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CORDILLERA APOLOBAMBA '97

FINAL REPORT

(Wil Payne)

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CORDILLERA APOLOBAMBA '97
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Front Cover: Daf Morris on the head-wall of Codo del Diablo with Lago Kotani in the distance. K - Nine is on the left of the ridge immediately behind the lake.

ACKNOWLEDGEMENTS

The Cordillera Apolobamba '97 Expedition would like to take this opportunity to thank all those who made this project a success. Particular gratitude goes to The Mount Everest Foundation, The British Mountaineering Council and Spikomat: The Magic Box Company, without whose grants the Expedition would have floundered. Claire Kelbrick at Fujifilm provided slide film which was invaluable in recording the area, ascents and of course some fantastic memories. We would also like to thank SMC Mountaineering Ltd, Burmarc Ltd, Great Arete (Bangor), 14th Peak (Caernarfon) and Action Sports (Cambridge) for donations of equipment at reduced prices. This support would not have been possible without the persistence of Simon Smith's letter writing; a huge sacrifice from someone who had to drop out of the team. The medical kit was supplied by kind donation of Will Evans. I would like to thank all those who sponsored my run in the London Marathon; without this help The Expedition would have been thoroughly under-equipped. Finally on the financial front, thanks to Rod Macleod and Robert Ransom (the deadly duo of the "George Street Trio") for posing as the Chairman and Secretary of the Expedition's financial board.

In organising the Expedition special thanks goes to Pete at Travel Bug for his patience in arranging for us and our equipment to get to Bolivia and back by what can only be described as a contrived route. On the ground in Bolivia we owe a lot, if not everything, to Carlos Aguilar Prieto (President of Club Andino Boliviano) whose knowledge and help saved endless wasted time in a tight schedule; we look forward to seeing Carlos again in 1999.

Finally, I'm sure all the members of the Expedition would like to thank their families for understanding that boys will be boys.....

CORDILLERA APOLOBAMBA '97 INTRODUCTION

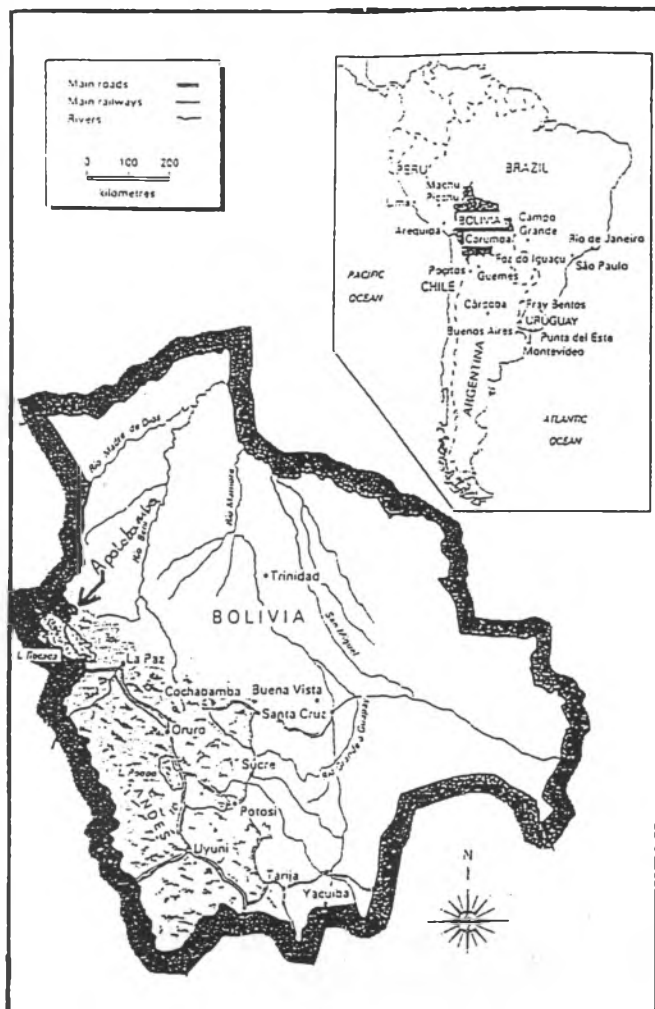
The aim of the Cordillera Apolobamba '97 Expedition was to undertake explorative climbing on objectives that would provide new and first ascents. Due to the lack of activity in the Apolobamba until the late '80s the potential for new routes in this region is extensive and accessible to mountaineers of moderate and advanced technical ability alike. Additionally, the weather between June and September is very stable resulting in the inevitability of achieving a great deal and not returning home disappointed.

During the four weeks spent in Bolivia this Expedition scored up a total of 6 previously unclimbed summits, a new British route and finished with a 48hr round trip ascent of Bolivia's best known mountain, Illimani (6402m). Nothing climbed on this Expedition exceeded the Alpine grade of AD which is a tribute to the potential for lower grade climbers in the area. The ascent of Illimani is not described in the report (any guide to mountaineering in Bolivia worth its salt details the normal ascent), however, the financial report includes expenses incurred to climb the mountain. In addition to the climbing objectives a basic survey was carried out of the valley in which we were based and a number of items of equipment were tested on behalf of our sponsors.

In writing this report I have tried to keep it concise and incorporate the most relevant information. It is probably best not to read the report cover to cover for fear of the potential Andean climber being tied up in the technical reports written for our sponsors and vice versa. As a form of reference, however, I hope it proves to be of great value for everyone and anyone who picks it up.

THE CORDILLERA APOLOBAMBA GENERAL INFORMATION

GEOGRAPHY



* These maps are intended to present a general orientation of the Apolobamba and cannot be considered to be accurate.

The Bolivian Cordillera Apolobamba is located north of Lake Titicaca on the border with Peru and around 350km from the capital, La Paz. The approximate Lat/Long of the range is within 69° 0` to 69° 15`W and 14° 45` to 15° 0`S. To the south of the range lies the barren and extremely cold Altiplano (temperatures as low as -10°C to -20°C at night), to the north east the tropical climate of the jungle makes for warmer conditions on this side of the range. From the Peruvian border the mountains form a linear range heading south east into Bolivia and can be separated into three general divisions. To the north from the Pelechuco valley, and extending into Peru, is the Soral and Kantantica group. South of Pelechuco is the central region consisting of the Huanacuni, Nube and Cololo groups finishing at the Passo Ossipal valley.

Between here and the settlement of Curva at the South Eastern tip of the Apolobamba, the Pupuya and Acamani groups form the third division. Access to the range is from Lake Titicaca, to the south, by unmetalled road to Curva or Pelechuco from where pack animals and porters can be arranged. It is also possible to access the range via Passo Ossipal on the track to the Sunchuli mine although hire of local labour is not so readily available from here. Contrary to what may have been said in the past regarding the difficulty of reaching the Apolobamba from La Paz, it is increasingly becoming better known and easier to access.

CLIMBING

The Apolobamba provides new route climbing potential for all levels of ability in a high altitude environment which still allows the climber to adopt an Alpine style. Most summits are between 5300m and 6000m. With a snow-line at just below 5000m these summits are attainable in a day from a high Base Camp. During a normal season good nevé should be expected on most faces and ridges although the afternoon radiant heat can result in crampons balling up. The nature of the rock in the area is incredibly friable and faces and summits are formed out of loose sedimentary deposits. As such any route involving just a mere scramble on rock is a serious undertaking especially due to the danger of rock fall and the limited opportunities of finding protection. On a more positive note, one of the aspects which makes the Apolobamba increasingly appealing as an option, is the potential for new routes at a low grade in a country with no bureaucratic hurdles for the climber. Whilst this sounds ideal bear in mind that an expedition in the Apolobamba is a serious proposition due to its remoteness and lack of rescue services.

WEATHER

Conditions in the Apolobamba are nothing short of being some of the best in the world. Fine, settled weather is the norm from the beginning of June until September. Whilst this is an obvious benefit in terms of being guaranteed good climbing it does mean that the radiant heat can render some slopes objectively unsafe in the afternoon. Temperatures range between 0°C during the day to as low as -20°C at night, although the radiant heat can make it feel very hot. It is wise to expect spells of poorer weather lasting no more than a few days when tropical fronts encroach on the mountains from the jungle. These spells will not be devastating to any plans but may become more frequent later in the season.

MAPS AND GUIDEBOOKS*

No detailed survey of the Apolobamba has ever been carried out and as a result maps are few and far between. Guide-book maps tend to vary to a large degree in accuracy although do give an adequate general impression of the range. Perhaps the best map currently available is a sketch map based on the Royal Geographical Society border survey (1918) and a basic survey carried out on Paul Hudson's expedition (1993).

Whilst Paul's map is not sufficiently detailed to be of use for specific mountain routes it should be credited for being accurate in as far as it goes to mark summits, valleys, paths etc. A copy of this map is available directly from Paul (address in Appendix 2).

Guidebooks are, again, scarce and tend to list ascents of mountains rather than route descriptions (e.g. J Neate's *Mountaineering in the Andes*). They do on the whole give a good introductory background to climbing in the Apolobamba. Also of great use in conjunction with the Paul Hudson map are the trekking guides to the area found in *The Lonely Planet Travel Survival Kit: Bolivia* and Hilary Bradt's *Backpacking and Trekking in Peru and Bolivia*. The British Mountaineering Council's monthly publication of *Mountain Info In High Mountain Sports* is of invaluable use in keeping up to date on recent activities in the range. Carlos Aguilar Prieto, president of Club Andino Boliviano based in La Paz, is currently doing research for a book which promises to be a complete history of climbing in the Bolivian Andes and will be a compulsory source for all potential new routers to consult.

*consult appendix 5 for useful publications and maps for research

CORDILLERA APOLOBAMBA '97
THE EXPEDITION

SUMMARY

Team	Wil Payne (leader), Hugh Morris (medical officer), Gareth Roberts (survey leader), Daf Morris, Peter Ward, Andy Macleod.*		
Dates	15th June 1997 - 14th July 1997 (of which, 18 days at Base Camp)		
Planned Objectives	Peaks: Points 5366 and 5335 East of Cololo Cololo 5916 East Face Four summits East of Cololo Posnansky, Sunchuli, Cunuareya Survey: To establish accuracy of existing maps & create a new one.		
Access	La Paz to Pelechuco by 4x4 takes 1 day (11hrs) 3 days with mules and porters to Base Camp (this can comfortably be done in 2 days and one day to return to Pelechuco)		
Base Camp Location	Lago Kotani East of Cololo. 69° 04.2` West 14° 53.2`.		
Realised Objectives	K5/K8# traverse 5310-5240	Central Buttress & North Face	1st ascent
	Bellina Blanca 5535 (K4)#	North Face & North Ridge	1st ascent
	Cololo 5916	South Ridge & South Face	New route
	Codo del Diablo 5315#	South Face & South West Ridge	1st ascent
	K - Nine# 5100	North East	1st ascent
	The Tower# 5100	West Flank	1st ascent

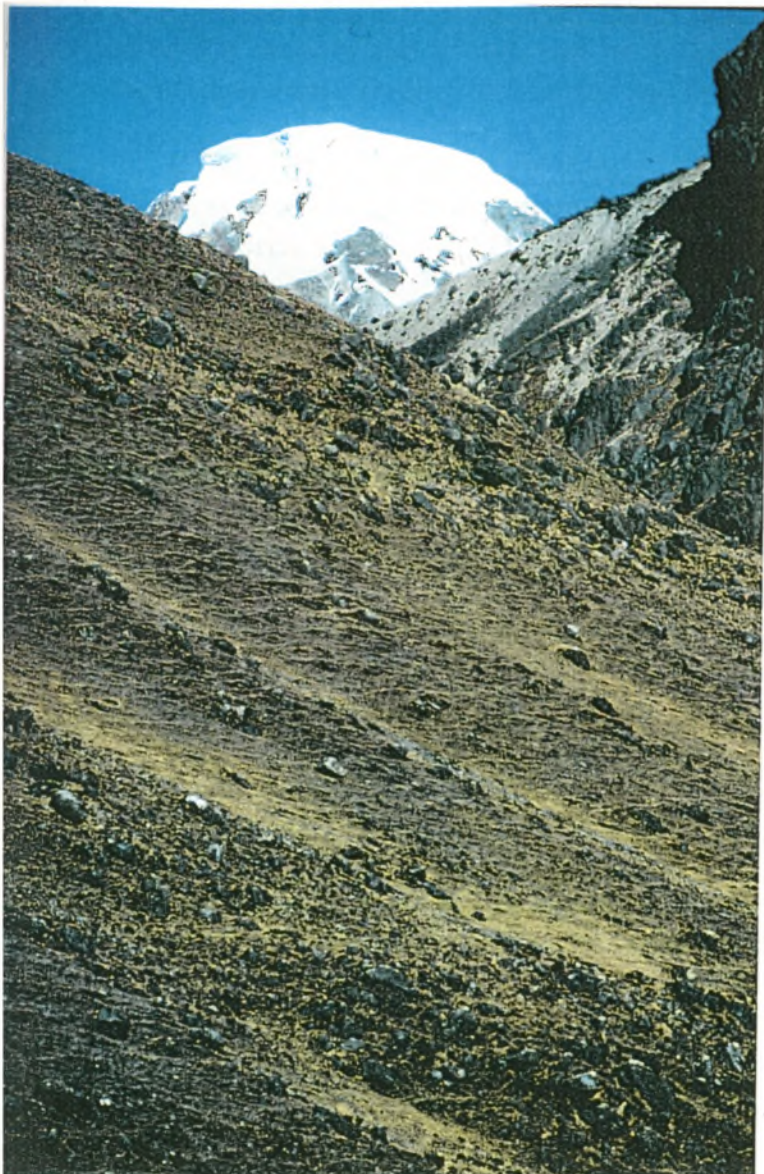
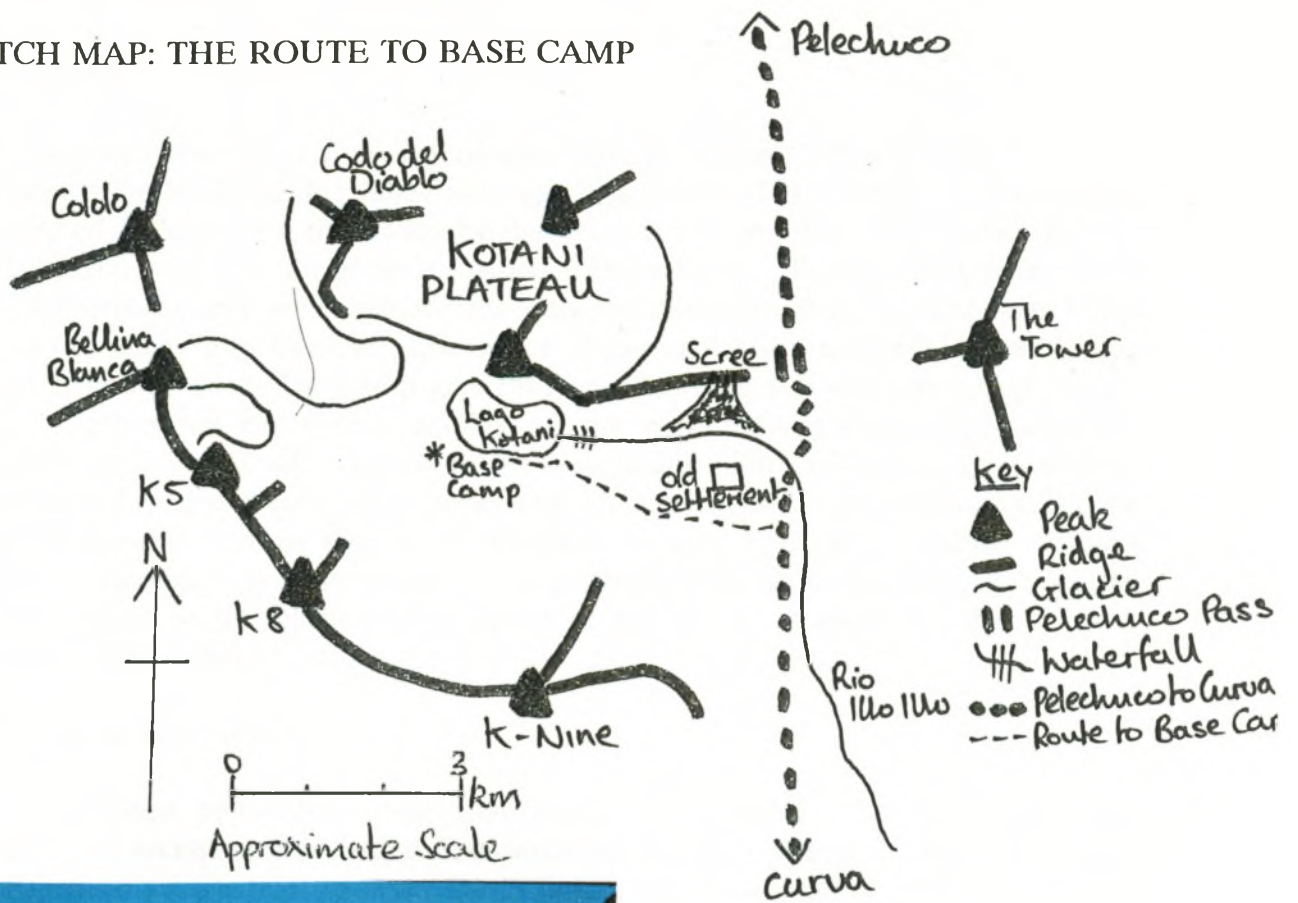
*Details of the Expedition team can be found in Appendix 1.

#These titles were given to identify unnamed summits for the purpose of surveying. In the wake of the Expedition, Bellina Blanca and Codo del Diablo have become recognised names by CAB. For information on previous ascents refer to Appendix 3.

ITINERARY

June	15 Sun	Depart from Manchester International Airport.
	16 Mon	Arrive in La Paz (am.) organise 4x4 to Apolobamba and camp cook.
	17 Tue	Buy food and cooking utensils.
	18 Wed	0500 depart from La Paz to Pelechuco. Arrive 1600. Organise mules and porters.
	19 Thur	0930 trek to Lavaerani (overshot BC valley).
	20 Fri	0900 trek to Passo Ossipal (wrong side of mountains).
	21 Sat	0900 Trace our route back to Lago Kotani (BC).
	22 Sun	Set up BC.
	23 Mon	K5/K8 Traverse.
	24 Tue	Bellina Blanca.
	25 Wed	Rest Day.
	26 Thur	Recce of the Cololo Glacier and ice fall.
	27 Fri	Rest Day.
	28 Sat	Up the ice fall to bivy under Cololo's East Face.
	29 Sun	Summit out on Cololo.
	30 Mon	Return to BC.
July	01 Tue	K - Nine. Rest Day.
	02 Wed	Codo del Diablo.
	03 Thur	The Tower. Dismantle BC.
	04 Fri	Trek to Pelechuco (6hrs).
	05 Sat	4x4 to La Paz.
	06 Sun	Rest Day. Buy supplies for Illimani.
	07 Mon	0500 La Paz to Estancia Una. Arrive at High bivy on Illimani 1645.
	08 Tue	Summit out on Illimani. Return to Estancia Una.
	09 Wed	Return to La Paz. Rest Day.
	10 Thur	Visit Club Andino Boliviano.
	11 Fri	Pack for return to UK.
	12 Sat	Depart from La Paz Airport.
	13 Sun	Overnight stop off in Madrid.
	14 Mon	Arrive at Manchester International Airport.

SKETCH MAP: THE ROUTE TO BASE CAMP



ACCESS TO BASE CAMP FROM PELECHUCO

Follow the Pelechuco to Curva trekking path for about 4 1/2 hrs to the top of the Pelechuco Pass at 4900m. A steep half hour descent follows to a valley floor bordered on the Pelechuco side by a vast scree slope. From the river at the bottom of this descent Bellina Blanca dominates the view at the top of the valley. Follow the river upstream by an ill-defined animal track keeping to the left of the valley for about 2 hrs until the eastern tip of Lago Kotani is gained.

left: view of Bellina Blanca from the old settlement under the scree slope on the way to Base Camp.

BASE CAMP

Base Camp was pitched at the western end of Lago Kotani. This is the first known expedition to be based in this valley although it is certain that a small group travelling light climbed Cololo from this valley by the West Ridge in 1996. The glacier melt in the lake means that it is not potable for use at Base Camp. To the south of the camp snow melt streams and pools provide the only useable water but, because local herds graze in the valley and use the same water source, it is well advised to both iodine and boil it before use. The camp gets the early morning sun and warms up quickly but in the afternoon the breeze coming off the mountains is channelled down the valley making it very cool. Access to the mountains South of the camp is straight forward whilst to the North steep faces and an active glacier prevent access to the summits without a serious degree of objective danger. The plateau below Cololo's East Face is accessed by some complex but relatively safe route finding in the ice-fall above the snout of the glacier. The snout of the glacier is approximately an hour from Base Camp. (Map p. 16).

ROUTE DESCRIPTIONS

The routes listed below are those that received successful ascents by expedition members. All ascents are recorded firsts with the Alpine grade in the left margin and times based on return trips to Base Camp unless otherwise stated. The approximate lines of the ascents and a map can be found on pp.14-16. A postscript to this list acknowledges route finding difficulties and failed ascents made by the Expedition.

K5/K8 5310 - 5240m

F Traverse via Central Buttress

H Morris, G Roberts, D Morris and W Payne, 23 Jun 1997

A straight forward traverse with minimal technical difficulty although care should be taken when negotiating loose rock on the buttress. Ideal for acclimatization.

From Lago Kotani ascend the scree which leads to easy scrambling on the Central Buttress (NE Ridge). The Buttress joins the glacial plateau above a short but delicate head-wall midway between the two obvious summits. Both summits are easily accessible from this point; the West Summit (K5) is the higher and more rewarding option with a short but airy snow ridge traverse whilst the East Summit (K8) provides convenient access to its North Face for a quick descent back to Lago Kotani. 6-7 hrs.

F West Summit via North Face

P Ward and A Macleod, 23 Jun 1997

A more direct line to the summit than the Central Buttress providing access to a simple West to East traverse of the plateau.

Contour the Central Buttress into the northern cwm and ascend the scree to

the North Face's snow-field. At the head of the snow-field a short couloir (snow to 50°) leads to the summit slopes and the airy snow ridge traverse. 6 hrs including the traverse and descent from East Summit.

Bellina Blanca 5500m

F North Face and North Ridge

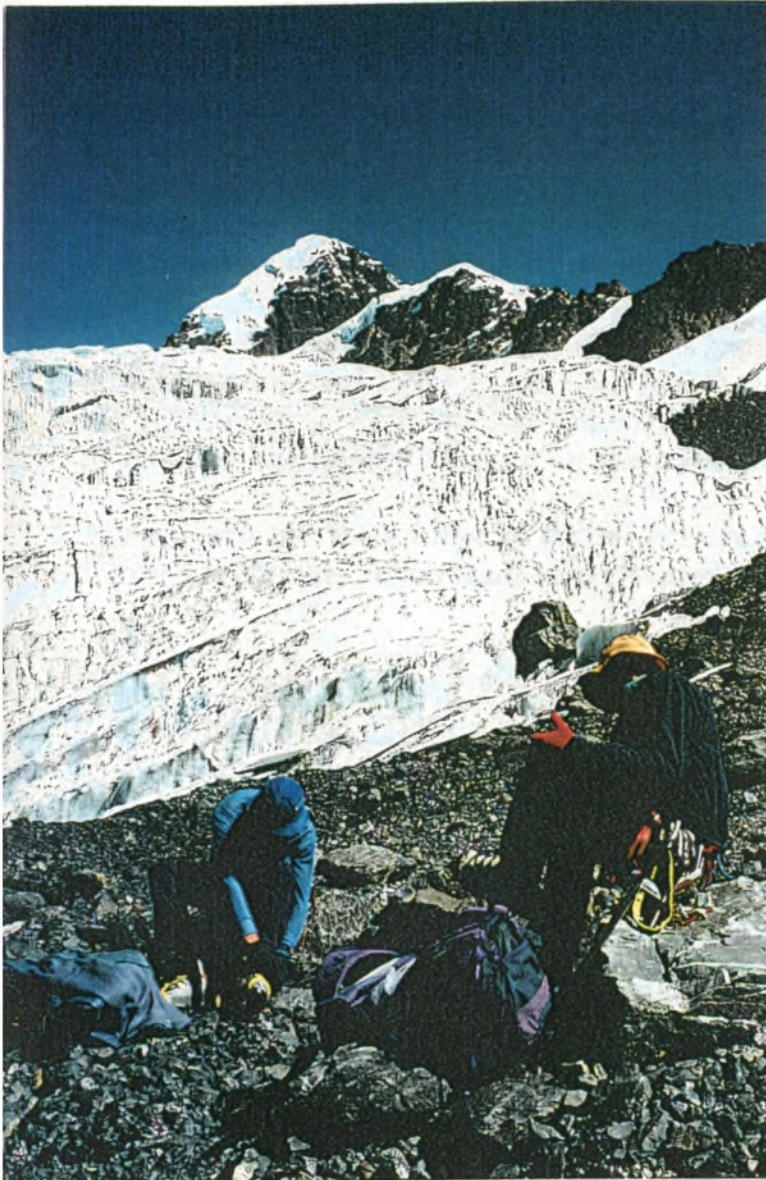
H Morris, G Roberts, D Morris and W Payne, 24 Jun 1997

Objectively a safe line although an early start is highly recommended to avoid difficulties with the softening shark-fins in the heat of the day.

Staying low, contour the scree above Lago Kotani for about 1 hr until Bellina Blanca's North Face is clearly exposed. Only then start the climb up the moraine to reveal the glacier in a hidden cwm (gaining vertical height too soon results in being on K5's North Ridge looking into the cwm below. This cwm separates K5 from Bellina Blanca). Ascend the North Face (snow to 50°) to join the summit ridge below a rock outcrop at the head of the cwm. Descent can be made by the mixed ground of the North Ridge. 8 hrs.



Above: ascending the summit slopes of Bellina Blanca with Lago Kotani below. The peak below and right is K5.



A spectacular pyramidal mountain with a variety of snow and rock routes. Access from Lago Kotani is via a relatively complex ice-fall leading to a plateau below the East Face. The ice-fall can be navigated by keeping close to the glacier's south side below Bellina Blanca though route finding may be time consuming. The plateau above the ice-fall is ideal for a high camp or bivouac before an assault on the mountain. 4 hrs from Lago Kotani to the plateau.

Left: Cololo's East Face and South Ridge above the ice-fall. The best route to the plateau is on the very left of the glacier [just off the picture].

PD South Ridge and South Face

H Morris, G Roberts and D Morris, 29 Jun 1997

Technically not a challenging climb although due to the mountain's height and the inevitability of being on it during the heat of the day the seriousness of the climb should not be underestimated.

Climb the South Ridge from the foot. At 2/3 height of the ridge a serac barrier must be delicately negotiated to access the South Face. Continue up the South Face to exit 35m east of the summit. In poor snow conditions great care should be taken in descent. 8-9hrs return from plateau.

The Tower 5100m

PD West Flank

P Ward and A Macleod, 3 Jul 1997

Very enjoyable route up the great slab on the west flank. Sound rock.

Approach from the top of the Pelechuco pass. Traverse round the first rock peak on the north side. A larger peak now lies ahead, ascend loose scree of the West face to emerge at the top left. Descend to the col below the tower. A direct line is taken up the right hand edge of the slabby face, avoiding steep rock immediately below the summit by traversing North, and back South to the top. 3 hrs return from the pass.

Postscript

Bellina Blanca: Route finding errors lost the party 1 hr after climbing onto the North Ridge of K5 and not contouring the mountain lower down to ensure access to the hidden cwm.

Cololo: The only spell of poor weather experienced on the Expedition was during the attempt on Cololo. The South Ridge and South Face team sat out a 2 hr spell of dubious weather in a snow-hole before completing a successful ascent of the mountain on 29 Jun 1997. On the same day Ward, Macleod and Payne were attempting the North Ridge of Cololo (first climbed by a Bath University team in 1989) approaching by a new route from the East. Access to the ridge was achieved but it was decided that a descent should be made due to apparently deteriorating weather. In hindsight this was the wrong decision as the weather remained dubious but stable.

Codo del Diablo: On the Devil's Couloir Alternative the right-hand fork was attempted before the left after the second pitch. Poor snow quality forced Morris and Roberts to retreat to the bifurcation and alter their route.

FUTURE POSSIBILITIES

Cololo's East Face

A rock face with a variety of route possibilities. The face is prone to a degree of rock-fall and as a result of the friable rock in the area it would be a serious undertaking. However, the face did appear to be more stable than any of the rock we encountered.

From the plateau below Cololo's East Face

A high camp on the plateau would provide quick access for single day assaults on Bellina Blanca, Posnansky, Sunchuli and Cunuareya from the North. These peaks still offer new route potential from this approach.

Points 5366, 5335 and 5300m on the plateau north of Lago Kotani

Access to these points is denied by an actively avalanching face above Lago Kotani. From the lake the plateau can be gained by a time consuming traverse of Codo del Diablo. This, however, is a contrived route when the valley to the North of these points (west of the Pelechuco to Curva trekking path before the Pelechuco Pass) presents direct access to the plateau and an excellent Base Camp position. All three points await recorded ascents.



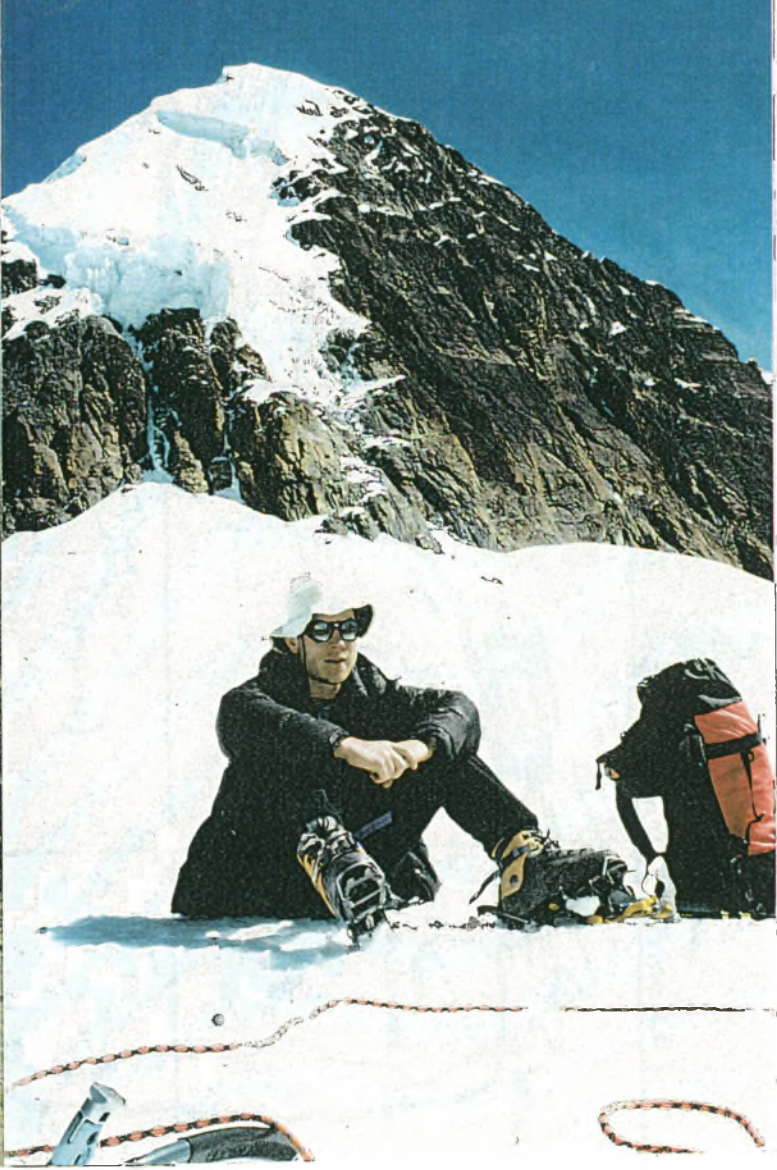
Above: The West Side of Lago Kotani. (A) K8 5250m. (B) K5 5350m. (C) Bellina Blanca 5500m. (D) Cololo 5916m. Marked are the approximate lines of the following routes: (1) Central Buttress, (2) North Face, (3) North Face & North Ridge, (4) South Ridge & South Face. (X) is the descent from K8 and (Y) marks Macleod, Ward and Payne's high point on Cololo's North Ridge.

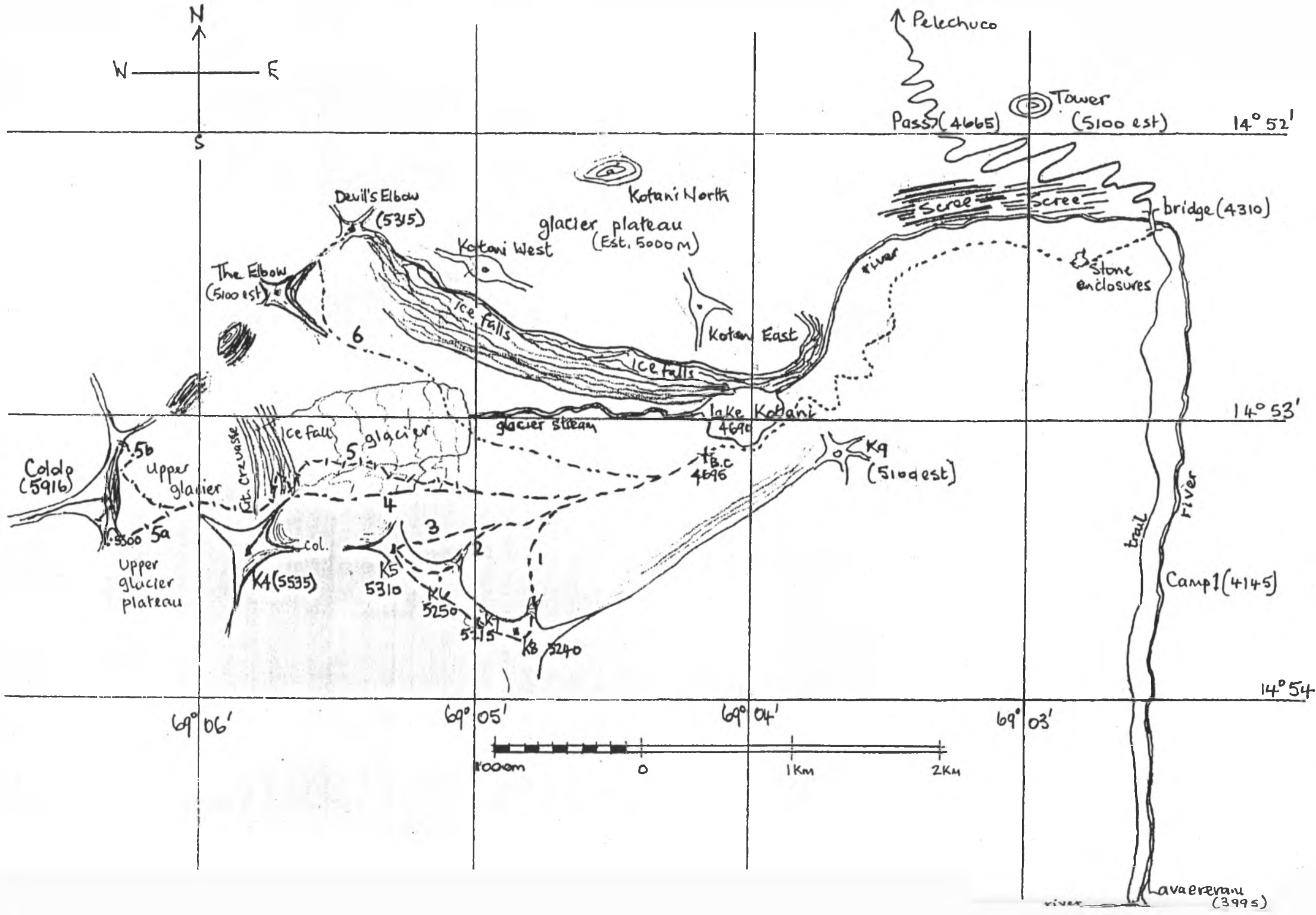
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Top: The Kotani Plateau from below Cololo's East Face. (A) Codo del Diablo 5350. (B), (C) and (D) have no recorded ascents. Marked are the approximate lines of: (1) South Face & South West Ridge, (2) The Devil's Couloir Alternative.

Below Left: The Tower 5100m from the south on the path to Illo Illo. Marked is the approximate line of the West Flank (X).

Below Right: The East Face of Cololo 5916m. There have been no previously recorded ascents of this face.





CORDILLERA APOLOBAMBA '97 SURVEY

The survey was carried out with relatively basic equipment and hence the map should not be considered entirely accurate. For information on the Magellan 2000 GPS, KVH Datascope electronic compass and Silva Avocet Vertech altimeter refer to the Expedition Technical Report. We are grateful to 14th Peak and Burmarc Ltd for the loan of this equipment.

As a qualification to the information on the map it should be made clear that the Northern (Devil's Elbow - Kotanis) section is less accurate than the South. This is due to unexplained bearing irregularities perhaps due to the magnetic influence of the rock on The Elbow.

The approximate lines of the Expedition ascents have been marked as follows: (1) descent via the North Face of K8. (2) Central Buttress route for ascent of K5. (3) North Face route on K5. (4) North Face and North Ridge route of K4 [Bellina Blanca]. (5) Route through the ice-fall to the upper glacier below Cololo's East Face. (5a) South Ridge and Face route on Cololo. (5b) Macleod, Ward and Payne's high point on Cololo's North Ridge. (6) South Face and South West Ridge route on Devil's Elbow [Codo del Diablo].

CORDILLERA APOLOBAMBA '97 EXPEDITION ORGANISATION

FLIGHTS FROM THE UK

There are currently 2 options:

1. Transatlantic flight to the US (usually Miami) followed by a connecting flight to La Paz with American Airlines. Prices from around £750 with standard transatlantic baggage allowance of 25kg.
2. Long haul flights with transfers in Spain and Argentina. Bookings with Aerolineas Argentinas or Iberia (the connection to La Paz could be with Lloyd Aero Bolivia). Prices from £656 with a two piece baggage allowance of 32kg per bag outbound and standard transatlantic baggage allowance inbound.

Option 2:

We chose the longer route for its competitive price and the large outbound baggage allowance which enabled us to carry disposable items from the UK (e.g. food, tarpaulin, pots, snow-stakes etc.) and save time organising them in La Paz. The only concern with this route is the number of transfers which could result in lost baggage.

Travel Agents:

Any decent travel agent can book these flights although with the volume of gear to take out it is good to book through an agent who can smooth the way with the airline. In this respect TRAVEL BUG (see Appendix 2) were invaluable to our expedition for organising the baggage allowance and free accommodation during transit.

Future options:

Until direct flights to Bolivia are introduced air-fares will remain expensive. Carlos Aguilar Prieto (President of CAB) believes that direct flights will be introduced under the new government in the next few years hopefully reducing prices. Watch this space!

TRANSPORT IN BOLIVIA

Options:

La Paz is well geared towards tourism. As such organising transport to the Apolobamba is a simple question of finding the best deal. Most tour agents will be happy to fulfil your wishes at the drop of a hat (ready to leave with less than 24 hrs notice). A good starting place for quotes is Calle Sagarnaga; just off Plaza San Francisco this road has most of the cities tour agencies. A visit to Club Andino Boliviano (Calle Mexico No. 1638) is a must to register your intentions in the Apolobamba and to pick up useful information. They will probably be able to put you in touch with someone reliable to drive you to the range.

Prices:

Prices will vary greatly according to whom you travel with and the number of vehicles you plan to use. Our quotes ranged from US\$450 one vehicle return, to US\$1,000 two vehicle return.

Our option:

We travelled with Carlos Aguilar Prieto's travel company Tauro Tours (see appendix) in one 4x4. This was sufficient to carry the six team members, a camp cook, the driver and all our equipment for three weeks. The price was a competitive US\$500 but the real deciding factor was Carlos's excellent local knowledge and contacts in the Apolobamba as well as being very friendly and helpful in organising the essentials in La Paz to enable a swift departure for the mountains.

A few things to be wary of:

1. Whilst making prior arrangements for transport from the UK may seem to be a wise planning step, too many groups arrive in La Paz to find they have been stood up by their contact who has found themselves a better offer. Unless you are sure of your contact's reliability it is probably best not to waste time on a matter which can be tied up in an afternoon once in the country.
2. Whilst access to the Apolobamba is now relatively straight-forward the roads are not sign-posted. A driver who knows the way is essential. Past expeditions have taken two days over a journey that can be done in eleven hours.
3. Once you have organised transport make sure you agree a price signed on paper and receipts change hands. Needless to say it is perhaps best not to pay the whole sum up front in case your driver decides to leave you stranded on the Peruvian frontier. If you do have problems, or at worst fail to be collected, the paper work will be invaluable for lodging a complaint against the agency. Don't be afraid to do this as the agents have been known to complain to the Tourist Police about their clients not paying up in the past.

FOOD AND PROVISIONS

Buying in the UK:

Everything you will need to supply Base Camp can be bought in La Paz (this includes all cooking utensils). The only commodities which will be hard to find in La Paz is dehydrated meals if you need these for on the mountain and tarpaulin for erecting a Base Camp shelter. If baggage allowances allow it is perhaps advisable to stock up on chocolate bars and other snacks which can be more expensive in La Paz. Of the items we did take from the UK the worthwhile ones were: Turkish Delight, Pepperami, and Tomato, Vegetable and Garlic Purees.

Buying in La Paz:

The obvious advantages of buying provisions in La Paz is that weight is saved for other gear on the flight, if you plan to have a camp cook it helps if he is with you when buying food and finally the garlic puree will not burst all over your clothes in transit! The choice of whether to buy from the street markets

or a supermarket is entirely a matter of preference although the supermarkets whilst being more expensive tend to have the things you would have brought from the UK that you may not find on the street.

Fuel:

Kerosene is relatively clean in Bolivia but filtering it before use will do no harm. It is available (when stocks allow) from any service station although the El Alto stations (on the Altiplano) are usually more likely to have it at a cheaper rate as this is outside the city. 30 litres was just enough fuel to supply a Base Camp of seven people for 15 days.

HIRING LOCAL LABOUR

Camp Cook/Guard:

The necessity of an Aymara speaking person with a non Spanish speaking expedition is a gamble. It is possible that contact with locals in the mountains will not occur but it can be useful to have some help at camp from someone who can smooth the way if needs be. Camp cooks/guards can be hired through the tour agents in La Paz. Quotes were between US\$20 and US\$30 per day and they will provide their own equipment.

Mules and Porters:

Past reports have recorded a wide range of prices for hire of porters and mules and this report is not breaking from the norm. We paid an extortionate 50 Bolivianos per mule per day and 100 Bolivianos for the two mule drivers per day. Apparently the reason for this was that we were off season and the rates have gone up since the Pelechuco to Curva trekking route has become more popular. This is probably not the case although it demonstrates the locals awareness about cashing in on tourism. The best advice must be to haggle hard and once a price is set write it down and sign an agreement. Our mistake was not to sign an agreement and then to be greeted by the shocking news of a new price once at Base Camp with altitude headaches hindering our argumentative abilities!

CORDILLERA APOLOBAMBA '97
FINANCIAL REPORT

Income:

	£ sterling
Personal contributions	5,211.90
Mount Everest Foundation	600.00
British Mountaineering Council	450.00
Spikommat: The Magic Box Company	100.00
Fujifilm	570.00
Flora London Marathon Sponsorship	722.25
Total income	<u>7,654.15</u>

Expenditure:*

	US\$	£ sterling
Air Travel		3936.00
Insurance		636.00
Transport to Apolobamba (1x 4x4)	500.00	312.50
Transport to Illimani (1x 4x4)	190.00	118.75
Mules (x8)	287.35	179.60
Porters (x2)	76.63	47.90
Porters on Illimani (x6)	80.45	50.28
Camp guard/cook (18 days)	360.00	225.00
Accommodation	249.40	155.87
Provisions	328.60	205.37
Fuji slide film		570.00
SMC Mountaineering Ltd (equipment)		678.90
Miscellaneous (stoves, cooking utensils & fuel)	461.30	288.31
Administration		223.00
Total expenditure		<u>7,627.48</u>

Final balance:

Total income	£7,654.15
Total expenditure	£7,627.48
Final Balance	<u>£26.67</u>

*Where appropriate an exchange rate of US\$1.6 to the pound has been applied.

CORDILLERA APOLOBAMBA '97
MEDICAL REPORT

The medical kit was supplied by Will Evans: Milfeddygfa'r Nant, Station Road, LLanrwnt.

Due to the remote nature of the Apolobamba any injury or illness requiring hospitalization must be considered as a life threatening situation. Under ideal circumstances an unplanned return to La Paz could take a minimum of three days.

Bearing this remoteness in mind it is advisable to have someone with medical knowledge to supplement the groups' First Aid capabilities. Hugh Morris was able to lend his veterinary skills to the expedition which were not only invaluable but an incentive to stay out of harms way! Here follows his report:

`The medical kit weighing in at 6¹/₂ kilos contained pills, potions, lotions, sutures, stitch guns, syringes, cannulae and scalpels for every eventuality. I am just thankful I was not called upon to exercise my bovine surgical techniques on anyone during the expedition!

Altitude sickness proved to be less of a problem than we feared with everyone adapting very well to the overnight transition from UK sea level to Bolivian Altiplano and the walk into Base Camp ensured good acclimatization.

One member of the party failed to heed the warning of `Mad dogs and Englishmen` (a Scotsman in this case) and suffered the consequences with severe sunstroke which took three days of anti-inflammatories and fluid replacement (pity there were no pubs handy!) to cure.

Mild bacterial enteritis, which did not require antibiotic `therapy`, was suffered at varying stages by all but the policy of boiling water for drinking, though expensive in fuel terms, did keep Giardia at bay despite the Base Camp water-hole being at risk.`

CORDILLERA APOLOBAMBA '97
TECHNICAL REPORT

MSR Whisperlite International Stove

3 of these stoves were kindly provided at discount by **Action Sports**, Cambridge and **Great Arete**, Bangor.

Comments:

In support of this stove it is light-weight, compact and designed for altitude use with a variety of fuels. However, it proved to be temperamental if the fuel was anything but clean and for greatest efficiency it required regular cleaning of the jet. At its best, despite the high maintenance, it is an excellent stove and the only real design fault is the plastic fuel pump which is prone to cracking at the point where it meets with the fuel bottle.

RAB Down Equipment

SMC Mountaineering Ltd. supplied the expedition with a variety of jackets and sleeping bags.

Glacier Premier Jacket

All round this proved to be a good jacket compromising the quantity of filling with limited bulkiness. Whilst it is warmer than its Glacier Guide counterpart, it could benefit from the hard wearing spandura patches on the shoulders and fore-arms. Unlike the Guide range, the rip-stop shell does not have the problem of jamming in the zips. Those who used this jacket were extremely satisfied with its performance.

Glacier Guide Jacket

The concept of the jacket is excellent. By compromising the fill weight to minimise bulk and with the hard wearing pertex 6 outer and spandura patches this is a jacket for active non-sweaty use. The theory, however, is better than the reality as the zips are prone to catching and the stitch through construction is not filled evenly throughout the jacket. A spandura baffle might prevent the zip from snagging while a little more care in construction would ensure an even fill. This is not a jacket for wearing whilst sitting at a cold Base Camp; at the risk of raising the price a box wall constructed model of this jacket could prove to be the ideal compromise.

Andes Guide Jacket

An excellent jacket for warmth but the temperatures need to be well below freezing to wear whilst active. It is hard to fault this jacket in any way, indeed, it was the envy of those wearing jackets of a lesser fill weight whilst sitting around Base Camp. Again, however, the zips do tend to snag on the baffles.

Sleeping Bags

The Expedition used a variety of RAB sleeping bags: Atlas 750 and 1000, Ladakh 800 and 1000. The tried and tested consensus, of all, was that these are outstanding bags of unbeatable quality. As the manufacturer promises the season/temperature ratings are on the conservative side with all four bags proving to provide adequate warmth at @-15°C (5200m) in conjunction with a bivibag. In addition space is not constricted; clothes and inner boots can comfortably be worn inside. Provided a suitable bag is selected for the environment a cold night is one less worry on the mountain.

Terra Nova Quasar tent

This tent has generally received a good press. However, during the Expedition one of the tensioning tapes on the fly-sheet felloff due to faulty stitching fortunately there was little wind so the problem was not serious. It should also be pointed out that the manufacturer was very forthcoming in repairing the tent free of charge.

KVH Datascope handheld electronic compass

Kindly supplied on loan by **Burmarc Ltd.**

Light and convenient with a well padded carrying bag and belt attachment. The compass works by recording a mean bearing to compensate for hand movement whilst taking a reading. It also has the capacity to store bearings for recalling at a later time. Whilst such an instrument is probably designed with the sailor in mind it is of excellent use for this kind of basic survey when weight and volume are an issue. On the whole it performed well but may have been affected by external factors in one area.

Avocet Vertech Altimeter

This device was a waste of money. Altitude readings fluctuated between 30-40m at the same spot, despite steady pressure. Also the thermometer readings were wildly inaccurate showing +7°C (off the wrist) in temperatures well below freezing.

Magellan 2000 GPS

Supplied on loan by **14th Peak.**

Robust and compact with belt attachment pouch. This device performed well in recording positions. It requires a minimum of three satellite pick-ups to produce a reading and was generally no slower than a couple of minutes in this function. We were also impressed with the speed of the device from Base Camp despite being in a relatively enclosed valley. In its altimeter function, however, readings tended to be way off the mark and comical at times.

APPENDICES

Appendix 1: Expedition Members' Details

<u>Name</u>	<u>Role</u>	<u>Age</u>	<u>Contact address</u>
William Payne	Leader	22yrs	16 Eltisley Avenue, Newnham, Cambridge. CB3 9JG 01223 328996
Hugh Morris	Medical Officer	54yrs	Undercliffe, Gt. Ormes Rd, West Shore, Llandudno. LL30 2AW 01492 876672
Gareth Roberts	Survey Leader	52yrs	Cynefin, 10 Yron Farm, Menai Bridge, Anglesey. LL59 5QY 01248 716858
Dafydd Morris		25yrs	Undercliffe, Gt. Ormes Rd, West Shore, Llandudno. LL30 2AW 01492 876672
Peter Ward		22yrs	2 Aviary Rd, Worsley, Manchester. M28 2WF 0161 7995936
Andrew Macleod		20yrs	15 Leighton Avenue, Pinner, London. HA5 3BW 0181 8661200

Appendix 2: Useful Addresses

UK Addresses

British Mountaineering Council, 177-179 Burton Road, Manchester. M20 2BB
Tel: 0161 445 4747 Fax: 0161 445 4747 e-mail: office@thebmc.co.uk

Expedition Advisory Centre, Royal Geographical Society, 1 Kensington Gore,
London. SW7 2AR Tel: 0171 581 2057 Fax: 0171 584 4447
e-mail: eac@rgs.org

Paul Hudson, 88 Ash Road, Leeds. LS6 3HD Tel/Fax: 0113 278 2531

Mount Everest Foundation, Gowrie, Cardwell Close, Warton, Preston.
PR4 1SH

Travel Bug, 597 Cheetham Hill, Manchester. M8 5EJ Tel: 0161 721 4000
Fax: 0161 721 4202

Bolivia Addresses

British Embassy, Avenida Arce, Casi Campos 2732, La Paz.

Club Andino Boliviano, Calle Mexico 1638, La Paz.

Andean Summits, Calle Sagarnaga N° 189 (esq. Murillo), La Paz.

Andes Expediciones, Plaza de Mendosa, Edificio Santa Anita Local N° 314, La
Paz.

Ozono Eco/Adventure Tourism Agency, P.O. Box 7243, La Paz.

Peru Bolivian Tours, Calle Loayza, Edif. Mcal. de Ayacucho Planta Baja, Of. 8.
La Paz.

Tauro Tours, Calle Mercado N°1328, Edificio Mariscal Ballivian, P.B. Local 4,
La Paz.

TAWA, Calle Sagarnaga N°161, La Paz.

Equipment Suppliers

Actionsports, Mitcham's Corner, 34 Chesterton Rd., Cambridge.
Tel: 01223 356207

Burmarc Ltd, Unit 12, Beaver Industrial Estate, Liphook, Hamps. GU30 7EU
14th Peak, 9 Palace Street, Caernarfon.

Fuji Photo Film (U.K.) Ltd., Fuji Film House, 125 Finchley Rd., London.
NW3 6JH Tel: 0171 586 5900 Fax: 0171 722 4259

Great Arete, 2 College Road, Bangor.

SMC Mountaineering Ltd., Unit 5, Atlantic Point, Atlantic Street, Altrincham,
Cheshire. WA14 5DE Tel: 0161 929 8800 Fax: 0161 929 8500

Appendix 3: List of Previous Ascents

Listed below are the previous recorded ascents of the mountains climbed by the Cordillera Apolobamba '97 Expedition. This information is compiled with reference to J. Neate's book *Mountaineering in the Andes*, *High Magazine's Mountain INFO*, the *Alpine Journal* and past Expedition Reports.

NAME/HEIGHT	YEAR	NATIONALITY	ROUTE
K5/K8 5310-5240m	1997	British	Central Buttress/W-E Traverse
	1997	British	North Face/W-E Traverse
Bellina Blanca 5535m	1997	British	North Face/North Ridge
Cololo 5916m	1957	German	W-SE Traverse
	1965	Japanese	From South
	1986	American	SE Arrete
	1988	British	Rock Ramps to West Ridge
	1989	British	North Ridge
	1989	British	West Ridge
	1993	British	(Unknown)
	1996	British	West Ridge from South
	1997	British	South Ridge/South Face
Codo del Diablo 5315m	1997	British	South Face/South West Ridge
	1997	British	South Face & Couloir/ South West Ridge
K - Nine 5100m	1997	British	South West Face
	1997	British	North West Chimney
The Tower 5100m	1997	British	West Flank

Appendix 4: Climbing Hardware

Equipment taken:

2 x 50m 9mm ropes	8 x hexagonals (with karabiner)
2 x 30m 10mm ropes	8 x tapes (with karabiners)
6 x drive-in screws	12x extenders (with karabiners)
6 x screw-in screws	4 x 1m snow-stakes
4 x channels	abseil tat
4 x blades	

Comments:

On the whole we were over equipped. The ice-screws were next to useless even on steep ground although this may have been due to the uncommonly late snowfalls preventing good consolidation of nevé early in the season. Likewise, the channels and blades saw next to no action due to the friable nature of the rock. Snow stakes are a must often providing the only anchor for belaying and rappelling while tapes and hexagonals proved to be the best protection on rock though these occasions were few and far between.

Appendix 5: Maps, Guidebooks and other Sources of Information

Map

Cordillera Apolobamba (1993: Paul Hudson). [available from Paul; address in appendix 2]

Books

Ben Box, *South American Handbook* (Bath: Footprint Handbooks Ltd., 1997).

Hilary Bradt, *Backpacking and Trekking in Peru and Bolivia: 6th Edition* (Bucks: Bradt Publications, 1995).

J. Neate, *Mountaineering in the Andes* (London: Expeditionary Advisory Centre, 1994).

Deanna Swaney & Robert Strauss, *Lonely Planet Travel Survival Kit: Bolivia* (London: Lonely Planet Publications, 1992).

Other Sources

High Mountain Sports: Mountain INFO (Northants: Greenshires Print Ltd.).

Royal Geographical Society: Expedition Advisory Centre & Map Room [for maps and past expedition reports].