



**MEDICAL
SENTINEL 2007
ACONCAGUA 6959M**

**POST EXPEDITION REPORT FOR EXERCISE NORTHERN MEDICAL
SENTINEL**

6TH – 31ST January 2007 – High Andes, Argentina

Introduction

Expedition leader - Surg Cdr MELLOR RN
MDHU Northallerton
Friarage Hospital
Northallerton, DL6 1JG.

1. Expedition Medical Sentinel was a high risk and remote level 3 expedition taking place from 6th – 31st Jan 07 (in country 7th to 30th Jan).

2. Participants were drawn from the Defence Medical Services and were Triservice (8 RN, 5 Army, 3 RAF) from RCDM Birmingham, Ministry of Defence Hospital Units (MDHU) at Portsmouth, Plymouth and Northallerton and sickbays at RAF Cottesmore and Kinloss.

3. The expedition took place in Argentina with an acclimatisation phase climbing Cerro Vallecitos and the main phase climbing Aconcagua. The nearest city base was Mendoza.

4. The expedition was successful in all respects. All expedition members (many of whom were novices) attained personal altitude records. 15 of the 16 reached the summit of Cerro Vallecitos at 5500m and 6 summited on Aconcagua (6959m). In addition data were collected for a research project in collaboration with University College, London.

Expedition Members

Name	Sex	Rank	No	Responsibility	Service
Adrian Mellor	M	Surg Cdr	C035201F	Qualified leader	RN
Stevan Jackson	M	Capt RN	C031331X	Qualified leader	RN
Dave Murphy	M	POPTI	D224989F	Qualified leader	RN
Stuart Jackson	M	Cdr RN	C025464A	Qualified leader	RN
Robert Wakeford	M	LNN	Y003960Y	Food	RN
Baz Lawrence	M	LMT	D242008L	Photography	RN
Jason Taylor	M	LNN	Y004047G		RN
Cheryl Lindup	F	LNN	Y004070U		RN
Jemma Austin	F	Flt Lt	2658908S	Medical	RAF
Anil Cherian	M	Flt Lt	8701698Q		RAF
Steve Swindells	M	Wing Cdr	8701253U		RAF
Harry (Nick) Vincent	M	Capt	562500	Equipment	Army
Hatty Wells	F	Maj	547792		Army
Tim Hooper	M	Maj	548651	Research	Army
Jason (Tom) Beckett	M	SSgt	25013015	Equipment/PR	Army
Chrissy Shorrocks	F	Capt	562333		Army

Aim

5. The aim of the expedition was to climb Aconcagua by the normal (Horcones valley) route. This was achieved by 6 of the 16 team members which was in line with expectation. Secondary aims were to climb Cerro Vallecitos (5500m) which was achieved by 15 team members and conduct research into acclimatisation to altitude with UCL.

6. The expedition was judged to be a great success overall. Many of the team were novices to extreme altitude and to the Joint Services AT scheme. All individuals achieved personal altitude records during the expedition (with the exception of one instructor). The acclimatisation period on a different mountain was of particular value and enabled good progress on Aconcagua and rapid progress to the summit in a restricted weather window.

Preparatory Training

7. One of the expedition instructors was an ATI at JSMTTC Indefatigable. This enabled the facilities at JSMTTC to be used for team selection and training over a period of 3 weekends (Feb, Sep and Dec 06). During this time 6 team members achieved a Mountain Leader Training certificate.

8. Generally this time provided good team building and adequate training opportunities. However, the weather on Aconcagua was severe and wintery for some periods and time would have been well spent carrying out a Winter Mountaineering Proficiency or similar.

Expedition

9. The expedition had two distinct phases,

- a) Climbing Cerro Vallecitos for training and acclimatisation.
- b) Climbing Aconcagua via the Horcones valley approach.

Date	Activity
6/7 Jan 07	Fly Heathrow to Mendoza
8 Jan	Shopping and transfer to Plata des Sky (3000m)
9 Jan	Trek to Piedra Grande Camp (3500m)
10 Jan	Acclimatisation trek to 4200m
11 Jan	Trek to El Salto Camp (4200m)
12 Jan	Rest/ acclimatisation trek to 4500m
13 Jan	Summit Vallecitos 5500m
14 Jan	Return trek to Plata des Sky resort and road move to Penitentes
15 Jan	Trek to Confluencia (3500m)
16 Jan	Trek to Plaza des Mulas (4200m)
17 Jan	Rest day at Plaza des Mulas
18 Jan	Load carry to Nido des Condores (5500m). 4 of team

	sleep at Nido, 4 at camp Canada (5000m)
19 Jan	Return to Plaza des Mulas (high winds forecast)
20 – 22 Jan	Rest in Plaza des Mulas (high winds), 6 team members return to Mendoza.
23 Jan	9 team members trek to Nido
24 Jan	Trek to Camp Berlin (5980m)
25 Jan	6 Team Members summit Aconcagua.
26 Jan	Return to Plaza des Mulas
27 Jan	Trek out Plaza des Mulas to Horcones then onward to Pentitentes and Mendoza
28 – 29 Jan	R&R Mendoza
30/31 Jan	Return flights to Heathrow.

Expedition diary at annex A

Publicity

10. Publicity for the expedition was handled by DMSD corporate comms who sent press releases to the medical and local press and hosted a website.

11. Accounts of the expedition will be sent to the DMETA Newsletter, DLO News and mountaineering club journals. In addition it is hoped that work performed with UCL will result in publications in an international journal of physiology and in the Royal Army Medical Corps journal.

Finance

12. A breakdown of expedition income and expenses is at annex B.

13. In the end the expedition raised more money than was required. This was in part because it was not required to draw on a contingency reserve and the USD exchange rate improved considerably during the course of expedition planning. The current balance of £2316.53 will be used to produce a post expedition brochure and the balance returned to the organisations supporting the expedition once all flight refunds are paid.

14. Personal contributions were waived for two of the group instructors, POPTI Murphy in recognition of the effort required to run the MLT course over two weekends and his place as the ATI on the trip and Cdr Stuart Jackson (reduced to £300) as a short notice replacement instructor.

Equipment

15. All technical equipment was obtained from AT stores at Bicester. One team member visited Bicester in advance of ordering stores to check what was available, however due to the time lag with submitting paperwork through the MDHU and Division the deadline discussed for ordering was missed.

16. The equipment used was generally adequate although the Gortex supplied was old and had seen more than a reasonable number of wash

cycles. Fortunately for this trip wind proofing rather than waterproofing was the main issue.

17. Scarpa Vega boots were issued to the team members which proved adequate. All team members suffered with cold feet on summit day and using extreme high altitude boots (such as Olympus Mons or similar) would not be unreasonable. Boots were hired in Mendoza for two team members who could not be kitted out through Bicester. Good quality boots were available at a cost of USD 80 per pair for the exped period.

18. A kit list from www.aconcagua.com was issued to team members and found to be comprehensive and helpful.

19. Ice axes were taken but not used. Advice from the Inka guides suggests that whilst ice axes are a requirement above basecamp they are carried only to satisfy the rangers and not used! Crampons were worn above Independencia refuge.

Problems Encountered

20. Generally speaking the expedition ran in line with the plan and to budget. The following paragraphs highlight potential problem areas.

21. Planning and administration. The process for planning and approval is lengthy and full approval was only reached with approximately 6 weeks to go before departure. This is too late to book airline seats and agents in country. As a result the expedition leader committed significant funds of his own at a risk that approval would be forthcoming. Additionally many service personnel are not in a position to commit to an exercise many months in advance. One potential way to alleviate this problem is to take out insurance for all team members if they do not participate for service reasons. This would enable flights etc to be booked well in advance.

22. CILOR was claimed with artic supplement in line with the expedition plan in the JSATFA . Although this process was achieved in time future exped leaders should bear in mind that CILOR cannot be claimed centrally for all exped members. The suggestion is that individuals claim their own CILOR and time should be allowed for this.

23. Medical Incidents. The expedition remained free from major medical problems throughout. One team member struggled to acclimatise and failed to get any higher than 4200m during the trip. He had to be escorted to lower camps on two occasions. The acclimatisation strategy worked well to prevent significant acute mountain sickness. There were no episodes of significant travellers diarrhoea. Several of the expedition members took acetazolamide (Diamox) tablets and there was a problem obtaining sufficient of this drug before leaving UK. It was easy to purchase acetazolamide locally in Mendoza at modest cost without prescription.

Information for Future Expeditions

24. The time frame of this expedition proved adequate and all spare days were used due to poor weather on the mountain. The trekking on Aconcagua proved to be very enjoyable and the environment clean and pleasant.

25. The local currency (Pesos) and US dollars are widely accepted usually at a fair exchange rate. At the time of the exped exchange rate was 3.06 pesos to the US Dollar (USD) which is historically high. (GB Pound to USD was 1.86). The exped took USD in cash to Argentina and changed these in country. This worked out as cost effective as changing to pesos in UK. It is worth noting that the Argentinians use the dollar sign (\$) for the peso, which can lead to confusion looking at prices on the internet! Most things at base camp (Plaza de Mulas) seemed to be priced in USD. For Park permits only Argentina pesos are accepted in cash.

26. The acclimatisation phase on Cerro Vallecitos was extremely valuable. The 7 days there enabled acclimatisation without the psychological pressure of repeated trips on the same route and exposed the team to a different geographical area. The overall cost of that phase of the exped (USD 470) was judged to have represented superb value for money. Using guides on Vallecitos was deemed necessary because of the paucity of information on the mountain (a new guide Ciccone does now include details of this trek). Although the route was obvious and guides were not required the team gained very valuable information on local routes and Aconcagua through the three Inka guides. Also when one team member had to be escorted from 4200m back down to the refuge at 3000m this was done by one of the guides enabling our team to remain at altitude and gain maximum acclimatisation. It is recommended that future teams consider the modest expense of guides for these reasons.

27. The ascent of Aconcagua itself was harder than anticipated. This was due to the weather experienced, frequent heavy snow showers, thunder storms and high winds. Summit day was bitter cold (much more so than anything experienced by the instructors at similar altitudes in the Himalayas) and a severe test of equipment, personal skills and resolve. Additionally a number of the team struggled to carry the heavy loads required to establish camps. This could have been alleviated by using porters (at a cost of USD120 per 20Kg to Camp Nido) or perhaps by prior training.

28. The team was relatively inexperienced, approximately half having no experience of climbing higher than Snowdon. After the success of climbing Cerro Vallecitos 6 team members struggled to perform well on Aconcagua. After some discussion that group descended to Mendoza and had a longer period of R&R. In many ways that decision contributed to the success of the expedition in that those left on the mountain had tents and sleeping bags etc to leave at higher camps. Given the extreme weather on summit day the exped leader has no doubt that had we tried to summit as a full team no-one would have reached the top.

29. Food for the climb of Aconcagua in was purchased in Mendoza. There is a large Carrefour supermarket close to the city centre. This is open from 0800 – 2200 7 days a week. Food for the mountain (eg cereal bars, sweets, biscuits, noodles, nuts etc) are readily available and at the time of visit cheap by UK standards. Food provided by Inka at all camps was plentiful and good (vegetarians were very well provided for). Some hardware was available to be purchased locally although this was expensive by UK standards. Head torches, water bottles, duffle bags, karabiners etc could be purchased at Orviz (address below).

30. Weather forecast for the mountain was obtained daily from the internet (<http://www.snow-forecast.com/resorts/Aconcagua.0to3mid.shtml>) this was written down each evening and available from the Inka internet tent. It proved to be accurate. The ranger at Nido informed our team of threatened high winds when we enquired about a forecast. The rangers forecast suggested winds due 48 hrs before the internet forecast and the internet forecast proved to be correct. Talking to other teams it appears that the rangers are likely to give overly pessimistic forecasts!

31. Internet services are available at several locations in base camp and cost USD 12 for 20 minutes. The Inka internet tent also had card reader to download photos and the facility to charge (via a 240v socket) items for Inka clients. The power adapter required has two flat pins and is the S American adapter easily purchased at UK airports.

32. All services provided by Inka were delivered as promised, on time and very professionally. There were no problems with kit going missing or being damaged on the mules. The only exception to this was the bags strapped to the mules suffered a great deal of wear and tear. The issued black kit bags seemed to be more robust in this use than waterproof duffle bags (eg North Face bags).

Summary

33. Expedition Medical Sentinel was a highly successful expedition meeting it's members aspirations and the aims of AT in full.

34. The areas visited were all safe and enjoyable and provided a superb introduction to high altitude mountaineering for the team.

Surg Cdr A Mellor

Expedition Leader

Enclosures;

Annex A – Expedition Diary

Annex B – Financial Breakdown

Annex C – Useful Contacts

Annex D – GPS locations and waypoints within the Aconcagua National Park

Annex A – Expedition Diary

6th Jan 07 Team assembled at London Heathrow for the flight to Mendoza via Buenos Aires. 14 team members flew via Rome and 2 via New York. It is worth noting that the baggage allowance on the New York flights were considerably more generous which enabled all the teams baggage to be carried without excess charges.

7th Jan 07 Arrived via internal flight at Mendoza. In Buenos Aires it was necessary to transfer from the international to domestic airport. This took about one hour (on return with all security checks etc a total of 4 hours was required). Organising this transfer is easy at a cost of 28 Pesos (\$9) per person with a local bus company with offices at the exit to arrivals. On arrival at Mendoza the team was met by a representative of Inka Expeditions and transport to basic hostel accommodation was prompt and efficient.

8th Jan 07 Spent the morning obtaining local currency and Aconcagua Park Permits at the park office in Mendoza. This is a straightforward but time consuming process. After this team members bought food for the mountain, additional medical supplies and hardware and hired equipment. Transfer to Plata des Sky resort was provided in the afternoon by Inka (approximately 2.5 hr road journey). Overnight accommodation in the hostel at Plata des Sky (3000m).

9th Jan 07 Tents and food was moved by mule up to the first camp (Piedra Grande) at 3500m. A pleasant walk climbing up over meadows to the campsite by some large rock formations. Inka catered for us with no fixed set up at this camp. Water was a short walk way across the moraine and very silty. Filtering through a Katadyne filter as hard work but made it more palatable.

10th Jan 07 Acclimatisation trek up to El Salto camp (4200m). The return trip took 7 hours across barren moraine. 3 team members turned back at around 4000m with a guide.



11th Jan 07 Team moved up to El Salto camp. There is more seasonal tentage here with a kitchen and mess tent. We were catered for by Inka but food could be purchased on an ad hoc basis. One team member became unwell early evening with symptoms of Acute Mountain Sickness and a cough and was escorted back to the refuge

at 3000m. Evening temperatures dropped below freezing.

12th Jan 07 Rest day at El Salto with a brief walk up to 4500m with some of the group wearing plastic boots for the first time.

13th Jan Left camp at 0500 in cold weather for the summit of Cerro Vallecitos. The mountain is given heights of 5500 – 5800 m on various maps and guidebooks. Our GPS height was 5675m and by altimeter height was 5400m! Consensus was reached that we were at 5500m! The going is easy on good paths on steep scree until the final summit pyramid which is a brief scramble. A rope was available but not used. Summit was reached at 1200 and all were back in camp by 1530.

14th Jan Return to Plata des Sky resort and move to Penitentes. The walk down took approximately two hours followed by a two hour drive to Penitentes. This made the day fairly full and tiring especially as kit had to be sorted for the mules for Aconcagua on arrival at Penitentes. The hotel at Penitentes is fairly shabby and represents little value for money over the hostel (Pesos 160 for a triple room versus 36 Pesos pp in the hostel). Some (presumably) successful groups from Aconcagua were celebrating well into the night.

15th Jan Road move by Inka to the ranger station at Horcones (about 10 km). Here the permits were checked and individual gash bags issued. From here the trail up towards Aconcagua is obvious with good views of the mountain in the distance. The walk to Confluencia camp is easy underfoot (about half the group trekked to Plaza des Mulas in trainers), with some stunning views. Overnight kit was carried to this camp on mules. Confluencia (3500m) is a fixed camp with several operators each with their own mess tents and flush toilets. Arrived there in approx 3 hours to enjoy excellent food and comfortable mess tent.

16th Jan Continued to trek on to Plaza des Mulas (4200m). This was a hard days walking especially considering our team was well acclimatised. The horizontal distance is considerable (around 17 km) and the climbing is mostly over the last 2 km. Three hours into this trek one team member who had struggled with the altitude on Vallecitos was unable to continue and had to be escorted back to Confluencia by two instructors. Food, accommodation (a large tent with bunks) and a sleeping bag were all obtained at Confluencia at a cost (USD 48 per day) for this individual. He rejoined the group walking up in company with a guide two days later. Most of the team took 8.5 hours for this trek.



17th Jan Rest day at Plaza des Mulas. Time was spent checking stoves and preparing food for the hill.

18th Jan The intention this day was for a load carry to Nido des Condores camp at 5500m. Individual loads were packed with around 5kg each of team equipment to establish a camp for 8 at Nido. 14 of the group set off on this trek, however it soon became apparent that not all the loads could be carried to Nido. 12 of the team reached camp Canada (5000m). Loads were redistributed with 4 team members returning to BC, 4 going on to stay at Nido and 4 carrying to Nido and returning to sleep at Canada. This

was achieved successfully albeit in high winds and snow, by the time the team reached Nido snow was thigh deep in places making the going very difficult. The night was windy with frequent thunder and lightning.

19th Jan The four team members at Canada left early to climb to Nido and camp, however on reaching the midway point the team from Nido were met. The ranger based at Nido had advised the group leader of high winds due imminently and advised descent asap. Regrettably the group descended getting all the team back to BC (see the note in Problems Encountered concerning this).

20th – 22nd Jan Rest days in BC. The forecast high winds arrived on Sunday making sleeping in the tents very uncomfortable. During this time 6 of the team decided to return to Mendoza to maximise the food and equipment left for the team members performing better at altitude. 3 of the 6 had the MLT award and were trekking in fair weather along a familiar route so they descended without a more qualified instructor. Their return travel was arranged at no extra cost by Inka.

23rd Jan The remaining 9 fit team members ascended to Nido camp. Care was taken to keep personal loads as light as possible as the team now had a three day weather window to reach the summit. To achieve this a porter was paid to carry a 20Kg load to Nido (at a cost of USD120 this was easy to organise). 5 Tents were carried to Nido allowing a comfortable night for all personnel.

24th Jan

The team moved from Nido to camp Berlin (5890m). This is a



short distance and was covered in 2.5 hrs at a slow pace. Berlin camp soon became very crowded with a large group of Argentinian military and numerous other groups. The 9 team members divided between 3 Quasar tents for night which was not comfortable but considerable reduced the load carry.



25th Jan

All tents woke at 0300 to start melting water etc ready to leave at 0500. The morning was bitter cold, at least -15 °c in still air and with approximately 20mph winds. The route above Berlin is initially steep and then winds left and back right towards the Cannaleta. Several groups (including the Argentinian Military) passed us heading back down during this time, one of the instructors experienced extremely cold feet and

had to have them rewarmed before heading down to Berlin (wearing Nepal Extreme leather boots). At Independencia shelter (6400m) the team donned crampons. At the bottom of the cannaleta (approx 6600m) one instructor and one of the team felt unwell and elected to return to a lower camp. The Cannaletta itself was not as draining as it's reputation due to the amount of snow and ice. At approximately 1430 the remaining 6 team members arrived at the summit. There was only time for a brief summit photo as the weather closed in with very heavy snow and static in the air. The way down became very difficult due to poor visibility in snow and cloud, great care was needed to identify the correct route and GPS was very useful. On reaching Berlin the descending three team members had left for lower camps and to conserve food and fuel two other team members elected to return to Nido. The distribution of the team that evening was 4 at Berlin, 2 at Nido and 4 at BC (3 who had descended plus 1).

26th Jan The team members still on the hill returned to BC carrying all kit down with them. The first 5 team members carried a total of 130Kg off the hill preventing any need for trips back onto the mountain. Excellent food (and two bottles of champagne) were provided by Inka.

27th Jan Loads were sorted out for the mules and packed for the team's descent. The team walked down to Horcones and then were transported back to Penitentes. After a brief wait for the mules transport returned the team to Mendoza and reunion with the other team members who had sorted out accommodation at the hotel Huentala.

28th - 30th Jan R&R in Mendoza. The team enjoyed a superb meal out and indulged in shopping and a tour of local wineries. Mendoza is a very modern city and prices were very cheap.

30th – 31st Jan Return home (14 via Milan, 2 via New York). Although the team had had no problems with baggage on the way out excess baggage was charged on both the internal (USD 150 for 100kg) flight and leg via New York (USD100 for one extra bag).

Annex B to Expedition Northern Medical Sentinel's PXR - Financial Breakdown as of 1 March 2007

Income

Public Money

09-Aug	2 Div G3 PAT	£1,050.00	
02-Oct	JSET	£5,000.00	
20-Dec	RN AT Grant	£1,200.00	150 per head
20-Dec	CILOR	£3,063.16	
10-Dec	RAFAT	£1,907.12	
10-Dec	RAF T&S	£2,343.00	

Personal Contributions

31-Aug	Personal Contributions	£8,700.00	
--------	------------------------	-----------	--

Non Public Money

09-Aug	AMA	£200.00	50 per member
09-Aug	QARRNS Trust Fund	£1,200.00	400 per member
10-Oct	RHH Haslar Welfare fund	£900.00	300 per member
10-Oct	MDHU(N) PRI	£600.00	150 per member
31-Aug	RN Lottery grant	£4,800.00	800 for first 6 members
10-Nov	RNRMMC	£250.00	50 per member
10-Nov	Drummond Foundation	£1,120.00	
10-Dec	Stott Memorial Fund	£250.00	
05-Dec	TMAF	£529.13	
01-Dec	BIBMTF	£600.00	
10-Dec	QARANC	£300.00	150 x 2
26-Sep	RAF Sports Lottery	£294.00	
12-Jan	2 Div Welfare funds	£800.00	
	Bath Welfare Money	£118.00	

Total income £35,224.41

Overall balance £1,484.53

Flight refund £832.00

Expenses

UK

Travel	£14,679.88
Team kit and equipment	£890.16
INKA services	£9,897.63
Sat phone charges	£32.43
Research costs	£1,120.00

Argentina

Accommodation	£1,933.90	
Food	£1,377.64	
Transport	£368.14	
Team kit and equipment	£448.69	
Misc	£152.16	Tips and porters
Communications	£28.09	
Permits	£2,811.16	

Total Expenses £33,739.88

Current overall financial position £2,316.53

Annex C - Useful contacts and reference material;

Useful Contacts

Inka (Sebastian – head guide and Carolina – office staff) both speak good English.

Inka Expediciones
Juan B Justo 345 PB
Ciudad
Mendoza
Argentina

Tel/fax +54 261 4250871

Inka@inka.com.ar, www.inka.com.ar

Orviz (reasonably well stocked gear shop with hire facilities, close to Inka offices)

Casa Orviz
Juan B Justo 532
Mendoza

Surg Cdr Mellor RN dramellor@aol.com 07786166370

Reference material

www.aconcagua.com (links to weather forecast, kit lists etc)

Aconcagua – highest trek in the world, Jim Ryan, published by Cicerone ISBN 1 85284 455 8. Excellent comprehensive guide, English rather than American, with information on acclimatisation treks on surrounding peaks as well as Horcones Valley and Vacas Valley routes.

Aconcagua a climbing guide (2nd edition), R J Secor, published by The Mountaineers Books, ISBN 0-89886-669-3. Details of numerous routes on the mountain.

Aconcagua 1:50,000, Map for Mountaineers and Trekkers, Cordee, ISBN 1871890691. Other maps available locally.

Annex D GPS Locations of camps and distances for Horcones Valley route

WGS84 coordinates of main points in Aconcagua Provincial Park

Nombre / Name	Latitud S	Longitud W	Altitud, m
Cementerio de los Andinistas - Mountaineers cemetery	32°49'33"	69°53'45"	2650
Puente del Inca	32°49'36"	69°54'39"	2720
Guardaparques Los Horcones / Los Horcones ranger station	32°48'40"	69°56'33"	2950
Lanuna Los Horcones / Los Horcones lake	32°48'22"	69°56'36"	2980
Puente 1 / Bridge 1	32°47'21"	69°56'54"	3080
Torrente (agua en afios con nieve / water in snow years)	32°46'04"	69°57'28"	3370
Confluencia viejo / old (hasta 2003 / up to 2003)	32°45'29"	69°58'34"	3390
Confluencia nuevo / new	32°45'31"	69°58'01"	3410
Puente 2 viejo / Bridge 2 old (destruido / destroyed in 2004)	32°45'21"	69°58'26"	3400
Puente 2 nuevo / Bridge 2 new	32°45'30"	69°58'23"	3390
Piedra Roia / Red Rock	32°44'21"	70°00'07"	3570
Piedra Ibanez / Ibanez Rock	32°44'55"	70°03'16"	3790
Punto Astronomico FI-UIRA / Astronomic point	32°40'07"	70°03'36"	4020
Refugio Militar / Military shelter (destruido / destroyed)	32°39'06"	70°03'16"	4080
Hotel Plaza de Mulas	32°39'16"	70°03'51"	4370
Cerro Bonete	32°39'34"	70°05'19"	5010
Plaza de Mulas (Guardaparques / Rangers) / base camp	32°38'60"	70°03'26"	4350
El Semaforo	32°38'51"	70°03'13"	4550
Piedras Conwaw	32°38'50"	70°03'00"	4740
Plaza California	32°38'45"	70°02'49"	4840
Plaza Canada	32°38'42"	70°02'37"	5050
Piedras de 5000	32°38'33"	70°02'24"	5170
Campamento Alaska (izquierdo / left) / camp	32°38'23"	70°02'09"	5370
Campamento Alaska (derecho / right) / camp	32°38'28"	70°02'11"	5340
Ex refugio Antartida Argentina / destroyed old shelter	32°38'35"	70°01'54"	5500
Cerro Manso	32°38'10"	70°02'10"	5510
Nido de Condores / camp area	32°38'14"	70°01'49"	5560
Descanso en el primer recodo / rest point	32°38'06"	70°01'25"	5690
Refugio Berlin / shelters area	32°38'19"	70°01'18"	5930
Plaza Cfilera / Lower White Stones	32°38'15"	70°01'07"	5970
Piedras Blancas / Inner White Stones	32°38'25"	70°01'08"	6060
Piedras Negras / Black Stones	32°38'30"	70°00'58"	6180
Ex Refugio Independencia / destroyed old shelter	32°38'46"	70°00'56"	6370
El Dedo	32°38'55"	70°00'57"	6460
La Cueva (inicio de / start of Canaleta)	32°39'14"	70°00'57"	6660
Salida al Filo / Ridge climbing	32°39'16"	70W52"	6800
Cumbre / Summit	32°39'11"	70°00'43"	6960
Refugio Panna de Lenas / shelter	32°45'07"	69°48'26"	2950
Refugio Casa de Piedra / shelter	32°37'53"	69°50'21"	3240
Plaza Argentina / base camp	32°38'47"	69°56'40"	4190
Campamento 1 Polaco / camp 1	32°38'18"	69°58'40"	4880
Coilado Ameghino / pass	32°38'13"	69°59'29"	5180
Campamento 2 Polaco / camp 2	32°38'27"	69°59'58"	5830
Campamento 3 Falso Polaco / camp 3	32°38'37"	70°00'54"	6250

Datos de los principales campamentos / Main camps data

Campamento	Lat. S	Long. W	Alt., m	Area, Ha	Características / Characteristics
Confluencia	32°45'31"	69°58'01"	3410	2.1	G M H A S T U X
Plaza de Mulas	32°38'59"	70°03'26"	4370	5.0	G M R H A ' S T U Y
Hotel Plaza de Mulas	32°39'15"	70°03'52"	4370	3.1	G ² M ² R H A S ³ T U 2 0
Plaza Canada	32°38'42"	70°02'37"	5050	0.2	R ² 15
Nido de Condores	32°38'16"	70°01'47"	5560	7.5	G H ² R 200
Berlin	32°38'19"	70°01'17"	5930	0.3	R ² S ³ 30
Plaza Cfilera (Lower	32°38'15"	70°01'07"	5980	0.5	R ² 10
Plaza Argentina	32°38'47"	69°56'40"	4190	4.0	G M R ² H A ¹ S T U Y

G: Guardaparques / Rangers
M: Servicio medico / Medical service
R: Servicio de Rescate / Rescue service
H: Helicoptero / Helicopter
A: Agua

S: Prestadores de servicios organizados / Organized service companies

T: Baños / Toilets

U: Mulas / Mules

N (numero / number): Sitios para montar n tiendas / Places for mounting n tents

X: Sin limite de cantidad de tiendas / No limitations for tents amount

Y: ASguna iimitacion en cantidad de tiendas / Some limitations for tents amount

1: limitada a fin de la temporada / with limitations ending the season

2: Inspecciones frecuentes / often inspections

3: Sólo el hotel y sus servicios / only the hotel and its services

4: Solo emergencias y bajo rigurosas iimitaciones / Only emergencies and under severe limitations

5: Sólo porteadores / Only porters

Distances, elevation differences, slopes and climbing times between main points

Name	Altitude	Elev diff (m)	Dist (km)	Slope	Time (hrs/min)	Elevatio n	Dist per len	Time per len
Guardaparques Horcones / Horcones	2950	0	0	-	0:00	0	0	0:00
Puente / Bridge 1	3070	120	2.72	4.4%	0:50			
Confluencia	3410	340	3.77	6.6%	1:25	460	6.49	2:15
Piedra Roia / Red Stone	3570	180	4.53	5.0%	1:45			
Piedra / Stone Ibanez	3790	220	7.19	3.1%	2:25			
Ex refugio PM Inferior	4050	260	4.89	5.3%	2:00			
Hotel Plaza de Mulas	4370	320	1.04	30.8%	1:15	960	17.65	7:25
Camp Plaza de Mulas	4350	-10	1.00	-1.0%	0:20			
El Semaforo	4550	190	0.65	29.2%	0:45			
Piedras Conwaw	4740	190	0.68	27.9%	0:50			
Plaza California	4840	100	0.44	22.7%	0:30			
Nevero	4925	85	0.34	25.0%	0:25			
Plaza Canada	5050	125	0.45	27.8%	0:35	680	3.56	3:25
Piedras de 5000	5170	120	0.47	25.5%	0:35			
Campamento Alaska	5370	200	0.66	30.3%	1:00	320	1.13	1:35
I NidodeCndores	5560	190	0.64	29.7%	1:00	190	0.64	1:00

Descanso primer recodo	5690	130	0.75	17.3%	0:55			
Balcón Amarillo / Yellow	5800	110	0.45	24.4%	0:45			
Refugio Berlin	5930	130	0.59	22.0%	0:40	370	1.79	2:30
Piedr. Blancas / White St	6060	130	0.46	28.3%	0:50			
Piedras Negras / Black	6180	120	0.39	30.8%	0:50			
Camp. 3 (Falso Polaco)	6230	50	0.31	16.1%	0:25			
Ex Refugio Independencia	6370	140	0.42	33.3%	1:00			
El Dedo	6460	90	0.36	25.0%	0:40			
Cueva (inicio Canaleta)	6660	200	0.83	24.1%	1:00			
Salida al Filo / To ridge	6800	140	0.23	60.9%	1:00			
Cumbre Aconcagua	6960	160	0.30	54.0%	1:30	1030	3.30	8:25

I Total Horcones - Summit **I 4010m | 34.56km | 23.4% | 26:40**