Queenstown – Milford

Resident Aircraft

User Group

-QMUG-

Operations Hand Book

REVISION STATUS

Revision 0   Effective 1st July 2012
Revision 1   Effective 1st Jan 2014
Revision 2   Effective 1st Apr 2016

Revision 1 Changes

Contents – Section numbers changed to include a 'QMUG Specific Procedures' section.

5 List of User Group Members – Name Changes

6.1 Milford Sound Helipads - Helicopter Departure and Arrival Procedures Added

7.1 Milford Sound Aerodrome – Amended to include the preferred Eastern Passes procedure of arriving via the Donne Saddle and departing via the Adelaide or Homer.

Revision 2 Changes

5 List of User Group Members – Name and contact details

6.1 Milford Sound Helipads – Helicopter Departure and Arrival Procedures
                              - Helicopter Passenger routes

7.1 Milford Sound Aerodrome – updated arrival and departure procedures including heights, parking on the apron, hot loading of aircraft

7.3 Walter Peak Airstrip – Removed from handbook as Milford Sound Flights is no longer the contact.

8.1 Helicopter landing sites – A few more common sites have been added

9.11 Radio communication

15b Passenger weight survey removed, this was never ratified in writing by the NZ CAA

INTRODUCTION

This Operations Hand book has been compiled by the Queenstown Milford User Group as supplementary information for -

- Operators
- Pilots
- And other interested parties

Conducting flight operations in the Queenstown FIR and predominantly within the -

- Queenstown *Control Zone (CTR)*,
- Fiordland *Common Frequency Zone (CFZ)*
- And Milford Sound *Common Frequency Zone (CFZ)*

And is not a substitute or replacement for -

- The CAA Rules
- Individual company Operations Manuals
- Current Airways maps and charts
- And Good Airmanship

This Manual is not to be copied by any third party without the approval of the Queenstown Milford User Group.

However it is available for use and distribution to any operator intending to fly within the Queenstown FIR.

Distribution may be by hardcopy or electronic copy. It is the responsibility of the end user to ascertain the currency of the information contained within this publication. Confirmation of the current revision of this Hand Book can be found at www.qmug.org.nz

Each holder of a copy of this publication should inform the Group Chairperson of their contact details so they can be notified of amendments.

Definitions

Aircraft
When the word aircraft is used throughout this Handbook it can be read as pertaining to both Helicopter and Aeroplane, otherwise the word Helicopter or Aeroplane will be used when the information or procedure is type specific.

Privacy

Any company or personal contact details provided in this publication are to be used for User Group business only

CONTENTS

1. REFERENCES

The following references have been used to compile this manual -
- The CAA Rules
- AIP Volume 1 & 4
- Airways Maps and Charts
- Minutes from past meetings of the Queenstown Milford User Group
- Department of Conservation Publications
- The Fly Neighborly Guide (Helicopter Association International)
- AIRCARE™ Environmental Code of Practice
- Individual Operator SOP's
- Ministry of Transport - HSE Manual for Milford Sound aerodrome
- Queenstown Airport Corporation – Noise Management Plan
- CAA GAP Booklet: *In, Out and around Milford Sound*
- CAA GAP Booklet: *In, Out and around Queenstown*

2. AMENDMENTS

2.1   This handbook contains only information of an advisory nature.

2.2   The currency of each page appears in the lower right hand corner.

2.3   Each holder of a copy of this publication should inform the user group chairperson of their contact details, preferable email, so they can be notified of amendments.

2.4   Requests for changes of information or corrections to this book are to be made to the current QMUG Secretary qmugsec@orcon.net.nz .

2.5   Amendments will be posted or emailed to each operator following a change in an operating procedure within the Queenstown FIR.

2.6   Holders of copies of this Hand Book need to check the currency of any information contained within before use. Confirmation of the current revision of this Hand Book can be found at www.qmug.org.nz

3. THE QUEENSTOWN MILFORD USERS GROUP

3.1   The Queenstown Milford Users Group was formed in 1990 to promote safety for those Aircraft operators operating within the Queenstown FIR.

It primarily consists of:
- Local Aircraft Operators
- Local Sport Aviation Operators
- Civil Aviation Authority of New Zealand
- Airways Corporation of NZ (Queenstown)
- Queenstown Airport Corporation
- Ministry of Transport
- The Department of Conservation

3.2   It is of a non-regulatory nature providing a safety culture for the operators within the Queenstown FIR.

3.3   It also provides a relationship between the Department of Conservation and the operators to ensure a minimal impact is maintained within National Parks and with other operators and users of the Parks **by preserving Amenity values**.

3.4   Meetings will take place approximately every six months, generally before and after the summer season. Additional meetings will be held as required to deal with specific issues.

3.5   The Secretary shall send out a notice of the meeting prior to the date and call for agenda items.

3.6   The Secretary shall maintain an accurate copy of all meeting minutes and email a copy of the minutes to all the members of the User Group.

3.7   A copy of the Groups constitution is appended to this document **Section 15A**

4a. MISSION STATEMENT

Aviation allows large numbers of people of all ages and physical ability, who, in most cases would never otherwise have the opportunity to; experience our remoter alpine regions without leaving any lasting trace and without requiring any infra-structure such as huts, tracks or toilets.

The Group's policy is to actively foster aviation, and to cultivate and maintain an environmentally aware culture, in particular awareness and consideration of potential disturbance to the values of ground based users.

4b. CODE OF PRACTICE

1 *To develop and maintain an environmentally aware culture, in particular an awareness and consideration, at all times, of potential disturbance to ground based users.*

2. *To consider environmental effects when selecting aircraft types, in particular noise emission and aircraft capacity.*

3. *To develop and regularly review aircraft operating procedures that minimise noise emission, particularly in sensitive localities.*

4. *When safe and practicable, to follow flight paths that minimise impact on the environment.*

5. *Pursue a policy of high and wide flight clear of sensitive areas and in particular strict observance of minimum vertical and horizontal clearances in the vicinity of identified ground user sensitive areas.*

6. *Each resident operator is to elaborate in their exposition how they specifically embody this code of practice and the* AIRCARE™ *system in their operation*

5. List of User Group Members

Company	Contact	email	Phone/ *Fax*	Postal address
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Classic Flights	Peter Hendriks	info@classicflights.co.nz	**P 03 443 4043**	PO Box 773 Wanaka
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6. HELIPORTS

6.1 Milford Sound NZMF

Operating Procedures as published in the AIP and as below
Operated by Ministry of Transport Ph. 04 4399354
Heliport is situated at the head of Milford Sound adjacent to Runway.
Comms: Milford Flight Service **118.2 MHz**
                    Milford Flight Service Ph. 03 249 8092

Arrivals

- Arrivals from the East are to use the Upper Donne or Darren Pass (when possible) to call MF approaching Gulliver
- A straight in approach from the eastern passes is acceptable when Flight service is on watch provided there is no disruption to other circuit traffic. Straight in approaches from the east are not to be used outside Flight service hours of watch
- When entering MF from the South West, you are to be 1500ft or below by ADA. If joining, a left base 29 or right base 11 is acceptable when Flight Service is on watch and if there is no disruption to the circuit traffic.
- An overhead join **must** be used when Flight Service is off watch.

Helicopter 29 Departure

- ▪ 1. Climb straight ahead to 500ft then turn left to follow the circuit pattern, vacating East.
- ▪ If traffic flow inbound to the circuit is heavy, a right turn is preferred to avoid climbing into the downwind traffic. (Milford Flight Service must be on watch and advised to do this)
- ▪ 2. Climb off Rwy 29 to 500ft, drifting right on track to Harrisons Cove.
- ▪ Departures to the East to vacate via Homer Saddle or Adelaide Saddle (when possible)
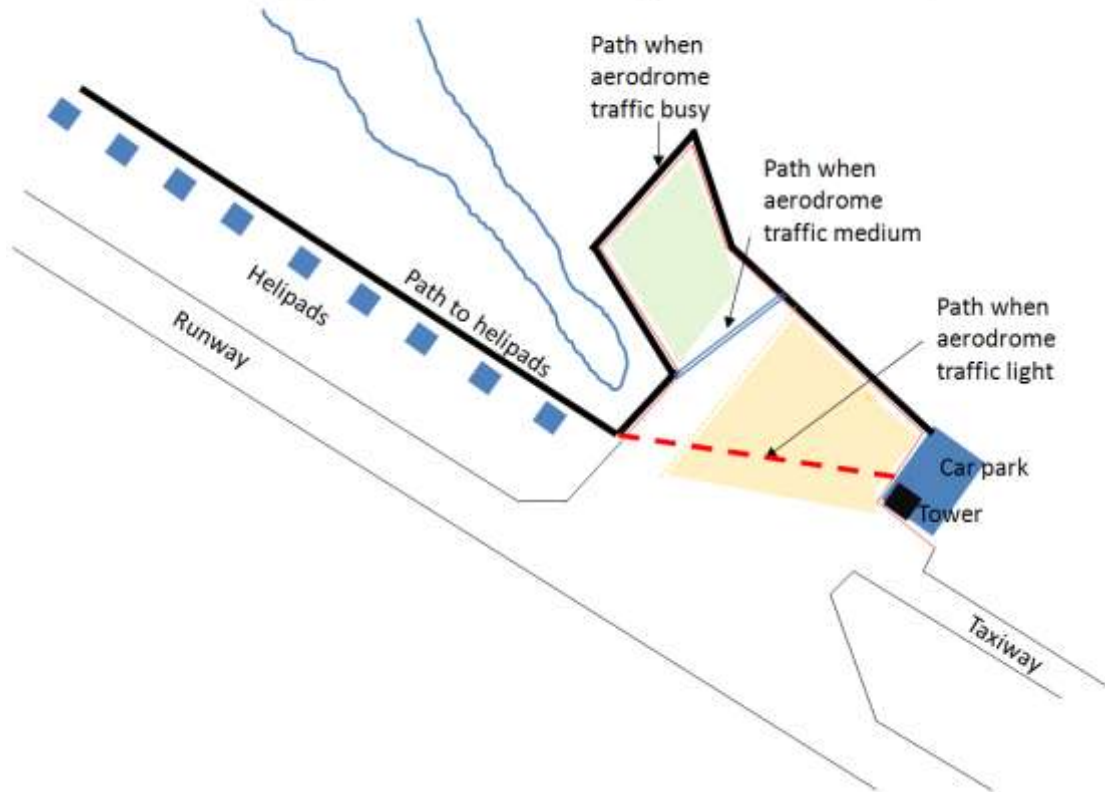
Avoid vacating right off 29 to the Bowen Falls and then East, unless necessary for photography, filming etc. If doing this, advise MF Tower of these intentions.

Helicopter 11 Departure

- ▪ 1. Climb East, remaining on the Southern side of the Cleddau Valley
- ▪ 2. Make a non-standard right turn (advise the tower) and vacate via the Arthur Valley
- ▪ 3. Make a left turn off 11 to vacate via the circuit pattern.
- ▪ Departures to the East to vacate via Homer Saddle or Adelaide Saddle (when possible)

Helicopter Passenger Routes

Passenger routes to/from helipads

Path when aerodrome traffic busy

Path when aerodrome traffic medium

Path when aerodrome traffic light

Helipads

Path to helipads

Runway

Car park

Tower

Taxiway

Traffic	Definition	Route Guidance
Busy	Fixed wing aircraft operating on Main and North West apron	Must go around entire apron (black line) ▬▬▬
Medium	Fixed wing aircraft operating on Main apron	Cross the North Western Apron (Double blue line) ═══
Nil	All fixed wing aircraft on Main and North west Apron shut down and none about to start.	May cross the apron to car park (Dashed red line) ▬ ▬ ▬

7. AERODROMES

7.1 Milford Sound Aerodrome NZMF

Operating Procedures as published in the AIP
Operated by Ministry of Transport Ph. 04 4399000
Aerodrome is situated at the head of Milford Sound.
Comms: Milford Flight Service **118.2 MHz**
             Milford Flight Service Ph. 03 249 8092

Recommended Practices;

South Easterly operations Aeroplanes
- Chief Pilots have agreed to operate with a guideline of 10 knots of steady SE wind at Milford Sound aerodrome with a maximum gust factor no greater than 15 knots. Outside these parameters the operators should consult.

Arrivals
- Loaded aircraft to descend via the Mouth of the Sound and remain in the flow
- Traffic from the Arthur Valley join overhead or in sequence
- A straight in approach from the eastern passes is acceptable when Flight service is on watch provided there is no disruption to other circuit traffic. Straight in approaches from the east are not to be used outside Flight service hours of watch
- Arrivals from the East are to use the Upper Donne or Darren Pass (when possible)

Departures
- Enter the Arthur Valley if possible at 3000ft but not above due inbound traffic from the east. If unable to reach 3000ft, maximize height tracking as far as the Williamsons/Pater point line. Aim to be at Ada not above 5000ft when Mouth South Departures in place.
- Use Green Valley to obtain altitude to cross Balloon Pass 5000ft or above
- Use West Branch Clinton Valley via McKinnon Pass only if weather or operational need require
- Departures to the East to vacate via Homer Saddle or Adelaide Saddle (when possible)

- Mouth South, when weather allows climb to Mouth of sound to be at or above 3000ft by St Anne Point, then track south via Transit valley until sufficient height is gained to track east and cross overhead Ada or south of at 5500ft or above.

Noise Abatement
- Be considerate with flight paths, engine power settings and height
- Avoid popular walking tracks / passes / climbing areas where possible or maximize height

Milford Sound Apron Procedures
- No aircraft to park in front of Tower
- Aeroplane parking pattern as shown below

YELLOW LINE

←———————————— **TWINS** ————————————→   ←———————————— **SINGLES** ————————————→

All twin-engine aeroplanes start parking from the left hand end of the yellow line moving from left to right. All single engine aeroplanes start parking from the right hand end moving from right to left. When the row is full, continue with the same principle on the next row dovetailing aircraft until rows are full.

- Pilots who are not busy may assist in moving aircraft if another is boxed in
- No nose to tail parking
- No angle parking except in north-western apron
- Use close spacing
- For short term parking, (quick turnaround) use north-western apron
- Milford Sound Flights to direct passengers straight to pilots and then to aeroplane
- Photography on apron areas to be discouraged
- When loading aeroplane use walkway as appropriate
- All pilots to assist with passenger/marshalling including inter-operator. This is a collective responsibility
- Pilot briefing must insist on disembarking procedure and escort responsibilities be adhered to
- Do not start aeroplane until aeroplane in front has started. This must be applied with common sense as some variations exist
- When possible, hot loading of aircraft to be done on the north-western apron (long term aircraft parking to be done on the main apron to leave this free)
- Parking in a curved line in north-western apron

Ministry of Transport Health & Safety - Policy & Manual for NZMF

The Policy sets out the aerodrome relationships and responsibilities of each employer. The manual establishes an aerodrome Health and Safety Committee and provides that any non-operational incidents/accidents that occur to your employees or passengers/visitors are notified to the Ministry as well as through your own procedures, so the Ministry has an overall picture.

The Policy and Manual are available from the Ministry's website
http://www.transport.govt.nz/ourwork/air/nzmf/

Ensure all employees with duties at the aerodrome are made aware of the Policy and Manual

7.2 Glenorchy Aerodrome NZGY

Operating Procedures as published in the AIP

Operated by Queenstown Airport Corporation

Aerodrome is situated 2 km South of the Glenorchy Township.

Comms;   Unattended / Fiordland CFZ **119.2 MHz**

8. LANDING SITES HELICOPTER / FIXED WING

Tutoko
- Elevation: 6,500ft
- Freq: 119.20
- Details: Two landing sites, an upper and lower site on the Tutoko Plateau, head of the Tutoko Valley. Approaches are made from the Northern Side of Tutoko, from the Tutoko Valley and from the Harrisons Valley.

Madagascar Beach
- Elevation: Sea Level
- Freq: 119.20
- Details: If flying low along the coast between Milford and Martins Bay, be aware of helicopters taking off and landing from Madagascar Beach.

Lake Erskine

- Elevation: 4,500ft
- Freq: 119.20
- Details: Mid Neale Burn Valley, Eastern Side. Helicopters land at the South-Western end of the lake.

Southern/Lower Humboldts
- Elevation: 3,900ft
- Freq: 119.20
- Details: Commonly used landing site, approaches are made either from the West (Caples Valley) or from the East.

Mt Larkins
- The Shelf (South-West Side of Larkins) and
- The Pot Holes (South-East Side of Larkins)
- Freq: 119.20
- Elevation: Shelf 6,400ft, Potholes 4,100ft
- Details: Commonly used landing site. Helicopters generally approach from the Lower Moonlight Ridge to the Pot Holes, generally at an altitude below regular Milford traffic. If flying over Wire Saddle, beware of helicopters taking off or landing from 'The Shelf' landing site.

John O Groats River Mouth
- Elevation: Sea level
- Frequency: Boundary of 119.2 and 118.2
- Details: Landing site right on the edge of frequency boundary please listen on both frequencies when operating here.

Glacier Basin

- Elevation: 6,500ft
- Freq: 119.20
- Details: Commonly used, helicopters will approach from the North (returning from Milford) or from the East (Kinloch Lodge direction).

Clark Glacier
- Elevation: 6500ft
- Frequency: 119.2
- Details:

Tyndall Shelf
- Elevation: 6500ft
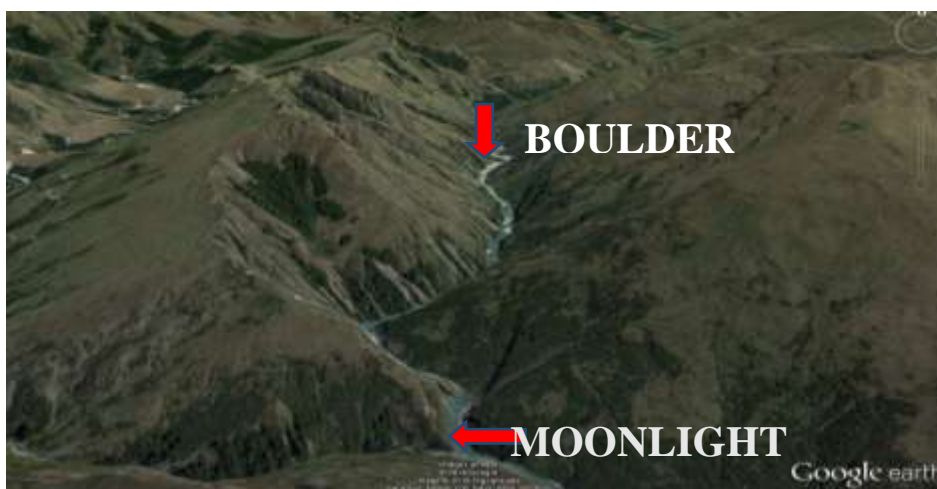- Frequency:119.2
- Details:

Isobel Glacier
- Elevation:7500ft
- Frequency:119.2
- Details:

Mt Vanguard
- Elevation:5000ft-6000ft
- Frequency:119.2
- Details:

Boulder
- Elevation: 1280ft
- Freq: 119.2
- Details: Drop off point for Heli rafters. Multiple daily flights during the winter months
  Helicopters transiting between O'Connells and Boulder below 3500ft

Hollyford Face (North of Harris Saddle and West of Lake Wilson)
- Elevation: 4,500ft
- Freq: 119.20
- Details: Low spur, roughly 1nm North of the Harris Saddle. Beware of helicopters taking off or landing from here if flying close to the hills along the Eastern Side of the Hollyford Valley.

Transit Beach
- Elevation: Sea Level
- Freq: 119.20 and 118.20
- Details: Helicopters approach and depart Transit Beach either from St Annes Point, from the Transit Valley, or along the coast from the South-West. For fixed wing aircraft descending Dale Point, then inbound, be aware of helicopters climbing from Transit Beach towards St Annes, as 118.20 reception can be poor and you may miss the helicopter's initial Transit Beach lifting call.

Lake Quill

- Elevation: 3,200ft
- Freq: 119.20
- Details: Helicopters land at either end of Lake Quill, be aware of this if operating low over the Sutherland Falls area.

9. RADIO COMMUNICATIONS , CFZ AND AREA QNH

9.1 As published in the NZAIP and VNCs B6 & C10 the Primary collision avoidance frequencies are; 119.2MHz for the Fiordland CFZ
118.2MHz for the Milford Sound CFZ

9.2 All Aerodromes, Airstrips and Heli-Ports within the Fiordland and Milford Sound CFZs shall use the respective CFZ frequency as their unattended frequency.

9.3 Milford Sound Aerodrome.
MILFORD SOUND FLIGHTSERVICE 118.2 MHz
Operating procedures as published in NZAIP Volume 4

9.4 It is strongly recommended that Aircraft operating within the CFZs are radio equipped or be with another aircraft capable of making radio calls on their behalf.

9.5 All Aircraft conducting Air Transport Operations within the CFZs must be equipped with at least two VHF radios.

9.6 One Radio to be used solely for collision avoidance, 119.2 MHz or 118.2 MHz as applicable, and the second radio for company and inter company chat.

9.7 During the busier summer months and especially after bad weather the CFZs can become very busy and the collision avoidance frequencies can become extremely crowded and at times overloaded and jammed. Every pilot must make only the calls necessary for the safe conduct of their operation on these frequencies. Pilots should try and fit calls into gaps on the radio and not just talk over other traffic calls. If necessary report referenced to a recognized reporting point e.g. "One mile South Elfin Bay" or use similar phraseology to utilize gaps in the radio traffic.

9.8 Altimeters are to be set to the Queenstown or Milford Sound QNH available from Queenstown ATC or Milford Sound Flight Service respectively.

9.9 In the absences of an accurate QNH set Airfield Elevation until an accurate QNH can be obtained.

9.10 Pilots must remember that substantial errors can occur when transiting from one side of the Divide to the other due to the differences in barometric air pressure.

9.11 Pilots are to give position reports in relation to standard reporting points.

10. GENERAL HIGH LEVEL OPERATING PROCEDURES: Fiordland and Milford Sound CFZs

10.1 Over time there have been a series of procedures that have been adopted by the local Operators that have been put in place to improve pilot awareness, expedite the traffic flow and above all else to increase safety;

10.2 Right Hand Rule: In general the Right hand rule applies when operating within the CFZ. Fly on the right hand side of the major valleys if direction of travel is parallel to the valley systems, unless the weather dictates otherwise.

10.3 Gliding Operations: Gliding operations take place within the CFZs especially during the summer months.

10.4 Glider traffic is to maintain a continuous listening watch on the CFZ frequency and give regular position reports. However if a glider can not be contacted on the CFZ frequency they may well be on 133.55 MHz, the gliding chat frequency. For Gliding competitions officials are asked to advise by NOTAM or contact by Fax / Phone those operators whose known flight routes will be in conflict with gliding traffic prior to launching.

10.5 Pilots sighting Glider traffic should pass their position on to other affected pilots either on a company frequency or as a general call on the CFZ frequency. (Gliders are some times extremely hard to see against a bright snow back ground and pilots should take extreme care when known glider traffic is present)

10.6 Itinerant Traffic within the National Park. The air space encompassing the Fiordland and Milford Sound CFZs are contained within GLASS G AIR SPACE. **The Fiordland CFZ for the most part is capped by the Lowest Level of Queenstown's CLASS D AIR SPACE**

10.7 Resident pilots are asked to exercise a degree of patience with regard to itinerant pilots. Work load in their cockpit may well be at a very high level with the normal demands of flying within the Queenstown FIR.

10.8 Aircraft Landing Lights: While operating within the Queenstown FIR aircraft are to operate either their landing light or taxi light to aid aircraft visibility.

11 GENERAL LOW LEVEL OPERATING PROCEDURES
Fiordland and Milford Sound CFZs

11.1   Right Hand Rule: The Right Hand Rule will apply when operating low level, under normal operating conditions aircraft will climb and descend with the valley wall on their right hand side. This should be extended to all saddle crossings.

11.2   Turbulence and Wind Shear conditions: If wind conditions prevent adherence to the Right hand rule then aircraft should remain on the up wind side of the valley towards the middle of the valley and pre-fix their radio calls with the phrase 'NON STANDARD' ie *'Alpha Bravo Charlie, Kay Creek 6500', for McKeller Saddle Non Standard'*

11.3   CAA legal minimums for VFR flight will be adhered to at all times

11.4   In the interest of fly neighbourly consideration should be given as to the need for any low level operations

11.5   Glenorchy PDZ: This PDZ is operated by Sky Dive Paradise and is located on the Glenorchy Airstrip NZGY. Extensive parachute operations take place at this PDZ during summer months. Care should be taken transiting the Glenorchy area as the PDZ is on the Queenstown – Milford Departure route and the Parachute Drop Plane may be climbing or descending through this traffic route

11.6   Traffic should be vigilant for conflicting traffic coming from the opposite direction, especially when the cloud base is low. Ensure your landing lights are on and make appropriate radio calls.

11.7   Pilots observing operations being conducted that do not meet these requirements should initially refer the matter to a senior representative of the company concerned. See Appendix 15D - Procedures Report Form. Note; If a reportable occurrence under CAA Rule 12 is witnessed, file an Air safety Incident Report with the CAANZ

12. NOISE SENSITIVE AREAS and NOISE ABATEMENT

12.1   Aircraft Noise: The Queenstown Milford User Group strives to maintain a fly neighbourly approach with all operations. It follows that the recommended guidelines published in the Fly Neighbourly Guide of the Helicopter Association International and other appropriate publications be applied.

12.2   Review Process: The Queenstown Milford User Group in conjunction with individual operators maintains a continual review process of all flight routes and operating procedures to ensure a minimum impact on the environment is maintained.

12.3   Pilot Training: Each member of The Queenstown Milford User Group will ensure that all of their pilots receive as part of their individual company training procedures, training in noise abatement procedures and an awareness of noise sensitive areas within the Queenstown FIR.

   Pilot training should cover the following points-
   ▪ company flight routes
   ▪ use of highest practical altitudes
   ▪ use of appropriate rates of descent
   ▪ use of appropriate cruise speeds
   ▪ (Helicopter) use of appropriate applications of power to avoid blade slap.
   ▪ (Aeroplanes) use of correct propeller pitch settings to ensure minimal noise pollution

12.4   Noise abatement procedures should be covered for each model of aircraft flown by the pilot. Each operator shall establish a requirement that noise abatement procedures must be a consideration in all company recurrent check and training programs.

12.5   Where ever possible flight over Populated areas, Private dwellings and Mountain huts should be avoided.

12.6   Flight Routes: Plan flight routes which avoid known noise sensitive areas. Wherever possible plan to cross over valleys rather than fly along them. If it is required to fly along a valley, stay as high as possible and overfly the higher mountain slopes. This will ensure the aircraft noise is absorbed and attenuated by the mountains and be less obvious to people on the valley floor.

12.7 Climbers and trampers: Flight over or close to climbers and trampers is to be avoided. During November to April large numbers of climbers frequent the peaks and glaciers of the Queenstown FIR for recreation and solitude. While all mountain huts and the surrounding peaks are frequented, the following areas attract particularly high numbers of users.

- Milford Walk track – West branch of the Clinton Valley, MacKinnon Pass and Arthur valley
- Hollyford Valley
- Routeburn Valley
- Greenstone and Caples Valleys
- Rees and Dart Valleys
- Homer and Gertrude saddles

Please be respectful of these users by minimising your noise impact in these areas.

12.8 Ground operations: Operators are to avoid prolonged ground idle operations when in or adjacent to any built up area or any noise sensitive area.

12.9 Aircraft operations from the Glenorchy strip will employ noise abatement procedures on take off and will climb out in such a manner as to minimize noise around the town.

12.10 Aircraft Operations: The Queenstown Milford User Group supports the introduction of larger and quieter aircraft that will help reduce the noise impact per passenger flown.

12.11 Exemptions: When necessary for Search & Rescue Operations or DOC work aircraft may be operated within Noise Sensitive Areas. All reasonable care will still be taken to reduce noise as appropriate and as dictated by the nature of the operation being conducted.

12.12 In Line with the Queenstown Airport Corporation's Draft Noise Management Plan August 2010, Section 2.3; The Queenstown Milford User Group shall elect 2 members to represent the Group on the Airport Liaison Committee, ideally a representative from both Helicopter and Aeroplane operations shall be elected.

13. 119.2MHz POSITION REPORTS AND REPORTING POINTS

13.1   Position reporting and standard reporting points: The use of the standard position reporting points as laid out in the AIP is mandatory.

13.2   All aircraft conducting air transport operations within the Queenstown FIR must be equipped with at least two VHF radios. One radio is to be use solely for collision avoidance 119.2 MHz. The other for own company or inter company operations.

13.3   Standard position reports: This should consist of aircraft call sign, position, level and next reporting point.

13.4   Low level operations: When operating low level and climbing or descending within the valleys the use of the next reporting point is considered to be more useful in maintaining collision avoidance than the direction of travel.

14. Operating in a Traffic Collision Avoidance System (TCAS) Environment

Pilots should be aware that when operating within Queenstown Aerodrome's Class D Airspace and near the upper limits of the Fiordland and Milford Sound CFZs their operations will be in the vicinity of TCAS equipped Aircraft, most likely in the form of ATR 72, Airbus A320 and Boeing 737. However, a number of smaller aircraft especially those operating under Instrument Flight Rules will be TCAS equipped as well.

Definitions:

TCAS alerts the crew to conflicting traffic. The system identifies a three-dimensional airspace around the airplane where a high likelihood of air traffic conflicts exists. These dimensions depend upon closure rates between the airplane and potentially conflicting traffic. TCAS interrogates Transponders operating Mode C in other aircraft, analyzes the replies, predicts flight paths and designates possible conflicting traffic as a "*traffic aircraft*."

A Traffic Advisory (TA) is a prediction that traffic aircraft will enter the TCAS collision airspace within approximately 35 to 48 seconds. TAs are intended to assist the crew in establishing visual contact with the *traffic aircraft*.
When TCAS issues a TA:
- A voice alert sounds
- A symbol is displayed on the crews EFIS identifying the *traffic aircraft*

A Resolution Advisory (RA) is an immediate-threat prediction that *traffic aircraft* will enter the TCAS collision airspace within approximately 20 to 30 seconds. If altitude data from the *traffic aircraft's* transponder is not available, no RA can be provided.
When TCAS issues a RA:
- A voice alert sounds
- Vertical guidance is displayed
- A symbol is displayed on the crews EFIS identifying the *traffic aircraft*
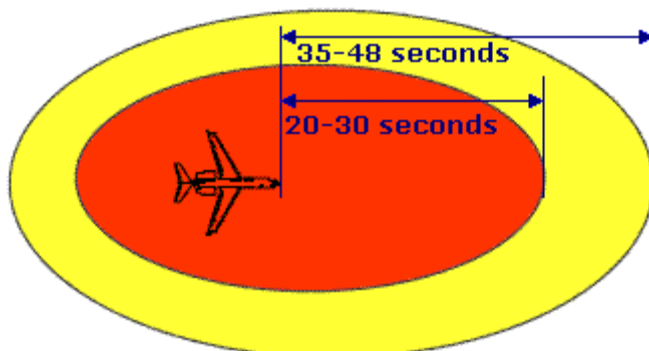
Proximate Traffic is a *traffic aircraft* that is neither a RA nor a TA but is within:
- Six miles laterally, and
- 1,200 feet vertically
- A symbol is displayed on the crews EFIS identifying the *traffic aircraft*
- No voice alert or guidance given

From the diagram on the previous page it can be seen that even behind the TCAS equipped aircraft there is an area which should not be breached and this has been identified historically as one of the major contributing factors of TAs and RAs. Also the majority of reported RAs have not been caused by the aircraft sighted by the crew but others unseen.

<u>Methods to avoid triggering TAs and RAs:</u>

- Avoid flying a converging flight path with a TCAS equipped aircraft

- When cleared to "Pass behind" an aircraft on approach, allow a few extra seconds for the aircraft to clear your planned flight path before turning base or resuming your flight path, then fly a square base leg or flight path that doesn't chase the tail of a TCAS equipped aircraft to the apron, avoid converging flight paths!

- For helicopters on the ground such as at The Ledge or The Remarkables ensure your Transponder is set to Stand By.

- If there is a chance of your flight path converging with a TCAS equipped aircraft then attempt to maintain separation of at least;

    ~ 1000' vertically or 3nm laterally
    ~ Ideally 1200' vertically or 6nm laterally

Implementing these techniques will minimise if not completely alleviate the occurrence of TAs and RAs in the Queenstown FIR.

15. APPENDICES

- **15.A   Queenstown Milford User Group Constitution**

- **15.B   AIRWAYS Memorandums of Understanding**

- **15.C   Procedures Report Form**

- **15.D   User Group Memorandum of Understanding**

- **15.E   Employees Signature Sheet**

15.A   Queenstown Milford User Group Constitution

Purpose of User Group - Operations

- The purpose of the Group is to facilitate development, co-ordination and education of aviation procedures for the safe use of airspace and aerodromes within the QN FIR and enhance aviation safety overall

- The QN/MF User Group comprises aviation operators who operate in or are based within the QN FIR. Membership is open to all aviation organisations and individuals who are involved in the aviation industry. Membership is accepted once an appropriately completed application form is submitted to the Secretary. A list of current members is to be maintained by the Secretary and is to be made available on request to other members. The object of the Group is to facilitate development, co-ordination and education of procedures for the safe use of airspace and aerodromes within the QN FIR and enhance aviation safety overall.

- The CAA's South Island Field safety Advisor- operations (or equivalent CAA representative) will participate in meetings to provide a channel of direct communications with CAA

Purpose of User Group – Commercial

- The purpose of the group is to provide advice, assistance and resolution to commercial matters pertaining to aviation operations. Membership is available by invitation only to affected parties.

Procedure Development – Operations Group

- Procedures proposed by the User Group are to be in the interests of safety, **not the commercial interests of the participants.**

- Procedures will be based on standard aviation operating practices and will be generated in consultation with members of the User Group and other interested parties as necessary.

- Operational Managers Group has the authority to 'enact' procedures if they agree by 75% majority vote or otherwise the Full User Group by majority vote.

- Procedures will be promulgated only for safety purposes. User group members in particular must be familiar with the promulgated procedures and comply with them. Good airmanship is to be expected.

- All Procedures will be public and published in the AIPs, VTCs, Memorandums of Understanding, User Group Minutes and this Constitution as appropriate.

- Whether procedures will be mandatory or advisory will be determined on a case-by-case basis. Any User Group member who does not agree with a decision regarding whether or not a procedure should be mandatory is entitled to refer the issue to an appropriate CAA representative *[e.g. the South Island Field Safety Advisor or equivalent].* The CAA's determination on the issue will be binding on all members. The Operational Managers Group will regularly review procedures at intervals of not greater than 5 years or whenever deemed necessary from either; incident or other airspace changes.

Administration

Officers

- The User Group Operations will appoint a Chairman from their number by majority vote at a meeting annually.

- The User Group Commercial will appoint a Chairman from their number by majority vote at a meeting annually.

- The Commercial and Operations Group shall appoint a common Secretary by majority vote at a meeting annually.

- The quorum for User Group meetings shall be 20% representation of current member organisations.

Meetings

- The Chairman – Operations, is responsible for calling two Aviation staff meetings per year and additional meetings when reasonably required to address issues or develop procedures. The secretary is to produce meeting agendas and circulate minutes.

- There shall be a minimum of three Operational Managers Group Meetings per year at times to be agreed by the members of those groups.

- The Chairman – Commercial, is responsible for calling meetings as required.

- Any Sub committee established shall meet and report as required.

- Quorum numbers shall be taken from the effective membership list as at the date of the Annual General Meeting

Spokesperson

- The Chairman – Operations is to be the public spokesperson for the User Group, or other persons delegated this responsibility by the Chairman – Operations. No other person may claim to represent the User Group as spokesperson for the purpose of public statement.

Finance

- The User Group – Operations will not levy subscriptions but may raise funds and have a bank account for sponsorship or funds that may be obtained.
- The User Group – Commercial shall levy members as required to cover expenses incurred in response to functions carried out
- The User Group account will require countersigning by the Chairman - Operations, Chairman – Commercial and/or Secretary

Liability

- All User Group members acknowledge that the Officers and other members of the User group are performing any roles and responsibilities in connection with the User Group on a voluntary basis and in good faith. In the absence of wilful default, no member or Officer shall have any liability to any other member or Officer whether in contract, tort or otherwise, for anything associated directly or indirectly with that member or Officer's involvement in, or performance or non-performance of any role or responsibility as part of, the User Group.

Structure of User Group - Operations

Operational Managers Group

Participants: - Chairman of the User Group
- Chief Pilots or Airline Representatives
- Airways NZ Representative
- QAC Representative
- CAA Field Safety Adviser South Island
- Other parties as invited by the Chairman i.e. DoC, MoT, AVSEC, Police, Border Control Agencies

- The quorum for meetings is 50% of member organisations when procedures are either amended or enacted or policy adopted or otherwise 20% representations from member organisations.

Purpose
- Identify any safety concerns, investigate and recommend solutions to a company and/or CAA.

- Discuss and agree on by vote:
  - Policy   75% Majority, one vote per organisation
  - Recommended procedures   75% Majority, one vote per organisation
  - Safety initiatives   50% Majority, one vote per organisation
  - Awareness programs   50% Majority, one vote per organisation

- This group has overall responsibility for management of, and determination of the objectives and goals of, the QN/MF User Group
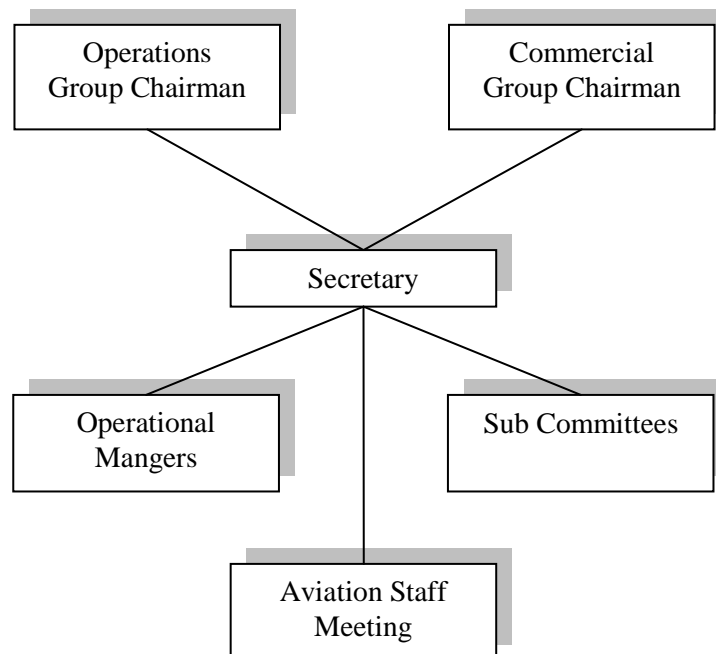
Aviation Staff Meeting

Participants

- All User Group members and staff

Purpose

- Education
- Notification of any changes to procedures
- Social

```
   Operations              Commercial
 Group Chairman          Group Chairman
          \                /
           \              /
            \            /
             Secretary
          /      |      \
         /       |       \
Operational      |      Sub Committees
 Mangers         |
                 |
          Aviation Staff
             Meeting
```

15.B AIRWAYS Memorandums Of Understanding

As required Airways Memorandums of Understanding will be developed to facilitate the safe and efficient management of various aviation groups within the Queenstown CTR, these Groups may include but not be limited to the following;

- Fixed wing Aeroplane operations
- Helicopters operations
- Training organisations – aero clubs etc.
- Parachute dropping

The development, amendment and issue of Airways Memorandums of Understanding will be the responsibility of;

> Chief Controller or nominee
> Airways NZ
> Control Tower, Queenstown Airport, Frankton
> Private Bag 50075, Queenstown 9348, New Zealand
> Ph: 03 450 9520
> Fax: 03 450 9529

15.C Procedures Report Form

| Use this form for both positive and negative feedback on procedures |

Aircraft / Company involved: _____

Date & Time: _____

Location: _____

Procedure:

(Tick box)

☐ Arr/Dep Procedure   ☐ Enroute Procedure

☐ Joining Procedure   ☐ Position Reporting

☐ Environmental Procedure   ☐ Parking

☐ Runway Separation   ☐ Passenger Handling

☐ Refuelling   ☐ Taxiing

☐ Airmanship   ☐ ATC ☐ AFIS

☐ Other (specify)

Event observed: _____

_____

_____

_____

_____

_____

Reporting Organisation: _____

To: _____ *Safety Officer or Senior Pilot of Company involved*
(Name of Safety Officer/ Senior Pilot if known)

Please supply written comments back to the reporting organisation and User Group Chairman on reasons for this action. Note: If this is a reportable occurrence under CAA Rule Part 12, file an Air Safety Incident report with CAA.

Sent to: ☐ Company Involved   ☐ QMUG Chairman / Secretary
Date ___/___/_____   Date___/___/_____

15.D User Group Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING BETWEEN COMMERCIAL HELICOPTER AND FIXED WING OPERATORS IN THE QUEENSTOWN FIR

OBJECTIVE:

To establish standard operating procedures, guidelines and position reporting points for operations in the Queenstown FIR.

PROCEDURES:

- All pilots operating in the Queenstown FIR are to be familiar with the content of this User Group Hand Book.
- The contents of this Hand Book are S.O.Ps if, however, weather conditions or other operational concerns require differing procedures then pilot's discretion is necessary.

15.E Employee Signature Sheet

Company Name	
An Employees signature indicates they have read and understood this Hand Book	

Employees Name	Signature	Date