*
"ROUTE:.SABDA FPR"	*SID transition+ flight planned route*
"ROUTE:.AVPOD.AVPOD1J"	*SID transition+ STAR with same transition*
"ROUTE:.NUKLO FPR GUSDU.GUSDU2A"	*SID transition+ flight planned route + STAR*
"ROUTE:.SNAPA Q438 IGUTA Y175 OMKUN FPR"	*SID transition+ route details + flight planned route (used for runway dependent routes after runway change)*

(b) Cleared flight level (FL), except for international flights when this element is included in the SID description.

3.8.3 Inclusion of pilot remarks in the Clearance Request (RCD) may result in a delay before the clearance is issued.

3.8.4 DCL is a 'one-time' clearance delivery function. After the successful completion of DCL any further amendments to a clearance must be conducted by voice (RTF) on the applicable frequency.

3.8.5 The DCL exchange of ATIS does not meet CAR 172.103 requirements for ensuring receipt of the appropriate aerodrome QNH altimeter setting. On first contact with Delivery or Ground confirm the current ATIS QNH.

3.9 Detailed Information

3.9.1 Detailed information on communication services can be obtained from the following references within this AIP:

(a) Communication including controlling authority and operating frequency are provided in separate parts:

  (i) Enroute communication information is included in the Airspace and ATS Routes tables in ENR 2 and ENR 3.

  (ii) Terminal communication information is included in AD 2 for individual aerodromes.

(b) Radio navigation is provided in separate parts:

  (i) Enroute information is listed in ENR 4.

  (ii) Terminal information is included in AD 2 for individual aerodromes.

4 Requirements and Conditions

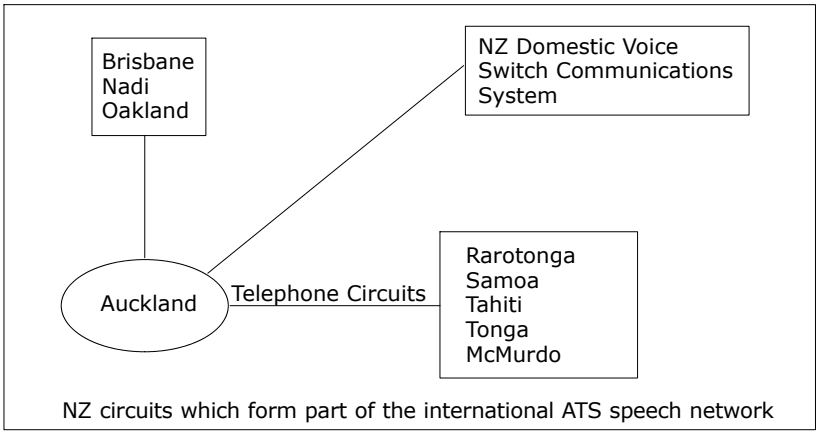
4.1 General

4.1.1 CAR Part 171, which is available on the CAA website, prescribes rules governing:

(a) the certification and operation of organisations providing aeronautical telecommunication services in support of IFR flight or an ATS; and

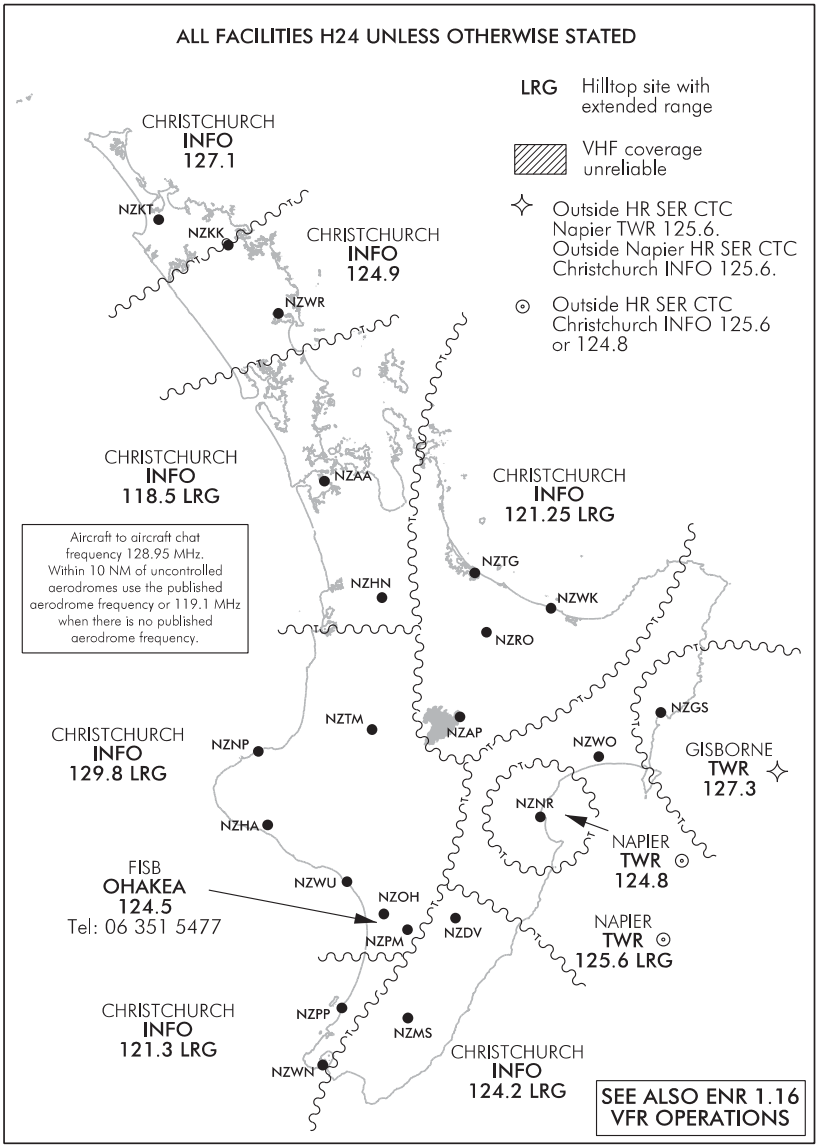
(b) the operating and technical standards for facilities operated by those organisations.

Figure GEN 3.4-1
ATS Speech Circuits



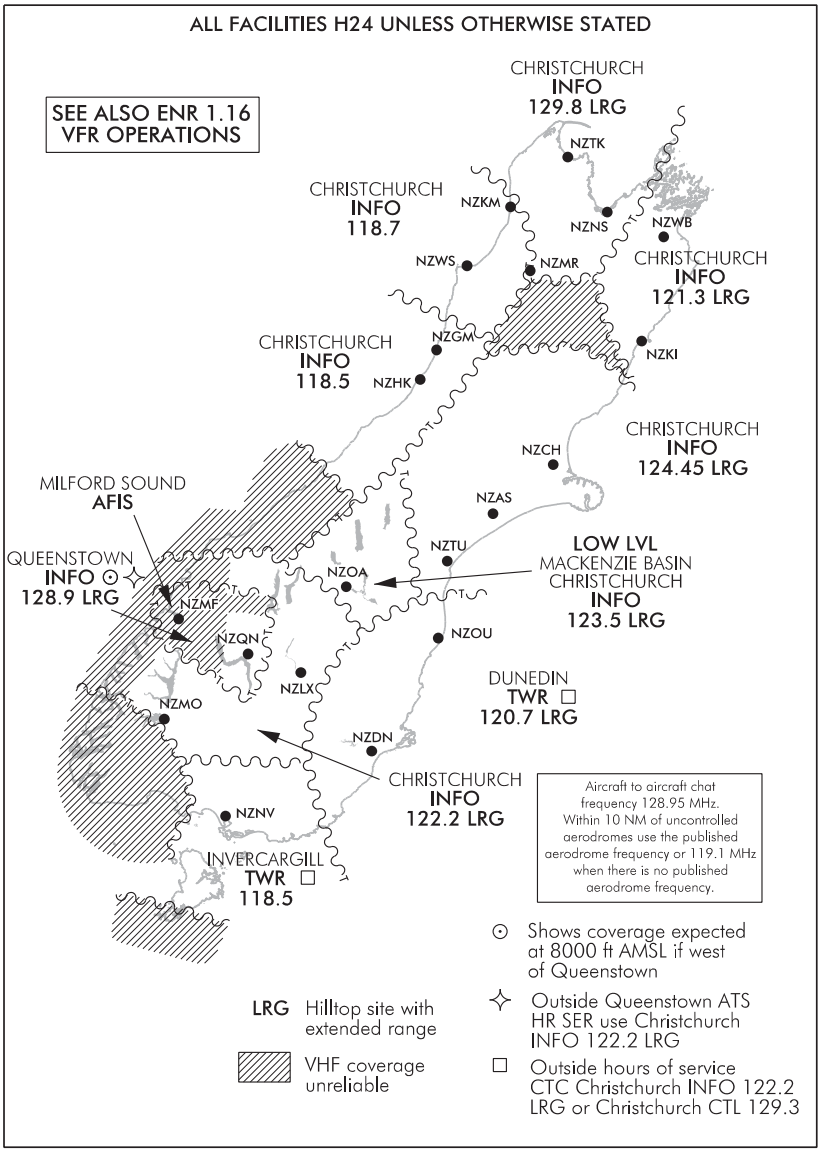
NZ circuits which form part of the international ATS speech network

Figure GEN 3.4-2
North Island FIS COM Chart



SHOWS EXPECTED COVERAGE AT 4000 FT AMSL. IF NO RESPONSE ON SELECTED FREQUENCY TRY ADJACENT LRG FREQUENCIES.

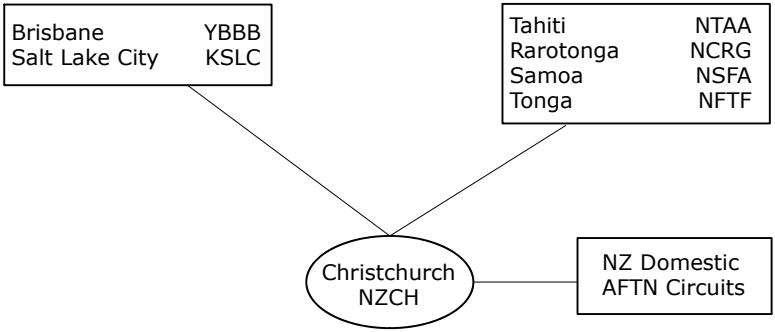
Figure GEN 3.4-3
South Island FIS COM Chart



Changes from 28 NOV 24: 118.5 and 118.7 boundary on West Coast moved north of NZGM.

SHOWS EXPECTED COVERAGE AT 4000 FT AMSL. IF NO RESPONSE ON SELECTED FREQUENCY TRY ADJACENT LRG FREQUENCIES.

Figure GEN 3.4-4
AFTN Circuits



NZ circuits which form part of the international AFTN

Changes from 4 SEP 03: Nadi deleted.

5 FACILITY MALFUNCTION REPORTING

5.1 Reporting of Facility Malfunctions

5.1.1 Procedures and contact details for the reporting of facility malfunctions are included in ENR 1.14.