KAZAKH APOGEE 2000 Post Expedition Report

KAZAKH APOGEE 2000

ROYAL ENGINEERS MILLENNIUM EXPEDITION

DZHUNGARIAN ALATAU

KAZAKHSTAN

3 JULY – 3 AUGUST 2000

10 Oct 2000

WO2 AS BATEY FRGS RE
DGIA
Denison Bks
Hermitage
NEWBURY
Berkshire RG18 9TP

Front Cover Watercolour by LCpl Carl Morrish
"Boulderfield, Lake & Abay Glacier"

ROYAL ENGINEERS MILLENNIUM EXPEDITION

KAZAKH APOGEE 2000

Project endorsed by the Royal Geographical Society (with The Institute of British Geographers)

Patrons

Patron Geographer – Lord Jellicoe KBE, DSO, MC, FRS
Patron Military Engineer – Maj Gen R Wood FRGS
Honorary Expedition Leader – Brigadier P Wildman OBE FRGS

Endorsement

Royal Geographical Society
Mount Everest Foundation
British Mountaineering Council

Main Sponsor

Norsk Data

Supporters

NERA SSL
NRSC
ULTRA
ESRI

Financial Contributors

Corps of Royal Engineers
Joint Services Expedition Trust
Army Mountaineering Association
Berlin Memorial Trust
Blythe Sappers

DGIA

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THE TEAM

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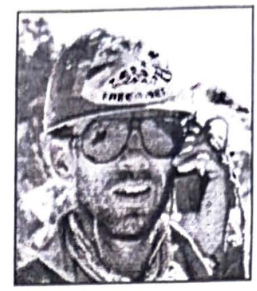
Expedition Leader

Capt John Owens
OIC/Climbing Leader

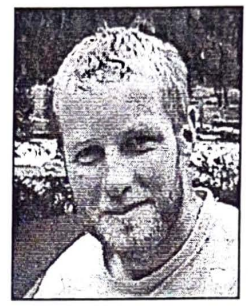
Capt Catherine Clare
RNO/Flora



WO1 (RSM) Mick Jenkins
Website/Sat Phone

SSgt Frank McCorriston
CILOR/Food/Technical

Sgt Allan Gransden
Technical/Laptop



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Equipment/Diary

Cpl Carl Burks
Climbing/Radios/Medic

Lcpl John Wharry
Equipment/Fuel/Power

Lcpl Carl Morrish
GPS/Watercolors

Spr Darran Weller
Sat Phone/Geology

Spr Andrew Grubb
Met Studies/Running

KAZAKH APOGEE 2000 - POST EXERCISE REPORT

3 Jul – 3 Aug 2000

Geo/42/780/3

See Distribution

Reference:

A. Our ATFA dated 2 Nov 00.
B. 4 Div Authority - 6527 G3 PAT dated 27 Jun 00.
C. CILOR Authority – LAND/Log Sp/C7402 dated 22 Jun 00.
D. Maps: Russian Series 1:200,000, 1:100,000 Topographic Mapping.

INTRODUCTION

1. The Royal Engineers Millennium Expedition, Ex Kazakh Apogee 2000 was an exploratory mountaineering expedition to the Dzhungarian Alatau of Southern Kazakhstan during the period 3 Jul – 3 Aug 2000. This was a high profile expedition endorsed by the Royal Geographical Society, The Mount Everest Foundation, The British Mountaineering Council and the Joint Services Expedition Trust. The majority of the 12 participants were from RE Survey, the one exception being the team medic. Participants are listed at Annex A.

BACKGROUND

2. 42 Survey Engineer Group has a history of high level adventure training; Andean Apogee to Ecuador in 1993, Indian Apogee to Ladakh in the Himalayas, 1995, Chile Apogee in 1997 and many other smaller but no less demanding outings to the Alps, Pyrenees, Dolomites, Norway and Scotland. Planning for the Millennium expedition started in 1998 with the intention of exploring the Chersky Mountains of Eastern Siberia. It became increasingly obvious that efforts to mount this expedition which required the co-operation of the Russian Authorities where in vain, the political difficulties created by the wars in Kosovo and Chechnya made negotiations impossible. The decision to dual plan an expedition to Kazakhstan was made in October 1999 and the Siberia expedition dropped in favour of Kazakhstan in February 2000.

3. The Republic of Kazakhstan is a former Soviet State which declared itself independent in 1991. A country four times the size of France it is mainly flat and borders China, Kyrgyzstan, Russia, Turkmenistan and Uzbekistan. Kazakhstan's main mountain range is the Tien Shan (up to 7000m) which borders Kyrgyzstan and attracts most visiting climbers. The Dzhungarian Alatau range (up to 4600m) of mountains was particularly chosen as it was 'rarely visited' and unexplored but relatively easy to get to (or so we thought). Both Kazakh ranges are accessed by flying into Almaty in the far south of the country. The Tien Shan are 'on your doorstep' which accounts for its popularity, the Dzhungarian Alatau is 500km NE of Almaty and borders China, which accounts in part for its inaccessibility to date and its appeal to us. Maps of Kazakhstan and the expedition area are at Annex B.

AIM

4. The aims of the exercise were as follows:

a. To carry out exploratory mid-altitude snow and ice mountaineering in a rarely visited range with defined objectives of making several 'first ascents'.

b. To introduce novices to the rigours and challenges of exploratory mountaineering in a remote region.

c. To carry out Geographic based Scientific studies of the area with the intent of producing a satellite image map and GIS database from data collected.

EXECUTION

5. General Outline. The expedition Itinerary is shown at Annex C. In addition the Expedition Diary and personal statements from several expedition members are at Annex D. There were 5 phases to the expedition. In outline these were as follows:

a. Deployment. The team travelled to Almaty in Southern Kazakhstan by KLM Airlines via Amsterdam arriving at 0200hrs on 4 Jul 00. 3 rucksacks were 'lost' by KLM which created paperwork and delay on arrival but fortunately they turned up on the next flight, two days later.

b. Almaty. Three days were spent in Almaty (Hotel Otrar), buying food and extra equipment, getting acclimatised to the hot weather conditions and making contact with the British Embassy. We also liased with our agents in-country, Kan Tengri and paid them the balance of their fee in cash ($10,000). Time was also spent checking and testing the communications equipment (Sat Phone/Website) for use up country.

c. Mountaineering and Exploration. The expedition plan was to explore the Dzhungarian Alatau range of mountains in Southern Kazakhstan. This is an Alpine like range, 250km long, running East/West which rise out of the Kazakh Steppe reaching heights of 4600m. The highest peaks border China and are accessed via long North/South running glaciated valley's. They have been visited by climbers only twice to our knowledge, once by a Soviet Team from St Petersburg in 1970 and by a British team in 1998 (to the same area). Our intention was to explore further East than previous expeditions and approach the high border peaks along the Abay Glacier Valley. Here we would set up a permanently manned base camp to climb and explore in two teams of mixed experience and ability. A full climbing report is at Annex E. Also intended was the collection of geographic and cultural information throughout the expedition as detailed in the Science plan, this can be found at Annex F.

d. R&R. The team spent the final 3 days in and around Almaty sight seeing and enjoying civilisations luxuries. Capt Catherine Clare visited a local hospital and donated our remaining medical supplies. A guide to Almaty can be found at Annex G.

e. Recovery to UK. The team returned to UK by KLM Airlines via Amsterdam arriving at 0740hrs on 4 Aug 00. The welcome home committee at Heathrow was much appreciated by the team.

6. Personnel. Twelve Soldiers and Officers from military units mainly within the Defence Geographic Imagery Intelligence Agency (DGIA) made up the team. Participants are currently serving at 42 Svy Engr Gp, JARIC, 1 ASLS, 14 Topo Sqn RE, HQ RE 3 Div and MDHU Frimley, QARANC. A full list of the team members their qualifications and expedition responsibilities is at Annex A.

7. Preparation. Planning for the exercise began ten months in advance of the departure date. The ATFA (Reference A) was submitted on 2 Nov 99. 4 Division provisional approval was granted on 1 Jun 00 (to allow money to be released) and approval was granted on 27 Jun 00 (Reference B) following diplomatic clearance, which was received on 21 Jun 00. CILOR was granted by HQ LAND (including Arctic supplement) on 22 Jun 00 (Reference C). Applications for grants from a variety of military funds were sought. Details can be found in the financial report at Annex H. A High Risk and Remote presentation was made to HQ 4 Div to satisfy safety requirements, details at Annex I. Bids were submitted to DLO, Bicester 5 months in advance and several phone calls and letters were required to ensure the best equipment was made available. Equipment list at Annex J. The Dzhungarian Alatau range is relatively unexplored and as such there is very little bibliographical research material available however what we did use is listed as part of the Royal Geographical Society application at Annex K.

a. Logistics Agency. We employed a specialist logistics agency, a company called Kan Tengri responsible for in country movement and support. They met us, organised hotels in Almaty, provided transport to the mountains and support during the climbing phase. In addition Kan Tengri provided the necessary paperwork and administrative support required in this former Soviet State. This included interpreter, a smooth path through customs, clearances to the border region and last minute authority to use our Satellite Telephone. Having a representative who could speak Russian and act on our behalf was invaluable.

b. Documentation. As is normal for military Adventure Training, Diplomatic clearance had to be granted by the MOD as well as by the Defence Attaché responsible for Kazakhstan, he in turn had to seek approval from the Kazakhstan Defence Ministry. However, the recognised Kazakh invitation to visit the country was provided through Kan Tengri and received on 2 May 00. This invitation, although simply a faxed list of personnel details proved to be the vital document required to gain our entry visas, move around the country and gain access to the border region (in-country authority was organised by Kan Tengri). Copy of invitation and visa information at Annex L. A copy of this document had been disseminated to road block check points and the border guards, our passports were checked against it and it was obvious that delays would have occurred had our names not matched this list (IE. if changes to personnel had occurred after 2 May 00). Documents carried at all times included:

(1) Passport and copies.
(2) Visa and Local Police Authority insert (acquired on arrival at hotel)
(3) MOD Form 90
(4) Authority for Sat Phone (organised in-country by Kan Tengri ($30 fee) but should apparently have been sorted 3 months in advance).
(5) Insurance Docs
(6) Customs declaration form (essential to have those items you may wish to take back out of the country declared on arrival, IE. Cameras, GPS, Sat Phone, Money).

c. Sponsorship and Endorsement. This expedition is the forth 'Apogee' expedition and can be seen as the culmination of eight years of experience, each expedition becoming more ambitious in its scientific aims in particular. During this time Norsk Data of Newbury have successively supported each expedition financially, again they have been the sole commercial sponsor. This support enabled the planning team to concentrate effort on gaining 'Approval' and endorsement for the scientific aspects of our Adventure Training . The approval of the Royal Geographical Society (RGS) and the Mount Everest Foundation (MEF) was sought in order to gain recognition for the Scientific contribution we felt we could offer as Military Geographers. The Application for RGS approval is at Annex K. Kazakh Apogee was the first unit expedition to received the endorsement of the RGS, MEF and the British Mountaineering Council.

d. Science Plan. The aim of the research phase of the expedition was to collect geographic data to populate a Geographic Information System (GIS). The expedition was linked back to the UK by Satellite phone, and using a laptop, through our website (www.apogee-expeditions.com) One of our key aims was to prove that data can be collected in the field in a remote region and sent back in near 'real time' to the UK for processing. The data collected included precise positioning using GPS, geological information, hydrology, access routes, climbing routes, and significant features. The final product, an interactive image map will include photographs, video clips, sound and text and be presented on the Website and CD ROM. The Science plan giving details of our data collection plans is at Annex F.

8. Training and Selection. A total of 33 soldiers and officers volunteered for the expedition. Team selection was based on availability, experience, (both novices and experienced climbers were wanted), additional skills offered to the team (medic, photographer etc.) and attitude towards adventure training. Two training and selection exercises were conducted in Scotland, Ex Highland Odyssey May/Jun 1999 and Ex Grampian Odyssey Feb/Mar 2000. All applicants were given snow and ice familiarisation except Capt Clare and LCpl Wharry who received training in Kazakhstan prior to any climbing. The training periods were invaluable to the expedition leaders in putting together, what turned out to be a hugely successful and happy team.

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9. Mountaineering and Exploration. This, the main phase of the expedition can be further broken down into three distinct phases:

a. Journey In. The 500km journey to the Dzhungarian Alatau was made in a 4x4 bus and took 15 hours to complete. The roads where good between Almaty and Sarkand but deteriorated until Pokatilovka where they became tracks. A 3 hour detour from Pokatilovka was necessary to get our papers 'stamped' at the Area Border Guards HQ. (See Para. 7b for information on documentation). 7 Km from the Border Guards post, a bridge collapsed under our bus which necessitated us walking the remainder of the distance to our camp site. All equipment (and the bus) was recovered but some food was destroyed in the river. This could have been a major incident but was contained by good procedures (we had walked across the bridge), and the endeavours of the Kan Tengri Staff who returned our kit early the next day.

b. Objectives/Peaks. The original plan was to approach base camp along the Little Baskan river and move East to the Abay Glacier Valley via the Suurly Col. Kan Tengri reported several bridges were down in the Little Baskan Valley and so our approach was made from the south across 'the bridge' finishing day one at the Border Guards Post. Our intention was to set up a static base camp below the Abay Glacier and explore the surrounding peaks in small parties. It became apparent that this was impossible as a large boulderfield and lake blocking this valley was impassable for our porters or horses. Kan Tengri had set up base camp below the boulderfield and did not have the manpower or horses to move it for at least 20 days.

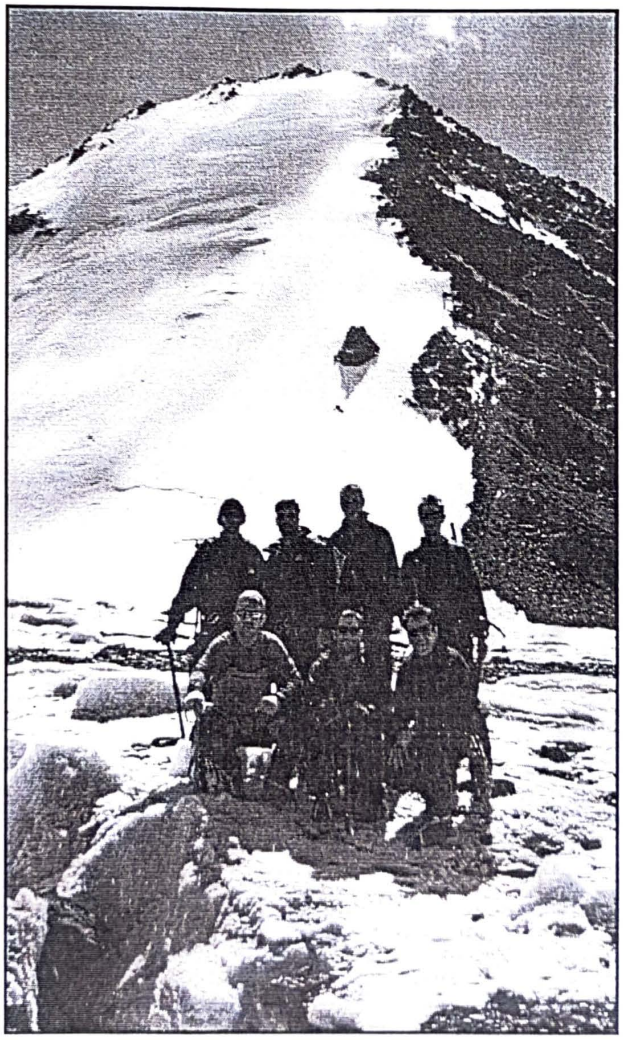
(1) East Valley. After exploring the lake and boulderfield it was decided to move to the next valley East. We left our base camp facilities and set up a camp in the East valley (EVC). After exploring East Valley for a five day period which included 3 ascents it was obvious there was not enough climbing to keep the team occupied for a further 20 days. Moving further East was not an option as there were not any high peaks within range of our supplies.

(2) Base Camp, Abay Glacier and move West. After returning from EVC it was fast becoming clear that we needed to move the whole base camp, however this was not possible without the aid of porters or horses. After some negotiation with the Border Guards they agreed to move 300kg of food and equipment to the Little Baskan Valley (a 25 km journey West) for a $100 fee. This movement of the entire team necessitated leaving many of the base camp facilities (Cook/Cook Tent/Generator) behind. The solution, to cook ourselves on small stoves allowed us the best of both worlds, base camp facilities for part of the expedition and 'getting away from it all' (even our own support team) for the rest. During the period back at base camp a small team of three managed to get passed the lake onto the Abay Glacier and made a first ascent on a 4000m border peak (Pik Matthew). The rest of the team made several other ascents of peaks surrounding Base Camp.

(3) Little Baskan Valley. The move to the Little Baskan took 2 days instead of the estimated one as the horses proved to be less fit than us. We set up camp at the junction of the Little Baskan and Shumsky valley's. This allowed us to spend the remainder of our time exploring and climbing in the Little Baskan Valley. We immediately set up an advance base camp 10km further up the valley on the prominent medial moraine of the glacier. We then spent the remaining 7 days climbing the surrounding peaks and collecting data to meet our scientific aims. The enforced movement of camps ensured we explored a huge area and had the opportunity to climb a large number of peaks, including Semeonov Tien-Shansky, the highest peak in the region. A detailed report of access routes, ascents and locations of camp sites is in the climbing report at Annex E.

c. Journey Out. The walk back from the Little Baskan Valley was a very arduous 23 Km in hot weather and on short rations. A very useful day was spent at the Border Guards Post sorting kit before the return journey to Almaty. After some delays we went directly back to Almaty in 4x4 safari type vehicle, the journey was completed without incident.

Seomonov Tien-Shansky. At the Top & At the Bottom.



10. Data Collection/Survey. A great deal of information was collected during the expedition in accordance with our science plan (Annex F). This will be collated and presented as a GIS database linked to an interactive image map. The final product will be produced on CD and made available on our website. The following written reports and will comprise the majority of the information displayed in the GIS:

d. Human Geography and climbing Features. Details of access routes including 'goings' information, climbing routes, proposed and achieved, locations of camp sites and any other significant features are in the climbing report at Annex E.

e. Geology, Geomorphology and Glaciological. A large part of this information is taken from studies carried out by Professor PA Cherkasov, a Kazakh Glaciologist of distinction who has studied this region for 40 years. Ground studies and the report at Annex M were compiled by Spr Darran Weller.

f. Flora and Fauna. Details of the many types of flora recorded during the expedition can be found at Annex N. The only wildlife seen was marmots, eagles, mice and weasel like creatures. Bear footprints were found near a river and evidence of Wolves was recorded.

g. Weather. The weather proved to be almost predictably rainy at 1500hrs daily yet maddeningly diverse as we experienced temperatures in the high 30's, sleet, snow, hailstones and fierce winds. An attempt at making sense of the weather can be found at Annex O.

11. Mapping & Navigation. The mapping used in-country was a 1:200,000 scale Russian Series map with a 4 Km Russian grid (which reads backwards). For familiarity and ease of use we enlarged this to 1:50,000 and added a UTM grid. All positions given in this report are using UTM grid reference system and additionally in Latitude and Longitude. Sheets used where; 12-44-20 -Sarkand- & 12-44-27 –Amanbyhtor. Maps can be ordered through Stanfords in London.

a. Kazakh Maps. The Kan Tengri staff had a 1:100,000 scale map (Sheet L-44-101) which was much more detailed than our enlarged 1:200,000, these were purchased from the government 'GEO' department on our return to Almaty. Address and full list of products (including digital data) can be found at Annex P. Kan Tengri would provide these, on request, to any prospective expedition for a fee.

b. GPS. There was much discussion before departure on the use of GPS in Kazakhstan as their use is still illegal in many former Soviet States. We had applied to the Kazakh authorities to use GPS but our position was not perfectly clear before departure. We took three Garmin 12XL hand held receivers and discovered they were openly for sale in Almaty (priced about the same as UK). They proved essential for logging data through out the expedition.

CULTURE & HISTORY

12. While the aim of the expedition may have been to explore and climb in the Dzhungarian Alatau, no trip of this type is complete unless you experience something of the country itself. Four weeks is a short time to gain any great insight into Kazakhstan or it's people but it is certainly enough to gain some lasting impressions of the country and the challenges it faces in the future. As always, the key to understanding the present-day lies in the past and any visitor to Kazakhstan should avail himself of the basics of Kazakh history. There are many excellent sources of information on the subject, many of which are listed in the bibliography of this report at Annex K. This report seeks to prepare the traveller with the essential basics and hopefully inspire him to learn more, these can be found at Annex G.

LIST OF ACHIEVEMENTS

13. Kazakh Apogee 2000 was Army adventure training at its most demanding and for that reason at its most rewarding. The expedition team succeeded in achieving all the stated aims. A summary of achievements is as follows:

a. Fifteen peaks were attempted, thirteen where climbed, seven of which where 'first ascents'. See list below.

b. Pik Semeonov-Tien Shansky (4622m), the highest mountain in the range was climbed. This was only the second known ascent and the first by a Western team. (1st Ascent by Russian team in 1970).

c. An area covering 600 Sq. Km was explored, which included 5 valley's and 5 glaciated regions.

d. Our website was continuously updated with the progress of the expedition and with data collected on the ground. This was a significant achievement in expedition communication.

e. All team member were challenged physically and psychologically by the demands of the expedition in often dangerous and difficult circumstances, significantly meeting the aims of Army adventure training to develop physical and moral courage, initiative, endurance and interdependence.

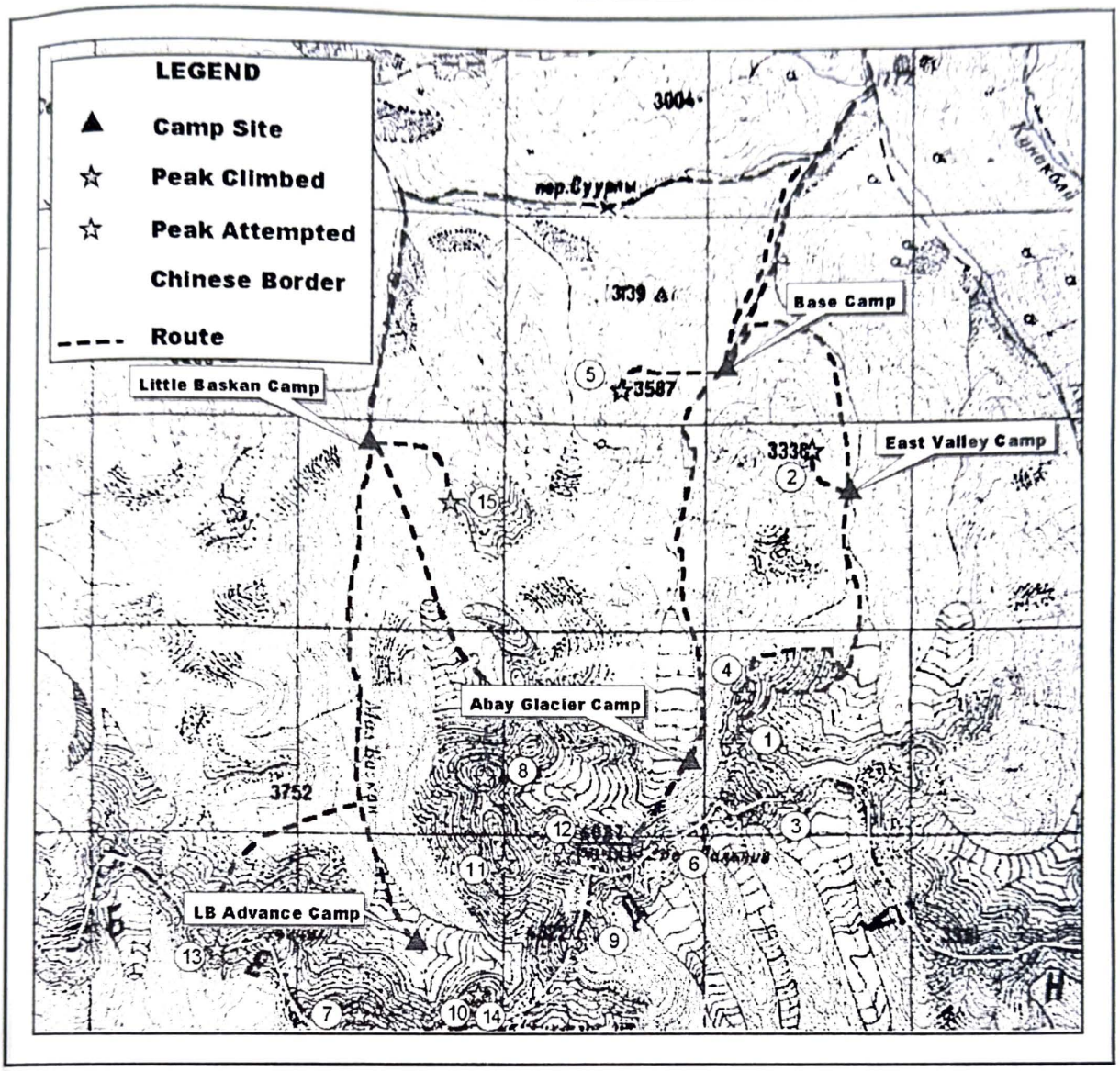
f. All the team increased their knowledge and experience of snow and ice climbing, particularly the novices who where represented on all ascents. Tomorrows leaders have been identified.

Serial	Date Climbed	Peak	Height	Number In Team
1	12 Jul	Pik Fougasse *	4080m	5
2	13 Jul	Pik Nangers *	3330m	7
3	14 Jul	Unnamed	4100m High Point	5
4	15 Jul	Pik Roy *	3940m	3
5	16 Jul	Pik Conandros *	3587m	3
6	17 Jul	Pik Matthew *	4440m	3
7	22 Jul	Pik Dzhambula	4350m	7
8	23 Jul	Shumsky	4300m High Point	4
9	23 Jul	Pik Semeonov-Tien Shansky	4622m	7
10	24 Jul	Pik Spudnik	4040m	4
11	25 Jul	Pik Apogee *	4511m	4
12	25 Jul	Pik Davidovitch	4501m	4
13	26 Jul	Pik Natalya	4207m	3
14	26 Jul	Pik Spudnik (different team)	4040m	3
15	27 Jul	Sapper Ridge *	3405m	2

* First Ascents

See climbing report for details of climbers and location map. (Map over page)

KAZAKH APOGEE 2000 MAP



SCALE
4 km

ADMINISTRATION AND LOGISTICS

14. Rations. All food consumed on the expedition was purchased in Almaty. CILOR was granted at the rate applicable to former Soviet Union States.

a. It was never intended that we would be operating at any great distance from basecamp, consequently, only a limited amount of lightweight mountain rations were bought in Almaty. As it turned out, changes in plans meant that all members of the expedition were away from base camp at least half of the expedition. In hindsight, a lot more dried rations, suitable for camp-stove cooking should have been purchased.

b. A detailed account of CILOR expenditure and rations issues can be found at Annex Q. A CILOR assessment was carried out on behalf of HQ LAND, details in Ration Report.

15. Stores and Equipment. A majority of equipment items and clothing were loaned from DLO Bicester and the Hermitage Climbing Club. The supply of kit from Bicester was generally excellent. A detailed breakdown of equipment loaned and recommended kit to carry can be found at Annex J to this report. Problems were encountered as follows:

a. MSR Stoves. These proved to be very efficient (see report for fuel consumption figures) when maintained. They do require very careful and regular cleaning for best use.

b. MSR Fuel Bottles. Overtightening of bottle tops rendered the rubber seals ineffective on two of our twelve bottles.

c. Plastic Boots. On several pairs of inner boots the lace loops were prone to ripping away. Limited repairs were made using super glue.

d. Karrimor 'Endeavour' 80 litre sacks. The design of this sack did not help in bulky load carrying. A wider design would be more efficient.

16. Publicity. Kazakh Apogee 2000 was a high profile expedition which gained publicity both within the MOD and in the local press and TV station. The Newbury Weekly News produced a series of articles which concentrated on the technological and mountaineering aspects of the expedition. On our return Meridian Tonight a daily news programme ran an item about the success of the trip. Details can be seen at Annex R.

a. Internet Website. Our website proved to be very popular and took 1500 hits within the first week of operation. We also have links to the MOD and Army sights as well as to our sponsors and supporters. This has proved to be a significant publicity tool for the expedition.

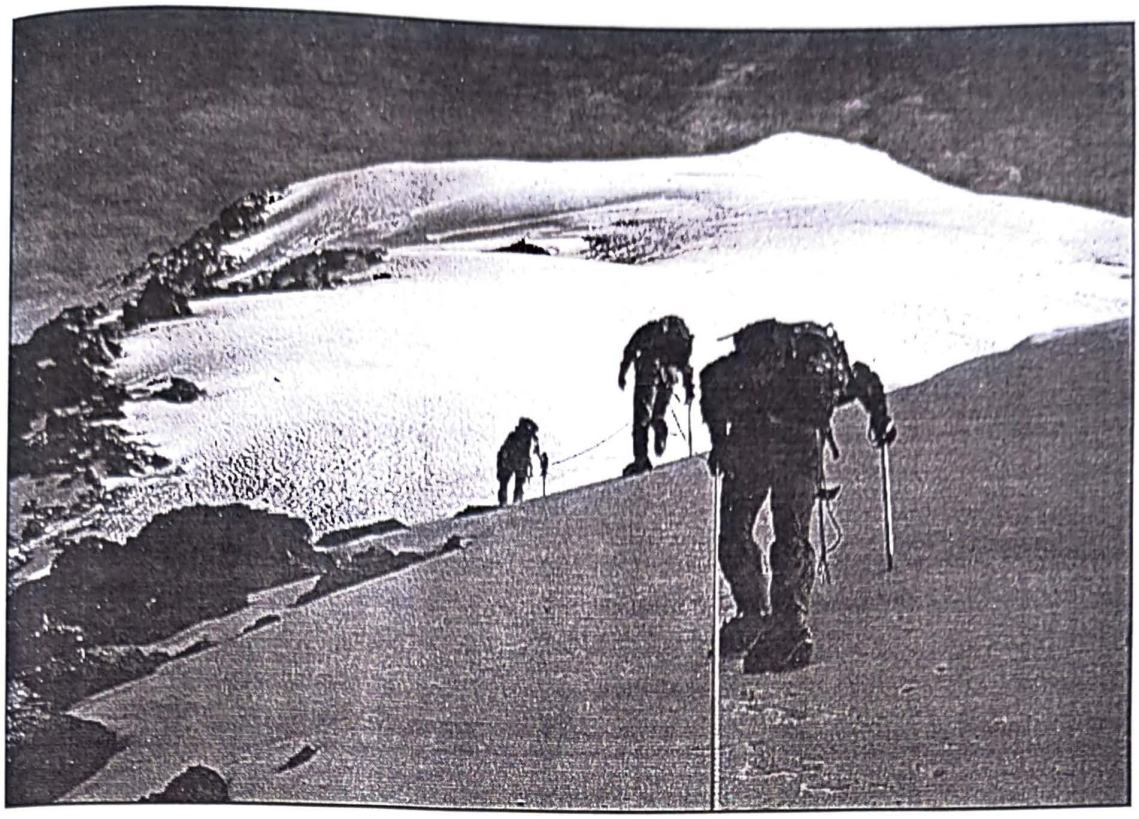
b. Post Expedition. Our PR efforts will now be concentrated on providing articles to Military and Mountaineering publications such as Sapper, Soldier, AMA Magazine, Highpoints, High, Defence Surveyors Association. In addition we will be producing an edited video film of the expedition.

c. Presentation. A slide show and film presentation of all aspects of the expedition was given to our patrons and supporters on 12 September 00. This will be repeated on several more occasions as required.

17. Insurance. Expedition and travel insurance was taken out with Sandhurst Insurance Services. The service was quick and simple and Mr Nick Shrubsall the MD very helpful in tailoring the policy to our requirements. No claims were made. Cover included, emergency medical expenses, activity equipment, personal liability, personal accident and flight cancellation up to £1,000 per man.

a. Personal Insurance. Individual team members were encouraged to take out Personal Accident Insurance such as PAX and personal kit cover, in addition to the group insurance.

b. Specialist Equipment. Separate cover had to be arranged for the Sat' Phone, Laptop and video camera. The unit policy was used for an additional fee.



An Attempt at Pik Shumsky 4442m.

Be careful crossing Glaciers in the dark or you might fall down a crevasse.

18. Finances. A significant part of any expedition planning is the raising of finances to match often ambitious plans. Kazakh Apogee 2000 was fortunate in having a sole commercial sponsor in Norsk Data who contributed £9,000 to the expedition as well as paying for air-time on the satellite and providing clothing and equipment. This allowed the planning team to concentrate on other areas of planning. The financial breakdown of the exercise, which gives details of income, expenditure and grants can be seen at Annex H to this report.

a. Kan Tengri. Employing an agent in-country can be expensive, in this instance it was money well spent as the bureaucracy in this former Soviet State and the language barrier made them invaluable. They were paid at their request £7,866 by bank transfer (on 14/6/00) and £6,849 ($10,000) in cash on arrival at the Hotel in Almaty. Cash payments (presumably to avoid the taxman) seems to be common practice in Kazakhstan. Tips to Kan Tengri staff and porters totalled nearly $500 and should be budgeted for.

b. Exchange Rates. The forces exchange rate is a great deal better (as it is fixed) than the exchange rates offered elsewhere. Unfortunately the only money we could get at the better rate was that coming directly from Military funds IE. CILOR and Divisional Grant. The $10,000 required to pay Kan Tengri their final fee was bought at Thomas Cook at a rate of US$/UK£ = 1.46. If a way could have been found to use the military system (US$/UK£ = 1.624) we would have saved £691. Think ahead if foreign currency is required.

c. Cash/Credit Card. The team leaders had a Visa card with expedition funds available and there was easy access to cash machines in the Hotel and several Banks. We did not need to use these facilities. We carried cash in $US for use in-country, although £UK can be changed in Almaty, $US are much more portable throughout the country. The majority of purchases were made in Kazakhstani Thenge (Th) which were bought in-country using $US. There were many Exchange booths in Almaty and although purchases in Kazakhstan were supposed to take place in Kazakhstani Thenge (Th) shops and Hotels took $US. The exchange rate remained fairly stable throughout the exercise, ranging from 143.5 - 144.5 Th/$.

d. CILOR. A detailed account of CILOR expenditure and rations issues can be found at Annex Q. (See Ration Report and Para. 15 for details).

e. Sponsors/Grants. As well as the significant sum contributed by Norsk Data, a further £9,420 was raised from Military grants. These are detailed in the financial report at Annex H.

19. Medical. A full medical report is at Annex S detailing precautions taken during expedition preparation, problems which occurred in Kazakhstan and recommendations for further exercises. The health of the team remained well through out the expedition. There were minor cases of sunburn, diarrhoea, inflammation from insect bites and several cases of blisters.

a. Hayfever. Two members of the team suffered with hayfever, especially when walking through meadows and pine forests.

b. AMS. Two cases of acute mountain sickness occurred, one at 3,500m, one at 2,900m, both made complete recovery when escorted to a lower altitude to rest and re-hydrate.

c. Insect Repellent. Despite frequent and rigorous application of Army issue insect repellent the mosquitoes won the day. Recommendations for alternatives are in the Medical report at Annex S.

20. Medical Cover/Advice. The remoteness of the area and the limited medical knowledge of the team highlighted the need for medically qualified personnel to accompany such expeditions in the future. Although no major medical problems were encountered it is crucial that a substantial supply of medical supplies is taken.

The Little Baskan Glacier

All alone in a range of mountains the size of the Alps

COMMAND AND CONTROL

21. Command. WO2 Batey RE was the expedition leader. Capt Owens RE as a qualified JSMEL (W) was the climbing leader and expedition OIC.

22. Communications. The requirement for a detailed communications plan was twofold, firstly it satisfied the Army's requirement for a safety and potential rescue communications plan and secondly our ambitious plans to transfer data back to our Website required communications technology and expertise not normally associated with this sort of expedition. An in-depth communications report at Annex T gives detailed descriptions of all equipment and procedures involved in this aspect of Kazakh Apogee 2000. In summary the technology used was as follows:

a. Nera 'world communicator' satellite phone and ancillaries. This satellite phone was loaned to the expedition by Nera Satellite Services and provided the means of 'delivery' for Telenor ISDN data and speech transmission.

b. Twinhead laptop computer. This equipment was loaned to the expedition by Ultra and gave large capacity RAM for the varied uses the team required whilst in country. The laptop was used to link to the satellite phone for transmission of E mails, digital still pictures and digital video movies.

c. Yamotshi VHF Hand Held Radios. The 4 hand held radio sets were hired from Kan Tengri for the duration of the expedition and alleviated the need to import radios and acquire frequencies through the Kazakh authorities.

d. Sony DCR Digital Video Camera. This camera was loaned to the team by Norsk Data, was small and compact, and produced outstanding mini DV digital video and still pictures for use with the web site.

e. Power. The large variety of equipment demanded we employ a renewable power source which was provided by a Honda 12v Portable Generator AC/DC at base camp and a 12v Car Battery further afield. Large quantities of 1v and 4v batteries for VHF radios and headtorches were also required.

f. Website. The expedition was online to the rest of the world through our website (www.apogee-expeditions.com). The Directorate of Corporate Communications (Army) (DCC(A)), gave final authority for the site to go 'live' in late July 00, and further authority and agreement of site content was given by HQ Defence Geographic and Intelligence Imagery Agency (DGIA). DCC then agreed to have a 'link' on the Home page of the Army site (a bonus) which ensured a very high 'hit' rate from it's extensive audience. The Website was created and managed by our WebMaster, Cpl Dave Fullstone. Copies of Web Pages can be found at Annex T.

23. Points Of Contact. The following list is not exhaustive but may be of use to future expeditions:

a. Kan Tengri. Director – Kazbek Valiev Tel: 007 3272 677866 Fax: 509323. Dauren Valiev. E-mail kazbek@kantengri.almaty.kz.

b. Consultant. Catherine Moorehead of Moorehead Mountaineering. She was the best link to Kan Tengri our agents in Kazakhstan. Tel: 01442 865804 Fax: 057 E-mail Katetmc@aol.com

c. British Embassy Almaty. Tel: 007 3272 506191/229 Fax: 506260 E-mail british-embassy@kaznet.kz.

d. Kazakh Embassy London. 33 Thurloe Square, London. 0171-581-4646. Visa Info. 0891-600207.

CONCLUSIONS

24. General. The expedition was a great success and all our aims were achieved. Exploratory Mountaineering is a superb activity for meeting the aims of Army Adventure Training.

25. Team Selection. An essential element for the success of any expedition is operating as a team. It is vital to hold team selection and training exercises to get the right balance of experience and novice.

26. Logistics Agents. Employing an agent in-country was essential in this bureaucratic former Soviet state for acquiring the necessary paperwork for internal travel and importing items such as Satellite Telephones. Having a representative who could speak Russian and act on our behalf was also invaluable.

27. Documentation. The vital piece of paper to allow us to apply for visas and travel around the country was the 'invitation' from Kan Tengri.

28. Medical. The remoteness of the area and limited medical knowledge of the team highlighted the need for medically qualified personnel to accompany such expeditions in the future. It was important that a substantial supply of medical supplies was taken.

29. Financial. Sponsorship or fundraising is necessary to offset the high costs of airfares and logistics for a major expedition such as this. The support shown by ND enabled the expedition planners to concentrate on other aspects of the expedition, such as the Scientific Plan.

30. Equipment. The provision of kit from DLO Bicester was very efficient. However, to get the best available kit the expedition leaders had to impress upon them the high profile nature of the expedition.

31. Rations. Significant changes of plan meant the majority of personnel were away from base camp for longer periods than planned. There were not enough dried rations purchased to meet the demands of the expedition.

32. Science Plan. Without doubt we as Military Geographers should give something back to the geographic community. It is very satisfying to have the expedition endorsed by the RGS and recognised as having a contribution to make.

33. Internet. A significant factor of this expedition was the Website and other technology employed during the climbing and exploration phase to transfer data. The ability to contact those at home was also a contributing factor to the success of the expedition. It was critical to have a knowledgeable person in the rear party to update the Website.

34. Always get off the bus before crossing wooden bridges.

RECOMMENDATIONS FOR FURTHER EXERCISES.

35. Preparation. A lead in time of two years is essential for any major expedition.

36. Logistic Agents. The services of Kan Tengri should be considered for any future expeditions to Kazakhstan.

37. Internet. The internet is an excellent addition to expedition safety, team moral and technical means of support as well as a PR tool. Any future expedition should consider its use if possible.

AS BATEY
WO2 FRGS RE
Expedition Leader

Annexes:

A. Nominal Role and Expedition Responsibilities.
B. Location Map & Map extracts
C. Itinerary
D. Diary & Personal Accounts
E. Climbing Report
F. Science Plan
G. Cultural Info & Guide to Almaty
H. Financial Statement
I. Safety Plan
J. Equipment Report & Kit List
K. RGS Application
L. Visa/Country Invitation/Sat Phone Licence
M. Geology, Geomorphology and Glaciology Report
N. Botany Report
O. Weather Report
P. Kazakh Map Products Information
Q. Ration and CILOR Report
R. Publicity Cuttings
S. Medical Report
T. Communications Report

Distribution:

External:

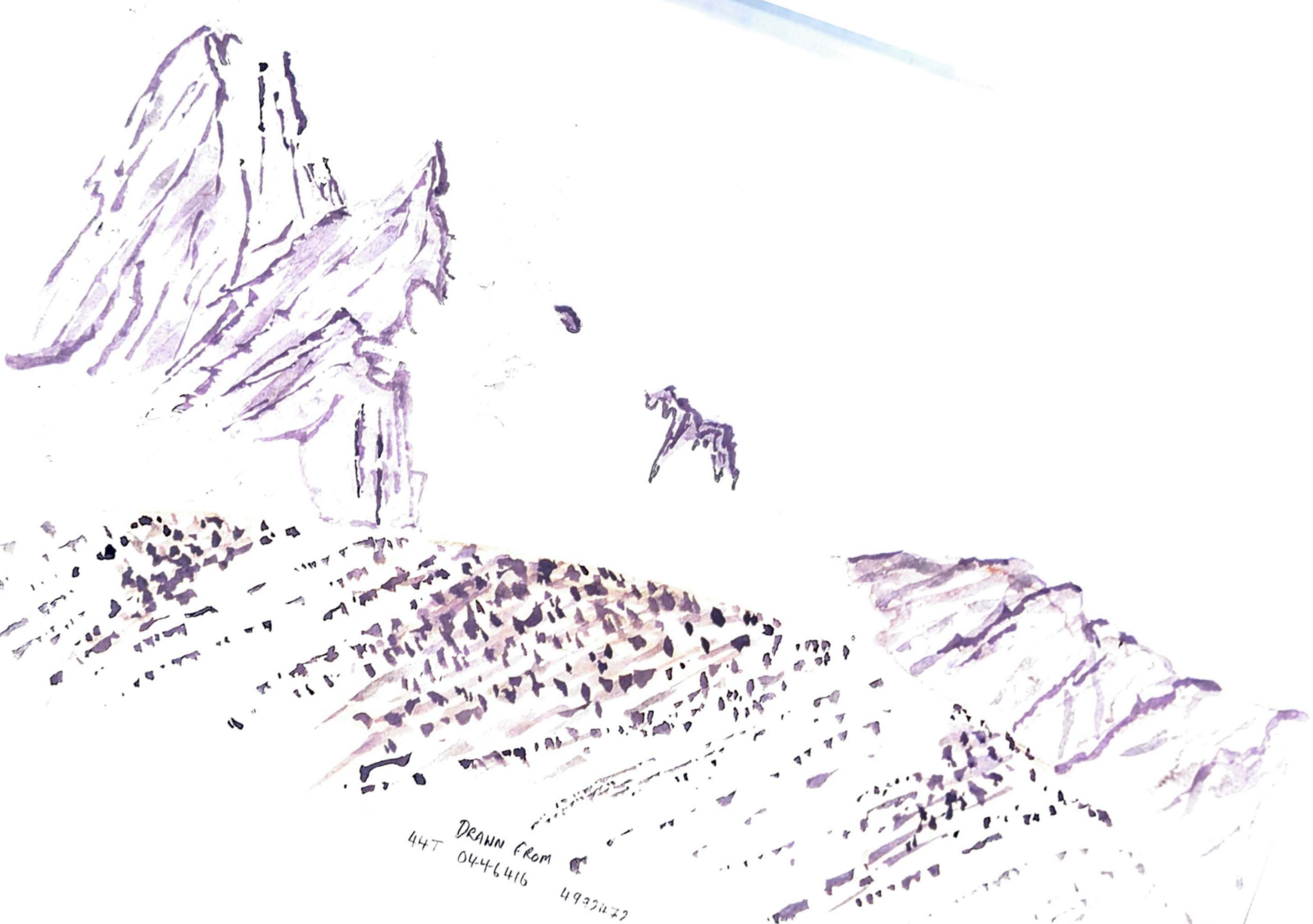
HQRE – EinC
DGIA - CEO
HQ LAND - SO1 G3 PAT
HQRE 3 Div
HQ 4 Div - G3 PAT
HQRE – Corps Treasurer – Lt Col RF Wilsher
MDHU Frimley – Attn Lt Col WJ Spencer
HQ 8 Bde NI – Attn RMIO
HQ AG (P&TC) (Army) Upavon – Attn IPAT, DITrg Pol (A)
DLO – SCOC Ops (COG) Loan Pool 29 – Attn Mr A Roberts
Defence Attaché – Moscow – Sqn Ldr Cunningham. X2
Royal Geographical Society – Exped Advisory Centre & Nigel de N. Winser
Mount Everest Foundation
British Mountaineering Council
Joint Services Expedition Trust
Berlin Memorial Trust
Blythe Sappers
BSES
Alpine Club of GB
AMA
REMEC
Earl Jellicoe
Maj General Wood
Brigadier Wildman
Moorehead Mountaineering
Kan Tengri

Sponsors:

Norsk Data
NRSC
NERA

Internal:

Comd 42 Gp
CI RSMS
COS
RATO
RAO
13 Sqn
14 Sqn
16 Sqn
JARIC – OC Production Sqn
1 ASLS – WO I/C
File
Exercise Members (x12)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Annex A To
Kaz PXR 42/780/3
10 Oct 00

EX KAZAKH APOGEE
NOMINAL ROLE

Serial	Rank	Name	Unit	Number	Quals
1	WO2	Batey	16 Sqn	24606641	JSMEL(S)
2	Capt	Owens	HQRE 3 Div	528928	JSMEL(W)
3	Capt	Clare	QARANC	542278	RNO
4	WO1(RSM)	Jenkins	16 Sqn	24529241	JSRCL
5	SSgt	McCorriston	JARIC	24670640	UEL
6	Sgt	Gransden	8 Bde NI	24762378	
7	Sgt	Beeton	JARIC	24821569	
8	Cpl	Burks	13 Sqn	24885305	JSMEL(W)
9	LCpl	Morrish	1 ASLS	24933504	
10	Lcpl	Wharry	14 Sqn	25049050	
11	Spr	Grubb	14 Sqn	25047469	
12	Spr	Weller	13 Sqn	24958659	

- WO2 Stuart Batey - Expedition Leader
- WO1 (RSM) Mick Jenkins - Website/Sat Phone
- Capt John Owens - OIC/Climbing Leader
- Capt Catherine Clare - RNO/Flower study
- SSgt Frank McCorriston - CILOR/Food/Technical
- Sgt Alan Beeton - Equipment/Diary
- Sgt Allan Gransden - Technical/Laptop
- Cpl Carl Burks - Climbing/Radios/Medic
- Lcpl Carl Morrish - GPS/Surveying/Paintings
- Lcpl John Wharry - Equipment/Fuel/Power
- Spr Darren Weller - Sat Phone/Geology
- Spr Andrew Grubb - Equipment/ Met Studies
- **Rear Party**
- Cpl Dave Fullstone - Webmaster

EXERCISE KAZAKH APOGEE
TEAM QUALIFICATIONS

A summary of the teams qualifications and experience is as follows:

Ser	Rank	Role	Name	Qualifications	Major Overseas Expeds	Locations
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1.	WO2	Leader	Batey	JSMEL(S)	4	Alps, India, Norway
2.	WO1	Deputy Leader	Jenkins	JSRCL, ML (S)	7	Alps, India, Chile, Equador, Norway, Borneo
3.	Capt	Climbing Leader	Owens	JSMEL(W), JSMEL (S), SGL	9	Alps, Kenya, Canadian Yukon, Nepal, Bolivia
4.	Cpl	Climbing Leader	Burks	JSMEL (W), SGL	4	Alps, India, Chile, Norway
5.	SSgt	Food/ Climbing leader	McCorriston	JSMEL (S)	6	Alps, India, Chile, Norway
6.	Capt	RNO	Clare	RGN, RM, RNO, Batles/Barts		
7.	Sgt	Technical Coordinator	Gransden			
8.	Sgt	Eqpt/ Diary	Beeton		3	Alps, India, Tasmania
9.	LCpl	Surveying	Morrish			
10.	LCpl	Eqpt/ Photo	Wharry			
11.	Spr	Eqpt	Grubb			
12.	Spr	Geology	Wheller			
				Total	33	

Expedition Leader: WO2 S Batey FRGS RE

Qualifications: JSMEL (S) Jun 89

Experience: WO2 Batey has been an active mountaineer for over 10 years with considerable Scottish and Alpine experience and high altitude experience from Ex Indian Apogee in the Himalayas where he was the deputy leader. He has lead a number of small unit trips to Scotland, the Lakes and the Pyrenees and is now developing his winter experience with a view to further qualifications. He has attended Ex Grampian Odyssey in Scotland this winter where he assisted with the instruction of winter mountaineering skills. Major overseas expeditions include:

Ex Iron Bosses	Jul 97	Alps	Alpine mountaineering incl ascent of Mont Blanc.
Ex Indian Apogee	Jul/Aug 95	India	High altitude climbing. Expedition 2IC and organiser:
Ex Trig Norge	Feb 95	Norway	Snow and Ice climbing.
Ex Iberian Odessey	Jul 94	Spain (Pyrenees)	Alpine mountaineering.

Additionally, numerous Unit Adv Trg trips to Scotland as primary instructor in Mountaincraft and leadership for junior soldiers.

Deputy Leader: WO1 MG Jenkins FRGS RE

Qualifications: JSRL Sep 89
ML (S) Jun 95
Snow and Ice Feb 90

Experience: WO1 Jenkins has organised and led a number of high calibre expeditions to various locations worldwide over the last 10 years. Two of these expeditions received support from the Joint Services Expedition Trust (JSET) and the RGS. WO1 Jenkins has gained a great deal of experience from service expeditions and is an accomplished mountaineer with experience of the greater ranges and alpine style climbing. He has attended Ex Grampian Odyssey in Scotland this winter where he assisted with the instruction of winter mountaineering skills. Major overseas expeditions which he has organised and lead include:

Ex Chile Apogee	Aug/Sep 97	Chile	High altitude climbing and surveying.
Ex Dolomite Backstop	Sep 96	Italy	Rock climbing/via ferrata.
Ex Indian Apogee	Jul/Aug 95	India	High altitude climbing.
Ex Trig Norge	Feb 95	Norway	Snow and Ice climbing.
Ex Iberian Odessey	Jul 94	Spain (Pyrenees)	Alpine mountaineering.
Ex Andean Apogee	Jul/Aug 93	Ecuador	High altitude climbing.
Exercise Orang Utan	Sep 91	Borneo	Ascent of Mt Kinabalu, rock climbing. Expedition 2IC.

Additionally, he has made regular visits to the Alps in the last 3 years.

Climbing Leader: Capt JPC Owens FRGS RE

Qualifications: JSMEL (W) Feb 93
JSMEL (S) Sep 89
SGL Aug 99

Experience: Capt Owens has been mountaineering for 15 years and has considerable experience of leading groups in the UK, Alps and the Greater Ranges. He has organised and led a number of high altitude mountaineering expeditions as well as organised numerous unit mountaineering trips (to the UK, Bavaria, The Hertz Mountains, Austria, Switzerland, as well as winter training in Scotland). He has extensive winter mountaineering experience and is an accomplished snow and ice climber. He passed the Summer Glacier Leaders course last year. Expeditions that he has organised and led include:

Ex Himalayan Dragon	Sep 99	Nepal	Climb of Mt Pokalde (5,885m) as part of major AMA expedition.
Ex	Aug 98	Alps	Alpine mountaineering.
Ex Ice Monkey	Mar 97	Canada	Ice Climbing
Ex Mardi Himal	Sep 95	Nepal	Attempt on Mt Chulis East (5,400m), Annapurna circuit.
Ex Inca Heights	Aug 94	Bolivia	Climb of Mt Illimani (6,500m), Mt Huyuna Potosi (6,018m), Mt Cerro Chacaltane (5,400m).
Ex Yukon Cheechako	Aug 92	Canadian Yukon	Alpine mountaineering in remote Mt St Elias region of North West Canada.

Ex Larkspur Trek	Aug 91	Alps	Alpine mountaineering.
Ex Dhanra Quadrant	Feb 90	Kenya	Ascent of Mt Kenya (Pt Lenana) with novice group.
Ex Valais Quadrant	Aug 90	Alps	Alpine mountaineering.

Each of his expeditions has been characterised by a desire to introduce relative novices to Alpine and high altitude mountaineering. A good example of this was Ex Inca Heights where he successfully led (with a second instructor) six relative novices to the summits of two 6,000m and three 5,000m peaks.

Deputy Climbing Leader: Cpl C Burks

Qualifications: JSMEL (W) Feb 00
JSMEL (S)
SGL Sep 95
Snow & Ice course Mar 97

Experience: Cpl Burks has many years experience of both winter and summer mountaineering in the UK and Europe. He has participated in a number of major oversees expeditions and has just successfully completed his JSMEL (W) assessment. He is also an accomplished rock climber. He has attended Ex Grampian Odyssey in Scotland this winter where he instructed winter mountaineering skills. Major expeditions include:

Ex Viking Venture	Mar 98	Norway	Nordic Ski touring.
Ex Chile Apogee	Aug/Sep 97	Chile	High altitude climbing and surveying.
Ex Dolomite Backstop	Sep 96	Italy	Rock climbing/via ferrata.
Ex Indian Apogee	Jul/Aug 95	India	High altitude climbing.

Deputy Climbing Leader: SSgt FM McCorriston RE

Qualifications: JSMEL (S) Jun 99.

Experience: SSgt McCorriston has been an active mountaineer for over 10 years with considerable Scottish experience. In addition he has a great deal of European experience, most of which has been in the role of organiser and leader. This has included expeditions to the Alps, Pyrenees, Bavaria, High Tatras (Poland), Norway and the Dolomites. He has high altitude experience from Ex Indian Apogee in the Himalayas and is now developing his winter experience with a view to obtaining his ML (W) qualification. He organised Ex Grampian Odyssey in Scotland this winter, which was designed to teach the Kazak Apogee team winter mountaineering skills. As well as organising the exercise he assisted with the instruction. Major overseas expeditions have included:

Ex Chile Apogee	Aug/Sep 97	Chile	High altitude climbing and surveying.
Ex Dolomite Backstop	Sep 96	Italy	Rock climbing/via ferrata.
Ex Indian Apogee	Jul/Aug 95	India	High altitude climbing.
Ex Trig Norge	Feb 95	Norway	Snow and Ice climbing.
Ex Trig Norge	Feb 94	Norway	Snow and Ice climbing.
Ex Iberian Odessey	Jul 94	Spain (Pyrenees)	Alpine mountaineering.

Ex Larkspur Trek	Aug 91	Alps	Alpine mountaineering.
Ex Dhanra Quadrant	Feb 90	Kenya	Ascent of Mt Kenya (Pt Lenana) with novice group.
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Deputy Climbing Leader: Cpl C Burks

Qualifications: JSMEL (W) Feb 00
JSMEL (S)
SGL Sep 95
Snow & Ice course Mar 97

Experience: Cpl Burks has many years experience of both winter and summer mountaineering in the UK and Europe. He has participated in a number of major oversees expeditions and has just successfully completed his JSMEL (W) assessment. He is also an accomplished rock climber. He has attended Ex Grampian Odyssey in Scotland this winter where he instructed winter mountaineering skills. Major expeditions include:

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Ex Indian Apogee	Jul/Aug 95	India	High altitude climbing.

Deputy Climbing Leader: SSgt FM McCorriston RE

Qualifications: JSMEL (S) Jun 99.

Experience: SSgt McCorriston has been an active mountaineer for over 10 years with considerable Scottish experience. In addition he has a great deal of European experience, most of which has been in the role of organiser and leader. This has included expeditions to the Alps, Pyrenees, Bavaria, High Tatras (Poland), Norway and the Dolomites. He has high altitude experience from Ex Indian Apogee in the Himalayas and is now developing his winter experience with a view to obtaining his ML (W) qualification. He organised Ex Grampian Odyssey in Scotland this winter, which was designed to teach the Kazak Apogee team winter mountaineering skills. As well as organising the exercise he assisted with the instruction. Major overseas expeditions have included:

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Ex Trig Norge	Feb 95	Norway	Snow and Ice climbing.
Ex Trig Norge	Feb 94	Norway	Snow and Ice climbing.
Ex Iberian Odessey	Jul 94	Spain (Pyrenees)	Alpine mountaineering.

Capt Clare

Experience: Capt Clare has a limited amount of hillwalking and climbing experience from the UK, Bavaria and the Canadian Rockies. She has conducted some basic winter trg in Bavaria.

QUALIFICATIONS:

Registered General Nurse (RGN)
Registered Midwife (RM)
Regimental Nursing Officer (RNO)...OPERATION PALATINE Sept 98-Apr 99 NOIC Army medical centres Croatia
Advanced Life Support (ALS)
Battlefield Advanced Trauma Life Support (BATLS)
Critical Incidence Stress Debriefing (CISD)

Regimental Nursing Officer. The role of the RNO emerged over 25 years ago with the rising troubles in Northern Ireland (NI). Due to a shortfall of Regimental Medical Officers (RMO's), experienced nursing officers were deployed in direct and autonomous support of a full battalion formation or equivalent. RNO's are currently employed in Bosnia and NI with access to qualified Defence Medical Services supervision for advice and support. RNO's have also deployed to Namibia, Kenya, Croatia and Angola.

An RNO on deployment will be faced with an enormous responsibility, not only in the day to day running of a medical centre but in the immediate and intermediate response to disaster. Major disasters are relatively infrequent, however an RNO must ensure that they can deal with such an event should the need arise.

The RNO Course is eight months duration with placements to many military medical establishments. The aim of the RNO is 'to contribute to the provision of health care within the area of operations with specific responsibility for the unit/sub-unit to which you are attached'. This course included training in Accident & Emergency, Genito Urinary Medicine, Physiotherapy, Dentistry, Mental health, Health promotion and Environmental health.

Medical Qualifications: Capt Clare is a Regimental Nursing Officer with experience of working independently in Bosnia. She is a qualified RGN, RM and has attended the Batles and Barts course.

Sgt A Beeton RE

Experience: Sgt Beeton has 11 years mountaineering experience in the UK and Europe and has taken part in a number of unit Adv Trg exercises as well as a high altitude mountaineering expedition to India. He has attended Ex Grampian Odyssey in Scotland this winter where he was taught basic winter mountaineering skills. Major expeditions include:

Ex Indian Apogee	Jul/Aug 95	India	High altitude climbing.
Ex Trig Norge	Feb 95	Norway	Ice Climbing
	97	Tasmania	Trekking

Sgt A Gransden

Experience: Sgt Gransden has participated in a number of Adv Trg exercises in the UK and Germany. He is a keen hillwalker, climber and Nordic and Alpine skier. He has attended Ex Grampian Odyssey in Scotland this winter where he was taught basic winter mountaineering skills.

LCpl CR Morrish

Experience: LCpl Morrish has participated in a number of unit Adv Trg exercises in the UK and Cyprus. He is a keen rock and sports climber and has some Scottish winter experience. He has completed all levels of the Duke of Edinburgh's Award scheme. He has attended Ex Grampian Odyssey in Scotland this winter where he was taught basic winter mountaineering skills.

LCpl J Wharry

Experience: LCpl Wharry has participated in a number of unit Adv Trg exercises in the UK and Bavaria. He conducted basic winter training in Bavaria in Jan 98 and is an accomplished Nordic and Alpine skier. He has attended Ex Grampian Odyssey in Scotland this winter where he was taught basic winter mountaineering skills.

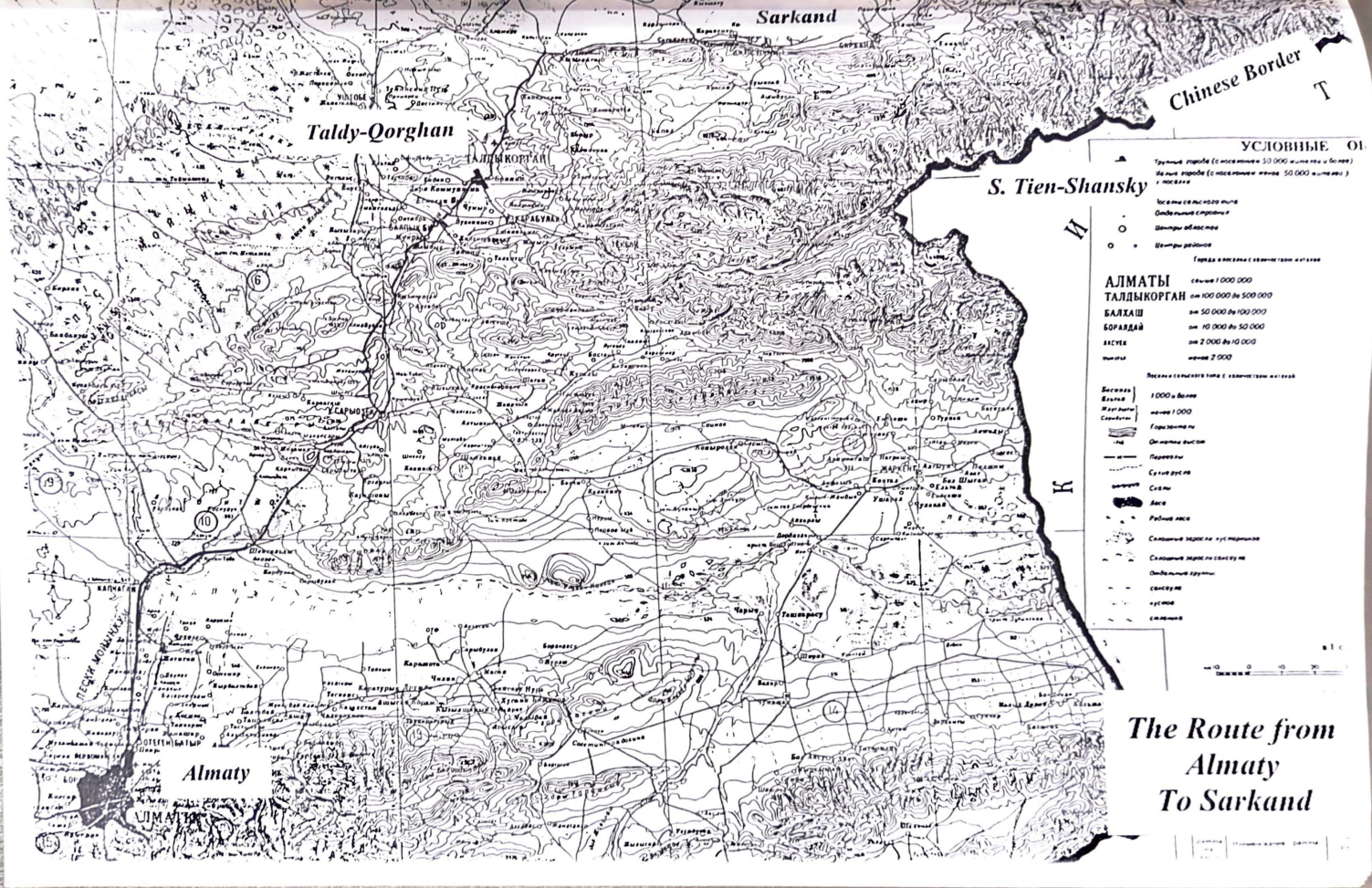
Spr D Weller

Experience: Spr Weller has winter and summer hill walking experience in the UK and Spain and Italy. He has attended Ex Grampian Odyssey in Scotland this winter where he was taught basic winter mountaineering skills.

Spr A Grubb

Experience: Spr Grubb has experience of hillwalking in the UK and Bavaria and is a competent rock climber. He has attended Ex Grampian Odyssey in Scotland this winter where he was taught basic winter mountaineering skills.

Annex B To
Kaz PXR 42780.3
10 Oct 00


Sarkand
Chinese Border
Taldy-Qorghan
S. Tien-Shansky
Almaty
The Route from
Almaty
To Sarkand


Sarkand
САРКАНД
Новопокровка
Покатиловка
Тополевка
Border Guard Post
Chinese Border
S. Tien-Shansky
The Route from
Sarkand
Into the hills


Border Guard Post
Suurly Pass
Base camp
Little Baskan Valley
Abay Glacier
Chinese Border
S. Tien-Shansky
The Route into
The hills


Suurly Pass
пер. Суурлы
(V-X)
Base camp
LBV Camp
East Valley
camp
Shumsky Valley
Little Baskan Valley
Abay Glacier
Chinese Border
пер. Дальний
(VI-IX)
Advance Camp
S. Tien-Shansky
пер. Аманбухторский
The Expedition
Area

KAZAKH APOGEE

UTM/WGS 84

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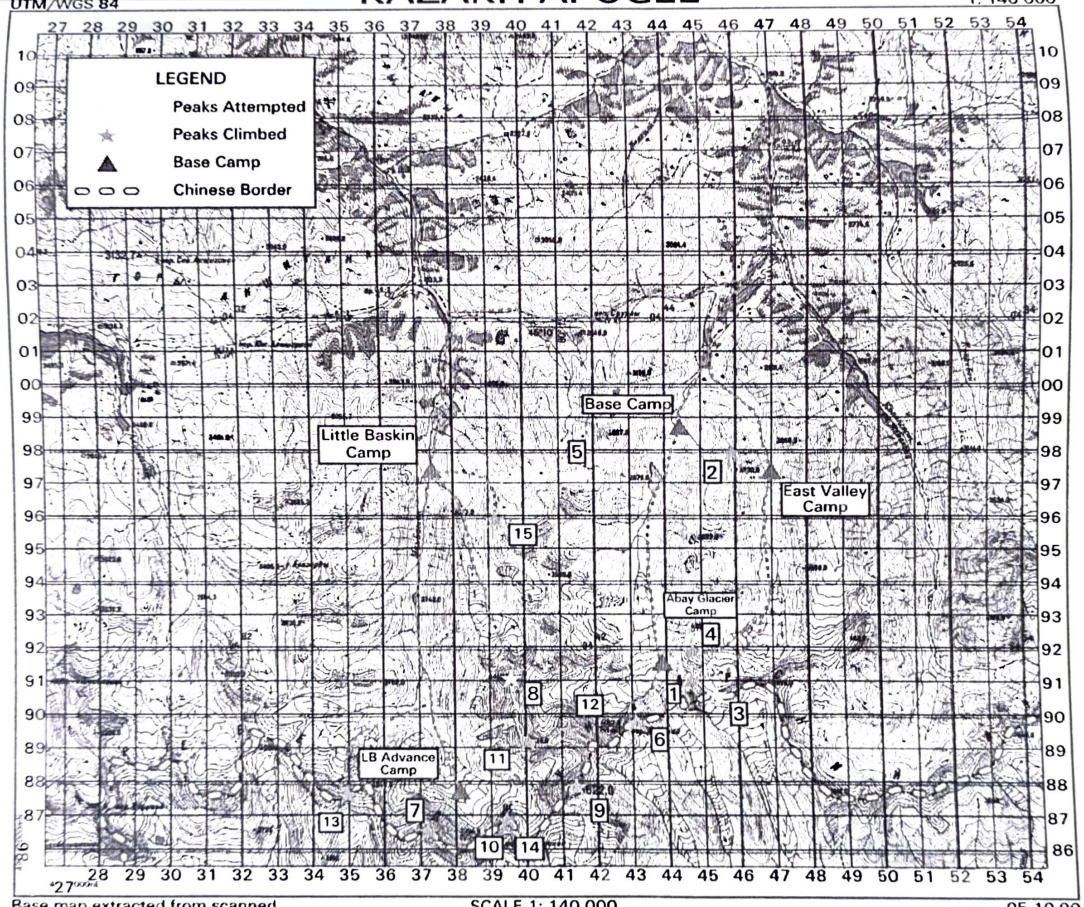


Base map extracted from scanned Russian 1:100k mapping.

SCALE 1: 140 000

5 0 5 Kilometres

05-10-00

Annex C To
Kaz PXR 42/780/3
10 Oct 00

KAZAKH APOGEE 2000

ITINERARY

- July 3rd - Depart London
- 4 - Arrive Almaty
- 5/6 - Almaty
- 7 – Journey to 'the Bridge'.
- 8 – Border Guards Post.
- 9 – Walk in to Base Camp. Recce. Boulder Field and Lake.
- 10-15 – Move to East Valley Camp – Climbing/Exploration of East Valley and border peaks.
- 16-18 - Base camp – Climbing/Exploration of Abay Glacier, lake, boulder field and surrounding region.
- 19/20 – Move to Little Baskan Valley with Horses via Suurly Pass. Set up Base camp.
- 21 – Set up Advance Base Camp on Glacial Moraine.
- 22-27 – Climbing/Exploration of Little Baskan, Shumsky & Violetta Valley's.
- 28 – Walk out to Border Guards Post via Suurly Pass.
- 29 – Border Guards Post
- 30/31 - Return to Almaty
- Aug 1/2nd - Almaty
- 3 – Depart Almaty/Arrive London

Annex DTo
Kaz PXR 42/780/3
10 Oct 00

KAZAK APOGEE DIARY

FRI 30TH JUNE 00

All Expedition members minus Cath (still on her sunshine hols!) meet up at Norsk Data at around 1600 hrs. The final farewell from our sponsors included a photo call with the satellite phone we have borrowed from them. They also very generously presented us with a cargo bag, sweat shirt, light weight fleece, and a polo shirt each.

At around 19.15hrs, we make our way to the Blue Boar Inn near Chieveley, for the expedition farewell dinner. The guests for the evening were General Wood and his wife, and Brigadier Wildman and his wife. The evening turned out to be most agreeable, the plan to not have a seating plan turning out to be a very good plan indeed! The meal was very salubrious, and the partaking of a few scoops and some fine "vino de Calapsio" made for some good "craic" with a few words of wisdom spoken informally by General Wood, and our Chief IC, Stuart Batey.

SAT 1ST, SUN 2ND JULY 00

The weekend sees probably the least popular part of any expedition: the packing and weighing of kit. Having said that, when you get to the bottom line, it is that you have a weight limit per man that you cannot exceed, and once you have packed your "MUST TAKE" gear, there's not much weight allowance left to pfaff around with. This was a bitter pill to swallow for the TERA Techs in the group, the realisation dawning that they will be separated from their over sized handbags for a month. Rumours abound that between them, they have dismantled a hair drier and distributed the parts amongst themselves, and discreetly stitched the pieces into their Bergans. This folly will be exposed when they will have to seek the help of a Topo or Repro Tech to put it together again.

Come 13.00hrs on Sun, the Mapric classroom was cleared, and all kit packed. No doubt we will be boarding the plane wearing Goretex jackets loaded with batteries and karabiners, and other small heavy things to cheat with our baggage allowance a little. A few of us had time to enjoy John Stamps leaving do in The Wooden Horse Club on Saturday night. Farewell, John.

MON 3RD JULY 00

Early breakfast was taken at 06.00hrs. This left a slightly bad taste, thoughts still of "Le Bleu's" victory of Euro 2000 hours before still lingering. Personally, I boycotted a usual favourite in the morning, French toast. The boycott will be lifted on our return, because let's face it, they are the best team in the world. But don't tell them that.

We arrive at Heathrow in plenty of time, and after checking in, breathe a collective sigh of relief that a couple of kgs over the baggage allowance here and there was no problem. Frank, Al G and myself purchased some fine malt Whisky and a bottle of Port between us, knowing it may have it's uses – whether that be winning favour with some difficult porters, simply exchanging craic and culture with some friendly locals, or for personal use should, for instance we lose half our kit and food down a river; well you just never know.

During our change at Amsterdam Airport, we managed to avoid any gloating French supporters – they were still hungover in Rotterdam.

MON 3RD JULY (Cont)/TUE 4TH JULY 00

The six-hour flight from Amsterdam – Almaty was a pleasant one. It could be said that the KLM staff were a wee bit shy with the drinks trolley, but those of us still awake could console ourselves with the alluring sight of Julia Roberts in the in-flight movie. Watching her performance in "Erin Brockovich" strangely led to thoughts of the mountains.

We arrive in Almaty at 02.00hrs. Dorian, the Kan Tengri representative is there to meet us at the makeshift terminal - the proper one burned to the ground not so long ago. The normal frenzy of filling in not simple customs declarations etc. ensued. We then have the 1st minor problem. Three of our bags – Grubby's, Al Gs and my own have not arrived. They contain some important kit – 2 climbing ropes, a set of climbing boots, a Goretex jacket, cameras, and other expensive personal gear, not to mention all my underwear and a tooth brush! We trust KLM will sort this out. Finally arrive at the Hotel Otrar at around 04.00hrs. We take the bags to our rooms, then retire to the still open hotel bar and commence getting over the jet lag. We all try a few of the local "Derbes" brew. It's OK, but we have to try a few more, to make sure that we stringently test this new

experience. Come 0600hrs, we decide it best to stay up until breakfast, to ensure we are DEFINITELY over the jet
Another round of "Debris", please. Anyway, I have to get down the market to purchase some Y - fronts!

This seems like a long day. After breakfast, those who were fully acclimatised went to bed, and those with their wash kit
at London Heathrow went to the market to buy some more. After resting up in the afternoon, we made our way to the nea
Czech restaurant, and sampled the local speciality call "Shachlik" barbecued meat on a skewer. We later moved on to a
called "Mad Murphy's Irish Pub" – we'd met one of the barmen on the flight and he'd promised us a free beer! – and so
local info. That night I checked out the nightclub scene, The Havana Disco by the Hyatt Regency Hotel. Expensive beer w
made more bearable by some of the excellent dancing being executed by a couple of Russian ladies.

WED 5TH JULY 00

The main task of the day was to shop for our expedition rations. This turned out to be a nightmare task admirably carried ou
by Frank, Cath, and our translator, Aivar. It was a long 9-hour day for them. The rest of us mostly did the tourist bit explorin
the city. The main points of interest seemed to be in the park opposite the hotel, where a Russian War Memorial held cour
along with the old orthodox cathedral. The Imperial Palace was also worth a look. Four of us (Stuart, John O, Mick, myself
went to the British Embassy to tip our hats basically. Stopped for a bowl of Russian soup at the "Café Hermitage"!!

That night, we headed to the southeast of the city, to the TV tower. We could not visit the tower itself, but the surrounding
grounds offered an excellent view of the city. The city is sprawling; much of the detail is covered by the many trees lining the
streets. There are a few cafes and a picturesque restaurant up there. Great place to stop for a beer and admire the view. We
decided to take a cable car back down, then walked to an outside restaurant called "Dickens". Food there was not bad and well
priced. Most of the party retired to the hotel after this, Frank and Cath particularly "done in"after a stressful days shopping.
Myself and Grubby continued the social geography project by visiting the "Armani" NightClub. It was an impressive
establishment (800 Tengi entrance fee – less than £4.). There was a bit of a Hollywood theme going on. The building also
houses a cinema; and lots of "Klassnaya Popka's" on the dance floor. Arrived back at the hotel in the wee small hours – but
not too late to find Al Gransden camped at the hotel bar. He's becoming a regular there – obviously likes the clientele!

THU 6TH JULY 00

Frank and Cath, with Aivar, head out to complete their shopping dilemma – only around 5 hours this time! They get the credit
for the first major achievement of the expedition. Fortunately, the three estranged bags turned up as well. Personally I am re-
united with my underwear. More touristy emphasis on a look around shops and markets. It becomes apparent that you have to
search really hard for good souvenirs. The market places seem to be about cleaning products, lingerie and poor quality fake
designer clothes. The numerous western shops sell quality gear, but are no cheaper than home.

That night, we head to an Indian restaurant which Mick had been recommended. The advice was good – a well decorated
interior, great food and excellent service from the lovely "Zshvetka", our waitress. Meal and drinks came to 2250 Tengi per
head – just over £10. A quiet one tonight, couple of beers in the hotel. Couple more in the "Tequila Sunrise" by the hotel.

FRI 7TH JULY 00

Today was to be what any expedition shouldn't be without – 070700 will forever be etched in our memories as "A bridge too
far". The day started normally enough. This was the time to head up country. The bus was packed with our bags (some had
already been taken by Kan Tengri on Tuesday morning) and our vast supply of rations. The bus was like a smaller version of
what we are used to, round about a 20 seater. There was enough room to seat us all once the kit had been crammed in. We set
off at around 08.15hrs. The journey took us north, through suburban Almaty (similar to the parts of Bosnia not wrecked by the
war) then past the large town of Taldykurgan, and the smaller town of Sarkan. As we steadily progressed, the roads became
narrower and we began to move into more hilly terrain. Our "Bon Aqua" fizzy drinking water became warmer by the hour.
You just had to acquire a taste for it. Late into the journey, we had to take a slight detour in order to be cleared by the border
guards. The outpost was quite remote, and our 4 wheel drive bus struggled along the winding road. At the camp, a young
officer wearing one of those fantastically oversized peaked hats, was happy with our passports and paperwork. Off we went
again, along similar terrain, some of it similar to Scotland or Wales. 13 hours after leaving Almaty, we arrived at the forester's
cabin. Here we met up with the man who will be our base camp manager (Achmed). He told us our camp for the night was 8
km further up the track.

After a short break, we followed Achmed in his truck, us still in the bus. About 1 km up the track came one of those
unforgettable expedition moments. We had been following the river up a valley, and now we had come across a log bridge
about 10-12 metres long. Aivar truck negotiated it OK. Just short of the bridge, Aivar told the driver to stop, so that we could

get out and walk across. The driver then followed. The bridge had looked sturdy enough, and nobody expected the loud cracking of logs, and then the rear end of the bus jolting down and left, into the river. The adventure has begun for real now.

Fortunately, it was only a drop of less than 2 metres, into around 1.5 m deep water. Still, it looked pretty bad and by no means safe. Mick quickly managed to get on board and pass out all the day sacks, the satellite phone and a few cameras etc. The driver was still on the bus at this stage, and was obviously not happy. Inexplicably, he started the engine and reversed, so the front end of the vehicle dropped down into the water and stayed there.

It was now getting dark. We tried to gesture to the driver to leave the bus, he seemed to be in a devastated state of shock. We feared for him, and the rest of the kit and rations. The bus wasn't going to budge now, and the water was up the to the horizontal part of the seat – a bit of a situation.

We managed to place some logs out to the bus to make a walk-way for the driver, and eventually he came out and onto the bank. After consultation between Achmed, Stuart and Aivar, the decision was taken to load up our day sacks and walk the 7 km to our camp for the night. This was slightly uncomfortable for some of us, with just sandals or flip-flops, our normal trekking footwear marooned on the bus!

It took around 1 ½ to walk up the track in the dark, but when we eventually arrived, the cook had a hot meal ready after we'd pitched the tents. We went to sleep that night, most without sleeping bags, knowing that things could have been much worse. It was a mild night.

Note:

Our route in had been changed on the advice of Kantengri. The final third of the new route was deemed to be easier to negotiate than our original route.

SAT 8TH JULY 00

We awake to find that Achmed and his team have recovered all the kit and food from the bus. Miraculously, none of the kit is damaged, and most of the food has survived intact. The only food damaged was a small amount of flour, and some vegetables. Without a doubt, this was a big surprise and a welcome boost considering how bad things had looked with regards to the bus. Achmed and Dennis (Aivar assistant) brought the kit up in the truck, they also said the bus had been hauled out by the local border guards – they must have used a pretty powerful piece of kit. Today was an easy day, taking stock and doing some packing admin, washing in the river, setting up the satellite phone and of course fighting a constant battle with the flies and mosquitoes, and the occasional B-52 bomber. We are camped next to a forward Kazakh guard post, occupied by a couple of officers and few conscripts. In the morning, the border guard officer had challenged us to a game of football; UK v Kazakhstan. We couldn't possibly decline.

1815 hrs – Pre World Cup Qualifier – Kazakhstan v UK.

Kick off was slightly delayed as the FIFA delegates had to wade across a river, due to the bridge being trashed, at least this should deter English hooligans gaining easy access to this potentially explosive encounter.

The match kicks off in a cauldron of an atmosphere, a handful of human spectators applaud politely, and the capacity attendance of a couple of million flies and other insects reach fever pitch. The starting line up for the UK 5 has a distinct Scottish flavour. In fact, only John Wharry is English, but he has Scottish parents and qualifies through FIFA's parentage rule. The tartan terrors start well. The pre-match concern about the young Kazak side being fast and elusive proved unfounded. The UK team quenched their fire well, with disciplined defending, cool heads, and frequently rapier-like attacks, sending shock waves through the Kazak defence. "Desailly" Batey was looking assured in defence, mopping up like a hungry sponge, occasionally bursting forward. "Larrson" McCorriston was looking lively, moving intelligently, dragging the Kazak defence alles uber. "Ziege" Wharry was bursting up and down the flanks, popping up and pinging in dangerous crosses, McCorriston causing havoc. "Grobbelaar" Grubby was erratic in goal, but cat like with some lightening early reflex saves, giving the Jockeroos a good platform for their master plan. "Pre-Maradona" Beeton had been a gamble. Still only 75% fit after crocking himself with a Crazy lunge in the 1991 FA Cup Final, shortly before his 5 million Tenge transfer to Lazio, played in fits and starts. Sometimes dumfounding the young Kazaks with impossible through balls, but too often committing football Hari-Kari and finding a young Asian with an all too ambitious pass. Still, this heady cocktail of unique talent was working, the UK side moving into top gear. Goals were inevitable.

Larrson McCorriston opened the account in fine style. He killed stone dead a neat pass from Zeige Wharry, turned on a Tenge coin, strode forward and finished with aplomb. 7 minutes had elapsed. In the 14th minute, Desailly Batey had soirreed once

more into the box. As pre-Maradona Beeton scampered back to cover the gap, Batey was unequivocal in his execution prodding the ball in off the post. The Kazaks were stung into action, but again the cat like Grubb boy somehow denied their frantic efforts. Half-time, and whole sale changes in the UK five. Beeton, McCorriston and Batey were hauled off. Grubb replaced in goal by Red Daz Weller, and an all together more English look about the team. Recent History (Look no further than Euro 2000!) tells us the 2-0 lead is not safe. John "Roy Keane" Owen belied his modesty, putting in an energetic performance, chasing every ball, tackling feverishly and occasionally tackling the spectators, and even the video camera and some sunglasses on the touch line. Mick "Giggs" Jenkins showed that rare Welsh flair in attack, but frequently AWOL in defence, like the sons of Glen Dower. Grubb was now playing outfield; he had metamorphosed into a Wimbledon player usually launching the ball into row "Z" to the flies high in the trees. Red Daz in goal was somewhat surprisingly playing himself out of the "Survey Biff X1", not only playing like, but actually looking like Lev Yashin, the legendary Russian stopper. Still, he could do nothing to stop a sucker punch strike by the Kazaks. 2-1. The boys hadn't been playing badly, but their English slip was showing. It took the Welsh influence of Michael "Giggs", to fire them into orbit with an absolute peach and a deft touch from "Ziege" Wharry. Grubb continued finding altitude with a swing of his elephant touch right boot. We were hoping John "Keano" would tackle him into the river.

Predictably, the English contingency again shot themselves in the foot. Wharry deflecting the ball past Red Daz "Yashin". Wharry has lost the Zeige tag, and picked up the mantle of Phil Neville. Still, try as they might to do the British sport thing and lose in the dying seconds, they clung on despite a fierce barrage from the east. 3-2, an important away victory. The result was marred by crowd trouble, the insects amongst the spectators attacking the British team as they left the field. World football's governing body FIFA have vowed to launch a full inquiry into the incident.

SUN 9TH JULY 00

Today would see us move to Main base camp. Reports from Achmed suggested we would not be able to site base camp as close to the lake as would be ideal. It had been agreed to have the base camp 2km short of the lake.

We set off from the border guard post at 08.00hrs, got a lift in Aivar truck to cross the river, and started walking at 08.15hrs. The first 9km of the 12km walk was beautiful, sometimes it looked like Scotland or Wales, then further on the scenery would resemble the Bavarian Alps. Aivar truck dropped A load of kit off at the 9km point, as far as the truck would go, then the porters would carry the kit into base camp from there. As we progressed further towards the base camp, the sun became hotter, but worse than that was the swarms of flies and the larger biting horse fly type creatures that followed us. We arrived at the base camp around 13.30hrs and began setting the tents up. After this, it was a battle to avoid the searing heat (not much natural shelter) and the biting beasties.

This was not an enjoyable time for anyone, there was no respite from the flies. At around 16.00hrs, Carl said he was going a "Bimble" up the hill. Suddenly, this seemed a popular idea, so myself, Frank. Stuart, and John O joined him. Maybe we could lose the flies. Little did we know that this "Bimble" would inadvertently turn into a recce, as we went all the way up to the lake. Seeing the lake for the first time brought mixed feelings; the beauty of the glacier and the peaks in the distance that we would soon aim to climb, and then the realisation that there didn't seem to be a safe route around the lake. The trek up there was not easy; a challenging boulder field, parts of it with rocks the size of houses, and parts with much smaller boulders, many of them loose. It only took 1 hr 15 mins to get up there, but that was with no packs, and jeez, it was hard work.
I ventured down to the waters edge – it was cloudy and still, grey coloured from the glacier silt. We headed down keeping more to the west – easier going, but treacherous with the loose rocks. When we arrived back to camp, a full submersion into the river to wash seemed like a good idea for the second time today.

MON 10TH JULY 00

It was discussed and planned last night to take another look at the lake and have a closer look at a possible route around it. Meanwhile, John O, Daz and Grubby would head round to the next valley east and establish a camp there.

So it was up to the lake again for myself and Carl, this time joined by Mick, Cath, Moz and John W. It seems no matter what route you take up there, at some stage you will encounter a nightmare of a boulder field. The best idea would appear to be crossing the river at the start. On reaching the lake, we headed round to the west side of it to have a look at a potentially difficult rocky outcrop. We moved to within 10m of it and our worst fears were confirmed; there was no safe way around it. It would have been possible for an experienced climber to traverse round, but we would have had heavy packs, and the patches of grass would have possibly given way, especially if wet. Looking across to the east side, there was more of rock fall danger (we heard some rock fall whilst at the lake). It looked like the scree at the base of the cliffs on the east side was very loose and therefore dangerous. So the verdict was that we could not safely get round the lake, therefore, we would not gain access to the mountains beyond the lake, which had been the initial plan. This was obviously disappointing. Coming back down was an

experience, some loud thunder followed by heavy rain. This made the rocks slippery and treacherous and a few of us had hairier moments than Grubby's beard on the descent.

TUE 11TH JULY 00

As Stu had planned, the remaining nine of us headed round to the valley to the east. This was to take around 3½ hrs. we stayed higher than the river, but still had to fight through some awkward bushes among the rocks. On the wildlife side, there was the odd marmot spotted. I spotted a grey squirrel like creature, with a tail not quite as big as a squirrels. There were also a few what looked like birds of prey spotted on the way up the valley. When we arrived at the camp, we found that John, Daz and Grubby had headed further up the valley. They arrived back within a couple of hours, as the weather had turned bad and forced them to head back just short of the glacier. It was John Wharry's birthday today, so we all had a celebratory wee dram of Finest Kazak Vodka before retiring.

WED 12TH JULY 00

Today was to be the best day of the expedition so far; a momentous occasion. From our newly established base camp at around 2800m, four of us set off to climb one of the subsidiary peaks to our south. The climbing team consisted of John O, Frank, Grubby and myself. Meanwhile, Carl would take the others onto the glacier and do some training. For the climbing team, the day started at 06.00hrs, a bit of admin, a brew, and a big bowl of porridge later, we were on our way at just gone 07.00 am. The tab up the rocky moraine was easier going than the one up to the lake, but longer. The ground, over the course of 2 hours changed from grassy gentle slopes to treacherous boulder fields, then onto the glacier moraine, some of it relatively small stone and easy to walk on, some of it the size of beach balls and hard going. The weather was good on the way up – blue skies, but we would hope the sun would stay behind the east ridge as long as possible so that we wouldn't get frazzled by it too early. After about 2 ½ hours, we reached the glacier. Here we donned our crampons and set off up the glacier towards the snowline. On reaching the snowline the slope became considerably steeper; John O decided we should rope up.

This was a wise move, as it soon became apparent that there were many crevasses on the way to our peak. The slow plod to the summit was long and laborious. We zig-zagged slowly up, most of the time sinking anything from 4-24 inches into the snow. The guy at the front (we kept changing) really had his work cut out. Sometimes we would hit an icy patch which was a relief, you could just dig the crampons in. Even so, we still had to concentrate, we were on a 40° slope.

We eventually reached the summit at around 13.30hrs – 6 ½ hours after leaving our base camp. John O stood a few metres from the summit, gathered the rope in that had separated us, so we could walk the last few metres together. OK, it wasn't Everest, but it was a respectable peak, the GPS told us it was 4080m. The last few steps were an experience to behold – we were shattered, but there in front of us were the mountains of China, over the border. We were not on the border ourselves, but not far away. We stayed on the summit for 40 mins. The weather was just holding out for us take some "We did it" photos, and for us to admire the tremendous views; the glaciers down below, the mountains to our south, east and west, and even out over the low steppe lands to our north. A memorable short time. However, that was not the end of the day by a long shot. As we descended down the mountain, the weather came in big time. Rolls of thunder followed by driving rain quickly tuned us in to the need to get down with haste. This was not a good time. We followed our tracks we had taken on the way up, but the snow way less stable now with the heat of the day and now the rain. Frank led the way, then about half way down the snowline, a moment of confusion as we plundered on, exhausted. Grubby led the way…….wasn't it supposed to be Frank? It was a minute ago – when did they change? Where does that stretch of rope in front of Grubby go? All these questions came to mind in an instant. A second later it was obvious – Frank had plummeted into a crevasse, completely over his head. Grubby shouted down to see if he was OK. As we waited with baited breath, we were relieved to hear that he was. The next thing was to see if he could climb out, unaided. At one point, he didn't think he could, but with an almighty effort, managed to haul himself out. A brief "time out" for Frank to recover, then we cracked on. It was a relief to get off the steep snow, but now had about 1.5 km to cover on the glacier – the rain still driving. We were moving at speed, and I caught my crampon on the ice, and went diving through the air, a la Frensesco Totti, of Italy's Euro 2000 team, whenever an opposing player breathed on him. Like Senior Totti, I recovered instantly, no damage done. At the end of the glacier, crampons and climbing gear off and down the moraine. This seemed like an age, heading back to base camp after a long day. The scree, boulders and rocks seemed endless. Then the welcome sight of our dark green tented temporary base camp. An epic 10 ½ hour day. During the bagging of this peak, Carl had taken the other guys on a glacier tour, on the huge mass of glacier at the top of the valley. A long day for them too, returning to camp not long before ourselves.

THUR 13TH JULY 00

Today would be a well earned rest day. Personally, I thought that someone had been at the soles of my feet with a mallet. The rest would do them good. After a couple of hours milling around, most of the team decided to head up the west side of the

valley, to the main peak on the ridge above our camp. I had to admire Grubby and Frank for joining in this madness, for it was a fair old hike up there after yesterday's exploits. The guys successfully bagged the bugger - good effort. Tonight we concocted another storming meal. It seemed each tent was trying to outdo each other with their inventiveness. Our (me, Grubby, Daz) main ingredient every night was green chillies and garlic. With that, we could even make Daz's socks taste good. We didn't try though.

It was becoming apparent that there were some "spoon wars" going on. We had your standard run of the mill stainless steel job, then you have the American "MRE" model. Next up, dark green or grey "Lexon" numbers from Cotswold camping. These all earn thier presence here with marks 4,3 and 5 out of ten respectively.

But by far and away the best spoon to appear in country is Frank's Titanium Super Spoon. I call it the Zinedine Zidane of the spoon world. How many spoons do you know that can survive a nuclear holocaust? And mend an MSR cookset? Exactly. Untouchable. 10/10 of course. But wait..... what's this? Mick has made a late entry with a "Singapore Airlines" teaspoon. Stainless steel. Slinky, but definitely too small. However, this spoon has history – 10 years old, travelled the world, and stolen from a major airline. This elusive little fellow sneaks in with a 7/10.

FRI 14TH JULY 00

There are a few important things happening today. Mick and Stuart and Catherine are heading back to base camp, to discuss with Kantengri the possibility of moving base camp to the next valley west – not a small undertaking. Meanwhile, Daz and Al G would be carrying out some studys/observations at the foot of the main glacier. John O, John W, Frank, Grubby, Carl, Moz and myself were going to have a crack at one of the peaks at the head of the valley. Definitely at least the same height as the one we scaled two days ago. To give ourselves a chance of climbing on a good, firm surface, we reveilled at 04.15hrs, and set off up the beloved boulder fields and morraine at 05.00hrs; it was still dark. An hour later it was light. Again, we would try to make as much ground as possible before the sun crept over the mountains. We were doing well – at the glacier, crampons on and roped up by 08.00hrs. On one rope John O, Grubby, Moz, myself. On the other, Carl B, John W and Frank. We set off up the glacier, the sun now well and truly on us. The glacier and the mountains ahead are beautiful, but deceptive. It doesn't look far to the snowline. But after half an hour, we are still not close. By this time, nearly four hours on the go, we have expended some energy, but feeling good, not brilliant, but the desire to get up the monstrosity in front drives us on. The air is definitely thinner up here, you can feel it when you try to take a lung full of air.

Unfortunately, Moz can feel it more than most. He is in front of me on the rope. The glacier isn't that easy to walk on, it is uneven in places. Moz staggers a bit, and I put it down to the terrain; this happens from time to time. Then Moz staggers some more, but it's different. It's more lethargic and his head is down. I start to relate to this state on two counts.

a) I adopt a similar posture most Saturday nights after a day at the footie and a liquid analysis of the match and the gunga challenge (this involves finding a fine Indian eatery, not looking at the menu because you can't read it – and ordering the hottest dish on the menu).
b) Talking of India – I recognise Moz's symptoms because the same happened to me in the Indian Himalayas five years ago. One thing I remember about altitude sickness is you feel a bit drunk, then you don't know much about anything.

I become concerned, and shouted at Moz. "MOZ, ARE YOU ALRIGHT? MOZ?" I looked round at Carl B, and gestured to him that Moz was "in bits". As we were one behind the other, Carl couldn't see him. When he realised what I was on about, we ran up to Moz and grabbed him, telling him to sit down. He was out of it, so we forced him to sit down, his legs like mad woman's wee at this stage. It was clear he couldn't go on. He came round after we made him sip some water and relax. He appeared to have a mild dose of altitude sickness, and possibly a bit of dehydration. It wasn't an easy trek up, even at this stage.

Frank, very admirably, offered to take him back down. Nobody wants to turn back at this stage, especially after the effort you have put in and the fact that the summit appears so close, which is why Frank volunteering himself is no small gesture. Luckily, Moz was beginning to feel better, so we bade them farewell and continued, five of us on one rope. As we got higher up the glacier, we knew it would be crevassed, but we did not count on the frequency of the crevasses. Every 10m, there would be hard ice, good to walk on, then 10m later snow, usually knee deep, sometimes deeper. This was ball breaking stuff.

The brave Grubby was at the front, every now and then sinking to the top of his leg, his foot not actually touching ground if the crevasse was big enough. We soldiered on, but then the inevitable. Our climbing leaders John and Carl decided it was not safe to go on. If the glacier was unsafe underfoot, the mountain would be also. Maybe we could have got to the summit, but we would have been in real danger coming back. The snow would have been softer, and any one of the hundreds of crevasses

could easily have claimed someone. It was a sensible decision to turn back. Obviously, this was disappointing, but we were pretty high on the glacier, at around 3700m or so. We had a quick bite to eat, took some consolation snaps and headed back down the now very familiar valley. Walking down morraine and boulder fields gets vexing after a while. Don't let anyone tell you any different. I settled down to another night wedged between Grubby and Daz in a tent pitched at a slightly uncomfortable angle. On reflection, I've had better days.

SAT 15TH JULY 00

Today saw the main exodus of the remainder of the party, other than Carl, Grubby and myself. While everyone else went back to the main base camp, we stayed behind to "bag a Slagheap" as Carl put it. This terminology didn't do the peak justice; it turned out to be a taxing climb along a ridge, and we topped out among the clouds at 3930m. The morning hadn't looked great, the now familiar low cloud rolling in; out and back in again. Carl was undecided, but eventually said we should go for it. Good call. So once again, back up the morraine. Deep joy, but after 2 hrs, the start of our ridge. It was very steep to start with, and after a small boulder field, a rocky scramble. Here I leant a lesson. I should have donned my helmet, seeing as some of the rock was quite loose. I chose not to, and as I followed Grubby, a snookerball sized rock bounced off my bonce. Luckily, I'm a Repro Tech and bullet proof, so after pondering briefly to pat the bump on my head, I gave myself a shake and climbed on. Next time, I will don my helmet. After the scramble, the ridge levelled out, then banked up steeply again, another rock scramble. After around 1 ½ hours on the ridge we reached the first peak, which was 3800m. We tried to catch a view in the clag, we caught the odd window of the mountains to the west, but mostly it was like thick pea soup. We headed on up to the next peak, 30m higher at this point, we had to decide whether or not to go for the main top. The weather was in our face, but as yet no rain, and only a slight breeze. We felt good, so we went for it, after another steep scramble on a bit of knife-edge, we conquered the beast. We waited briefly for a view, which wasn't forthcoming, then headed down an easy descent, the scree slope, which was at a comfortable angle to walk on. That night, we cooked up the remaining food – bits of this and that, but after our exertions, it tasted good. The rains came down heavily again, but at least we are free from biting B-52 bomber flies for the time being.

SUN 16TH JULY 00

After a huge bowl of porridge, and a slow packing sesh, our intrepid trio tabbed back down the valley and round to the main base camp, houses on our backs. We arrived back to find that Stu, Mick and Al G had set off to climb the peak to the west of the base camp, and John O, John W and Frank had set off up to see if they could get past the east side of the lake, travelling light, and set up a high camp on the glacier, with the possibility of bagging one of the awesome peaks at the top of the glacier. They didn't return early, so we gathered they got past the tricky lake situation.

Aivar and Leonid (the chef) cooked us three new arrivals some swordfish soup and a load of pasta. They are feeding us well. Later, Mick, Stu and Al G returned, tired and wet after a long day. They had claimed the peak on the ridge to our west, not easy by all accounts, plenty of difficult scrambles and descent on the wet grass, where Stu came a cropper frequently, involuntarily skiing down on his boots, and catching some quality air time.

The height of their peak was 3600m – no mean feat, given the crap conditions. Mick had also been participating in some unplanned sporting activity up there, trying to emulate Stu's skiing exploits by "surfing" down a boulder field on a large rock. "Hang 10", Mick"!

We have now explored two valleys, the next move is to head over to the next valley west. We will go on Wednesday, there is a possibility Kantengri can organise 4 horses for us, but this is not definite. The walk round to the base camp area will be around 20kms – with large, heavy packs. We will spend the next couple of days taking it relatively easy, and awaiting the return of John O, John W and Frank, hopefully with some good news.

I spend of good couple of hours talking with Aivar. He teaches me some Kazak, and some Russian, and unprompted, he gives me his perceptions of the images he has of some members of our team. He imagines Stu as a guardsman, with a bearskin on, marching outside Buckingham Palace. He mentions not for the first time, that Daz really does look like he is from Kazakhstan. We now call him "Red Daz". He imagines Mick as the old soldier, being unfazed and mellow. Approaching problems with a shrug of the shoulders and sparking up a cigarette. He says he can imagine Mick in the trenches! He has John Wharry down as a footballer. Probably as a bit of a pretty boy! ("He looks like he plays for Manchester United")!

He asks if Grubby is a private saying he looks young. He was amused by Grubby being last to get ready, stuffing things into his Bergen at the last minute. We all know this didn't matter, because the young "Irish Setter" would soon catch us up! Finally, he describes me as a UN soldier (I don't know if this is a good or a bad thing!) He seems to think I am a diplomat; a

negotiator – good at communication with foreign people. I tell him about my confrontations with French Officers in Mostar. I don't know if he still has the same opinion. He too served in Mostar – we talk about it at length.

MON 17TH JULY 00

Another memorable day. The trio from beyond the lake return, with news of having claimed another monster. They had climbed a peak, topping out at the Chinese border at 4440m. They had started early, at 05.00am and the climb had been long and difficult, again snow conditions not being ideal, and the ever present crevasse danger. The hard snow plod had been on a 45-50° slope, and seemed endless. 5 ½ hours later, they hit the summit, at around 10.30hrs. They stayed up there for around 20 minutes. As myself, Carl and Grubby had experienced on Saturday, unfortunately they did not get much of view from up there. They did, however get the odd window in the clouds and mist, and did catch a glimpse of some of the beautiful mountains of China. Special mention to John Wharry, climbing his first major mountain outside of UK, a few days after his 24th birthday. Meanwhile, back at base camp, a few of us decided to go for a bit of a workout by heading up the ridge to the east of base camp. We hoped the weather would clear and we could attempt to climb onto one of the peaks on the ridge, but we waited in vain. We reached a pass between two peaks, at around 3000m, but visibility again was poor, so we turned back, not willing to negotiate the steep, slippery boulder fields in the fog.

That night, we had a hearty meal, then "hung one on" to celebrate Frank's, and the 2 Johns achievement. 3 bottles of vodka and a bottle of Kazak Brandy later, we bumbled through the mist back to our tents. The mist was very low, and the only sound was the river. I decided to give myself a moody moment by waiting until everyone was in their tents, torches off. I stayed outside and turned my torch off. It was like being in "The Blair Witch Project"! All in all, just another manic Monday.

TUE 18TH JULY 00

An admin day before our trek to the next valley. Once again, the weather is "Dreich" as we say in Schottlandia. At breakfast, Leonid cooks us up some tasty ham omelettes. He must be trying to fatten us up for the adventures ahead, after some of us have scoffed 3 omelettes, he still asks if we want more. We wait to see if the horses appear with Dennis before finally packing our gear for nine days in the next valley. Mick, John O, Stu and Al G are doing a bit of "Techno geeking" on the computer. They are producing a map on a GIS package (Geographic Information System) showing our routes and ascents in Dzhungaria to date. Others are staring into the campfire, trying to phsyche the clouds away, steeling themselves for the next instalment. Carl keeps reappearing from his admin vortex of a tent, with different pieces of kit. He's wearing his helmet the wrong way round. He appears slightly unhinged, occasionally eccentric. You can spend too long in the hills, you know. The weather being so grim, most people lay about tents reading. Moz does some painting, but his efforts are interrupted by sporadic rain.

If we are to feasibly move to the Little Baskan Valley to our west tomorrow, we really could do with Dennis turning up with some horses. In the evening, the cavalry arrives. As Dennis comes into view with 3 horses and a couple of border guards, we hear the music from "The High Chaparral". Well, we imagine we do. Quite an early night, early start tomorrow.

WED 19TH JUL 00

We rise at 07.00hrs, and pack the tents away. We could afford to give a bag of kit for the horses to carry, and they were also loaded up with the food. We would have to "Tab" around 20km today, down the valley, up over a high pass, and up the Little Baskan Valley. We split into two groups, the one I was in left first at 0745hrs. We did not get off to a blinding start. Instead of crossing the river early to get on the east-facing slope of the valley, we crossed further down, and stayed on the west-side. We needed to be on the east-side, otherwise we would have to cross a raging torrent. When we see the other group on the east-side, we realised we would have to head back up to find a crossing point. We weren't overly ecstatic at this prospect, and chuntered accordingly. We eventually crossed; we had lost 2 hours. The sun was out today, first time in while, but unwelcome, with our houses on our backs. We caught up with the group at the top of the pass. By this time, Carl had a problem with his undercarriage and was hence in a bit of pain. Cath told him to check himself out – no major problems a couple of good old "Brufen" and he was on his merry way. As we turned into the Baskan Valley, Dennis had run to catch up with us. He informed us that the horses were "Kaput" and couldn't go much further. We were a good 7 km short of our next intended base camp. We would have to stop here tonight, and carry on in the morning.

THU 20TH JULY 00

Not much happening today except get up and move to where we should have got to yesterday. We had to clear the path as best we could for the horses. This was quite a slow, tedious process. The horses and horsemen did well to get over some small boulder fields. The morning was hot, but by the time we'd got to our base camp area, it had clouded in a bit. A good area, but the water source is grey with glacier silt. We have a couple of "wee drams" tonight, to celebrate Franks birthday – it's tomorrow, but we'll be going up the hill.

FRI 21ST JULY 00

Today was an important one on the expedition. In order to attempt some of the mountains at the south end of the Little Baskan Valley, we would have to set a high camp, near or on one of the glaciers in the vicinity of some of the major peaks.

It was decided that half would go up to set up the advanced camp, and half would explore from the lower base camp, including the Shumsky Valley, which branches out from the Little Baskan Valley. The six who would go to set up the high camp were: John O, Stuart, Frank, Al G, Grubby and myself. We also included Dennis, the young assistant to Aivar. He is very fit and this would give him the opportunity to climb some of these mountains with us.

Carl and Mick were going to explore/recce the Shumsky Valley, maybe with a view to climbing something in there.

The party of 7 for the high camp set off at around 09.00hrs. About 20 minutes into the journey, and we had to cross the river. This was not easy, the crossing point being very fast flowing, and the rocks on the bottom not doing our feet any favours – we had to take our boots off this early in the day. After a couple of hours, we reached the Little Baskan Lake, after negotiating a tricky boulder field. The views around the small glacial lake were picturesque. The walk was demanding, we were carrying four days worth of food for the high camp, as well as fuel and tents. After the lake, we hit the morraine. Some of this was reasonably easy going, and some was steep and loose, distinctly not easy going! The weather was mostly overcast today, a blessing I think given the weight we were carrying. We eventually hit a knife edge of terminal morraine, which separated two glaciers. Once this levelled out, we decided to place the high camp here. It looked like a good platform to attempt a couple of summits from. Our trek today was over 10km – it took 6hrs 20mins. It was different being at the high camp, obviously much colder, therefore no flies or biting things! After smoothing out the stones as much as possible, we pitched the tents and got some Frank Bough (scoff) on. Hopefully, we will bag something tomorrow.

SAT 22ND JULY 00

Another big day, another big summit, 4370m to be exact. We started across the glacier at 06.00hrs after the usual brew and porridge. In the early dawn, it looked like we would get some good weather, only a few wispy clouds in the sky. After 20mins across reasonably flat glacier, the start of our mountain. The first part was quite a steep ramp of glacier ice, hard going but a good surface for the crampons. After, this, into a huge bowl of snow; we zig-zagged up there, at the top going under a massive serac of ice. Conditions in the snow weren't too bad, but the crevasse threat was there, Grubby out front sinking waist deep a couple of times. We were on a rope of 3 and one of 4; the 4 being John O, Grubby, Dennis and Al G, and the 3, Stu, Frank and myself.

The next stage was the steep climb to the summit ridge. The views on the way up made the effort worthwhile, we could see well into the mountains of China, and looking north, miles into the steppe. The summit ridge itself looked reasonably flat as we walked up the valley yesterday. The reality was another taxing walk up there, it was on more of an incline than it looked. We hit the top, all seven of us, at about 09.45hrs, a climb of 3 ¾ hrs. We were lucky to catch some stunning views, it was even calm enough up there to stop for some lunch. We could see a river and what looked like a small village in China. We wondered if the Chinese were watching and listening to us in some capacity! From the summit, we managed to get communications with base camp. We spoke to Carl and Mick, who were going to bivvy up the Shumsky Valley tonight with 3 others, with a view to climbing the Shumsky Mountain tomorrow. Good luck. The weather came in not long after we arrived back at our camp.
The descent was pretty fast, although we did come into a bad crevasse area just before the glacial ramp. We got back at 12.10 hrs, quite shattered. Quality day.

SUN 23RD JULY 00

Yesterday was always going to take some beating – but we topped it today. So much so, I personally would say that this is one of the most memorable days of my life. We scaled Mount Tien Shansky, 4625m tall. For me, the twenty minutes or so we stood on the summit is matched only by the twenty minutes or so that Scotland were level pegging, 1-1 with the World Champions Brazil during the opening game of the France '98 World Cup. That had a sad ending, we lost 2-1, but today the only sad ending was having to leave the summit all too early, to get off the mountain before the morning sun made the steep north face avalanche prone.

It wasn't the most jolly of starts to this special Sunday, though. Up at 04.00hrs, everybody moodily fumbling around in the dark. The weather was not helping to lift spirits. It was a bit overcast, we wondered if it might close in even more to scupper our plans. A flask of hot chocolate raised morale a tad, and the routine communal bowl of porridge and we were on the ice, fitting crampons at 05.00hrs. It was a long walk up the glacier in the dark. As it got light at around 06.00hrs, we reached a huge ice wall, which banked up sharply. We were able to get round this, on a treacherous slope of ice and scree.

This character building section led us into a large col., like a massive amphitheatre of rock and ice, the glacial area at the base we stood on being almost flat. Tien Shansky rose ominously in front of us. It was difficult to tell the steepness of the north face which we would ascend, looking at it head on. There was a sizeable mass of rock which jutted out at what looked like the half way point, but as it turned out,, that was only about one quarter, or a third at best of the way up. By this time, it had turned into a beautiful morning. We were blessed on two counts; when the sun rose, the surrounding mountains would keep it's rays off our route for the entire ascent, and secondly, the snow, for once was good underfoot. Having said that, the ascent was far from easy. The route was straight forward enough, from the flat glacial area of the col., zig-zagging straight up the north face. However, as we approached just short of half-way, the slope became slightly steeper, and a quick check by John O revealed there was a definite avalanche hazard. There was a layer of soft snow underneath the hard surface, and ice below that. It didn't feel fantastically safe.

At this stage we headed towards the rocky edge of the face, sticking close to it to avoid the avalanche hazard. It was hard going for everyone, Grubby out front at the head of rope 1 , kicking steps into the ice and snow. Stuart was not enjoying himself tremendously. He blamed it on his age! We eventually reached the summit 4 ½ hrs after leaving base camp, at around 09.30hrs. The views were stunning; it was plain to see this was the highest mountain on the range, and you could see everything, mountains below, glaciers, what looked like infinity into China, and across the steppe. Truly amazing. The descent wasn't too bad, we could pretty much go down in a straight line, through the zig-zag path we'd made on the ascent. Still, it's hard on the ankles and toes descending steep slopes so it was a relief to get back onto the relatively flat glacier. We arrived back at our base camp midday after an unforgettable 7 ½ hrs.

MON 24TH JUL 00

As an easier day after yesterdays exertions, John O, Frank, Grubby and myself would set off to climb the smaller "Spudnik" peak directly to our south. Stuart, Al G and Dennis would head back down to the base camp and four of the team would come up to us.

We had no idea up until now how the guys had got on with their attempt to climb Shumsky, but on Spudnik, we managed to gain radio communications with the group down below. They had got well up Shumsky – 300m from the summit, but unfortunately had to turn back due to the avalanche hazard. Hopefully they will have more luck from this high camp. Our climb up Spudnik was relatively simple compared to yesterday, up high on the glacier, then up the east face. It took just over two hours. At the summit, the view was non-existent to start with, due to thick cloud and mist, but that soon cleared to give us some reasonable photo opportunities. The GPS told us that the summit was at 4030m, another respectable effort.

Today would have been pretty routine compared to yesterday, but a freak moment during the descent made this a day I for one won't forget. As we made our way down a steep patch of ice on the north face, a rock almost the size of my head came rocketing between myself and John, like a cannonball. John reckons it missed his head by a couple of feet, and was closer to mine. I felt it's jet stream behind my head, and as soon as I'd registered the sound of it whizzing past (like rotor blades!) we watched it smash into the rocks below. We didn't know quite what to make of it. Where it came from on the mountain, and the sheer "terminal velocity" speed of the thing. One thing for sure, if it had hit one of us, we wouldn't have known anything about it. Tomorrow, we aim to climb a peak at 4511m, to the east of the valley. It could be a long day, probably middle of the night start. I will wake up at that unearthly hour, thinking it's good to be alive!!

At around 15.30hrs, we spot the 4 of our team at the bottom of the morraine, who will join us for the next few days. They arrive an hour later, with news of a failed attempt yesterday on Mount Shumsky. Unfortunately, Mick, Carl, Moz and Daz had to abort the attempt, 300m from the summit, due to the risk of avalanche. By all accounts, it had been an eventful morning, the team coming across various testing conditions, and Carl testing the teams crevasse rescue techniques by plummeting into one, while it was still dark. He said he went down about 6ft above his head, and once he'd stopped panicking and his head torch stopped spinning, he realised that although crevasses may present a life threatening danger to the climber, they are actually quite scenic when your inside one. Frank had expressed the same viewpoint about his crevasse!

The four new arrivals, Mick, John W, Carl and Moz were shattered after the long haul up the valley. John W is not in the best of shape, so it's early bed for them, as the weather turns bad once more.

TUES 25TH JULY 00

After a relatively easy day, four of us will attempt to continue the summit extravaganza. John O, Frank, Grubby and myself will set off at 04.00hrs to try to climb peak 4511m on the map. This means another stupid-0-clock rise at 03.00am! We get up, and it's freezing, and clear skies – ideal. After the usual food and preparation, it's off up the glacier again, the same initial route we had taken for Tien Shansky. This time, once we had reached the amphitheatre – like corrie, we headed straight on.

into the snow bowl in order to ascend onto the main ridge which joins peak 4511 and Tien Shansky in a huge horseshoe. We make good time, arriving at the top of the ridge at around 07.20hrs. The climb up to the ridge has to go down as one of the most physically demanding parts of the expedition thus far. Even Grubby was "hanging", proving he is human after all. After what had looked like a possibly glorious day, first thing this morning, the wind had picked up significantly, and the clouds and clagg started rolling in ominously as we reached the top the ridge. Up here it was blowing a gale. At this stage, we could still see the top of 4511, but it was a matter of minutes before it disappeared. We made our way down the ridgeline, then climbed steeply back up again on the mixed snow and ice and rock. The ridge was a bit of a knife edge.

Negotiating the dangerous slippery rocks roped up is no fun, the rope frequently getting caught. Despite this, we reached the top of 4511 exhausted but triumphant, at around 08.15hrs. The view was pretty non-existent and the weather akin to a day in the Scottish mountains in November, so we didn't hang around. We traversed back along the ridgeline, past the point we had ascended, and headed on up to peak "Davidovich" which the GPS had read as a 4591m peak.

We then headed on round the long, treacherous ridge, towards Tien Shansky, where we knew there would be a good route off the mountain. This resulted in a brief dart into China, in order to get past a large rocky outcrop on the ridge. Luckily, there were no customs people there to check our visas. We eventually found the descent point, a steep snow and ice slope, a concave curve making our life easier as we neared the floor of the corrie.

We arrived back at our advance base camp at 11.30hrs. The others still in tents due to the abysmal weather. Two summits, 4000m plus in a day – we're on a roll!

The weather continues to be grim for the rest of the day, leaving nothing to write about of any interest.

WED 26TH JUL 00

John W's condition hasn't improved much, so Frank will take him down to base camp. The weather today is fantastic after yesterdays murky fare. Mick, Carl and Moz will head up and attempt Spudnik today, while John O, Grubby and myself will head down the valley a couple of k's. Then off up to the valley on the west, to possibly make an attempt at peak Violetta in the early hours of tomorrow.

We head back down the glacier, around 9.00am, then turn up to our left towards Violetta, up yet another steep boulder field, then lateral morraine. This is a whole new valley, and once we'd progressed up to the first glacier, further inspection revealed that there were four more glaciers. We were having a look at routes to climb the difficult Violetta. It was not feasible from the first glacier. We advanced up to the second one, and there in front of us loomed peak Natalia. It had been a long walk from the advance camp in the Little Baskan Valley, but 4 hours later, here was a chance to score another summit. We looked at each other with the same thought – we're tired after the past few days, but mountain time on the expedition is running out. So inevitably, off we went again, onwards and upwards. The climb was difficult, some parts of the slope being steep and icy, other parts soft, unstable snow due to the heat of the afternoon.

After a 2 hour physical dilemma, we reached the summit ridge, then negotiated the relatively easy push along the mix of rock and ice to the main summit. Once again, it had been worth the effort, conditions being ideal to marvel at the awesome spectacle below and all around us. We had a good view of Violetta from here; we were sat at 4207m and Violetta wasn't much higher. However, the climb looked a bit technical, a vast steep slope below the summit. We descended Natalia, and at the foot of the mountain exhausted and carrying a couple of minor injuries, we decided that Violetta was going to have to wait. If we'd been fresh, and had more time to recover, we'd have given it a crack, but to attempt it in a few hours would have been reckless and unsafe. But, to bag Natalia, which wasn't on our agenda originally, was more than enough to compensate. We trekked down to about ½km short of the Little Baskan Lake, where we found Mick, Carl and Moz, who had earlier summited on Mt Spudnik. They too had had an exhilarating day. We had managed to contact Stuart on the radio, who was pleased to hear we were all safe, after our last "snowy peak" of the expedition.

THU 27TH JULY 00

Now, sadly the withdrawal from the mountains begins in earnest. The six of us camped above the Little Baskan Lake head wearily back to the Little Baskan base camp, in the late morning. One last trip over the two boulder fields, a five km walk.

We arrive back to find that Frank and Stuart have ascended the ridge to the east of the camp, they ascend almost 1000m from the Little Baskan camp at 2450m to the top of the ridge at 3405m. Later, Frank suggests this should be named "Sapper Ridge".

That afternoon consists of boring admin sessions, packing kit, trying to find a clean pair of socks and grollies etc. Rations now are on the wane, big time, although we still have just enough for another plate of pasta and a bit of stew tonight – only just

enough. Later, we stand around the camp fire and Stuart wants suggestions for names of the unnamed tops we have ascended. Later still, the bottle of Glenfiddich I purchased so long ago at Heathrow gets cracked open. We feel we are justified in quaffing a few wee drams to celebrate. We also have some Kazak Vodka to get rid of. Later still, and we get hungry again. We have almost no food, but our minds are at a creative premium condition. With a bag of chopped, dried apples, some cooking oil and some paprika, we invent a brand new dish, ideal for bar room nibbles.

We pre-heat the oil in a pan placed carefully on the fire, drop in the dried apple pieces, and generously spoon on the paprika and stir. Deep fry until golden and crispy. Your chefs tonight were, Frank, Stuart, John O, Grubby and myself, and the name of the dish.....Crappel (derived from "Crunchy Apple"!) We retire late, late, happy with our new invention.

Earlier the horses turned up on cue, ready to be loaded tomorrow morning.

FRI 28TH JULY 00

The next stage of our extraction from "The Zone" is a major one. We have to trek for around 24km, from the Little Baskan base camp, to the border guard post. The route, due to the river, almost takes us via our initial main base camp.

We would be carrying reasonably heavy packs, but not as severe as previous days due to all the food being scoffed(almost) and the help of the horses to carry our day packs and boots. Personally I hoped for an overcast day and a cooling breeze, but no, the sky was clear and the sun blazed on us mercilessly. We set off at around 07.30hrs. Over an hour later, at the foot of the valley, came the "Crux" of the walk; the ominous trek to the top of the Surley Pass, a climb of around 800 vertical metres. The heat multiplied the difficulty. It took us over 2 hours for everyone to arrive at the head of the pass. Here we had lunch – one third of a piece of Pitta bread each, and a wee block of cheese! We hoped Leonrid would have a banquet waiting at the border guard post! After taking approximately 2 minutes to eat our rations, we had a short rest and cracked on. The route took us back up our original valley and across the river then back down the track we had taken what seems like a long time ago, on 9th July.

During the walk, Red Daz takes a tumble, and has to struggle with a painful ankle for a while but he soon "walks it off" and is OK soon after.

As we come towards the end of the walk we wonder how high the river is going to be, about 1km short of the guard post. Are we going to have to conduct a tactical river crossing, with floatation packs? Kantengri's crew have been pretty much on the ball in my opinion, and I have a sneaking suspicion that they'll have thought about the river. Sure enough, Aivar is there with the truck and a driver, to take us across the river. The truck might not look the part, but it defies belief how it crosses the 1 metre deep river and it's bed of big boulders.

We arrive at the border guard camp at around 16.30hrs. A 9 hour day and a good taxing finish to the physical side of the expedition.

We arrive at the camp site to find that Leonrid has done us proud – freshly baked Pitta bread and a couple of pots of tea. This is just the job after experiencing what felt like "fat camp" over the last couple of days, as rations have come to be increasingly smaller. Having said that, we had just enough. As we demolished our Pitta bread, Achmed appeared with a bag of miniature spirits. He has friend who works on the airlines. We are grateful for his gifts of Whiskey, Gin and Bacardi, and toast the end of the mountain phase.

SAT 29TH JULY 00

This is really a spare day, built into the programme to allow for any delays in the mountains. It comes in very useful for sorting out kit, cleaning cooksets, drying and coiling ropes, re-packing kit, and all that mundane stuff. Mick and Al G spend a lot of time on the computer, updating the web site with a map with all our routes on and who climbed what.

The day is also useful as a bit of R&R, a chance to relax a bit after what, for some of us has been like "Selection"!

A few of us take the opportunity to carry out a full submersion into the freezing river, this is highly refreshing, and the glacial grit in the water certainly cleans the parts that normal soap can't reach! A few of the lads build a miniature coliseum out of pine cones and twigs, the gladiators are the ants, and the guys collect stunned horse flies, which have been feeding on us since we arrived here, as their victims. The ants seem to be winning – revenge is sweet. We are also running low on rations here as well, but Leonrid still knocks up some decent scoff with limited supplies.

SUN 30TH JULY 00

06.00hrs start – breakfast and then we hike down to the foresters cabin, a 1½ hour walk. Upon arriving there no transport is waiting. Minutes earlier, we had the first look at the bridge that had been wrecked by the bus over 3 weeks ago. It still had one major log remaining, so we were able to cross, no problem. The disappointment of the transport not being there was elevated when one of the guys who lives in the foresters cabin brought us out some tea, bread and real honey – they have bee hives on the premises. He brought out a couple of bowls of honey in the form we are familiar with, but also some proper honeycombs. This was a first for most people, including myself – very tasty. Achmed turned up with a couple of trucks at around 11.00hrs and went up to the border guard post to collect the bags and the porters etc. This took a long time, they didn't return for around 3 hours. We were eventually on our way after 2pm, the mode of transport a truck that had a "home made" bus as a box body. The air con was the dusty air swirling round, the plastic sides of the box rolled up. Time was getting on, and after passing through Sarkan and onto Taldy Kurgan at around 9pm it was time to stop and eat. Achmed found a restaurant, and little did we know at that point, we would be having an impromptu end of expedition function. A sumptuous meal was followed by indulgence in some fine Kazak Vodka, with toasts a plenty, sing song and merriment. It gets a bit hazy there, so I'll sign off. Look out for the video!

MON 31ST JULY 00

It's 6am, we're 40km from Almaty, and we're wearing sunglasses.

Our driver has played a blinder and has driven through the night while we slept like men who had canned 10 bottles of Vodka the night before. I have vague recollections of myself and Mick insisting that we stop at a roadside bottle shop, and getting Grubby to do one armed press - ups in order to prove to Achmed that the British Army was better than the German Army (long story) We then drilled Achmed, marching him around an imaginary Drill square, in case he wasn't convinced.

We get to the hotel, and the remains of the day are spent on R&R. First port of call is the Hyatt Regency hotel for the traditional post exped. Posh shave. Al G, Mick and Myself are later joined by Frank and Stu. Unfortunately, they don't do wet shaves, so we console ourselves with some posh beers, posh cakes, posh read of the posh papers, posh background piano music, and some posh "luxury" smokes. Splendiferous!!

TUES 1 - THU 3 AUGUST 00

The next 2 days are pretty much ours to do the last minute souvenir shopping, tourist attractions and social exploration. Aivar and Dennis look after us well, showing us some interesting places in the city. On Tuesday morning, Dennis takes John O, Grubby and myself to the "Arasan" sauna and baths. This is an impressive building, very large, and obviously the place is a big thing with the locals. The sauna has a Russian, Finnish and Turkish part. We got to the Russian section and get thoroughly cooked in an unbelievably hot sauna.

In the afternoon, Dennis turned up in his jeep, an old Russian military model, and takes us to the Army Museum, the TV Tower, the Presidential Palace, and to his mate's café for a feed. (very good call).

That night, Mick, Frank, Grubby and myself head to the Havana Club, part of the Hyatt Regency complex. Excellent establishment, excellent expensive beer, excellent even more expensive Tequila and the scenery's not bad either.

Wednesday sees our end of expedition meal at the previously frequented Indian restaurant at the café Namaste. We are joined by Aivar, Dennis, Achmed and Leonrid. Another good meal and generally good craic. Frank, Mick and myself head on for a final blast at the "Tropicana", posh gaff, Mexican music and dancing, "Del boy" style posh, eccentric cocktails. Mange Tu, Rodney, Mange Tu.

The bus arrives at the hotel Otrar, to take us to the circus that is the airport customs and check in, glad we've had a few beers.

An Unbelievable Unforgettable month comes to an end. I hope to be bringing you the diary exploits and shenanigans on the next apogee - times like these don't grow on trees!

Diary by Sgt Alan Beeton RE.

Personal Views

Spr Andrew Grubb

For me the expedition was a resounding success. I managed to climb a good number of peaks, many of them unclimbed and all of them physically and mentally demanding. I was taught by Capt John Owens how to get through the minefields of crevasses and how to better my climbing techniques whilst on ice and snow wearing crampons and using an ice axe. My administration has also improved. I have learned that helping others out and staying well on top of my admin allows for an easier life and is more sociable. On the expedition I truly felt like a participating member of the team and had no trouble getting on with my team mates, the Kazak soldiers and Kan Tengri staff. I have been able to visit a country, climb some of its' highest peaks and sample its' culture. I have done things, which many people will never experience. Washing in a freezing cold glacial river, not washing properly for a week, drinking horses milk, fighting off biting flies, eating dried apple and minging meat in paprika, being taught by a Kazak soldier how to field strip an AK47, how to throw together a half decent meal and numerous other experiences many others in my age group and situation may never see.

The expedition gave me some insight into the large amounts of organisation and planning, which go into making an expedition as successful as ours was. After coming back to Almaty, although there was some sense of relief that I would be able to rest, it also felt strange to be back in civilisation and a bit of an anti-climax after enjoying the freedom the mountains offer.

My achievements in this expedition have surpassed what I thought we'd manage in the space of time. Being an exped virgin I had based my expectations on what those who had been on expeds before had told me. This was very useful because I was under no illusions of going on a month long holiday and I knew that there would be times of discomfort. I expected a great deal of walking and load carrying, times when food would be rationed and the foot blisters typical of sustained climbing over a period of time. I hadn't expected to manage to climb the number of peaks we climbed. I knew the expedition was a once in a life time opportunity and a real-life adventure.

Spr John Wharry

When I first heard about the Apogee 2000 expedition I saw it as an almost once in a lifetime chance. As a complete novice of mountaineering it was a fantastic opportunity to acquire new skills and experience the rigours of living and climbing in such a remote region of the world.

I expected from the expedition a lot of hard work, but I can honestly say I enjoyed every minute of it (apart from washing in ice-cold rivers). The highlight of my time in Kazakhstan was reaching the top of a previously unclimbed peak, the feeling I got up there was indescribable.

All in all I have taken from this expedition a wealth of new skills and experiences that can only serve to aid me in the future. If the chance to participate in an expedition of this nature occurs in the future, then I would highly recommend it to anyone.

Capt John Owens

I first became involved with the expedition in Nov 99 when Stuart Batey asked me to join as the climbing leader. At that stage the exped was due to go to Siberia and as I was very keen to visit such a remote and rarely visited region I agreed at once. I then had to convince my new boss, Col Bob Hendicott, CRE HQ 3 (UK) Division that I should be allowed to go. Considering that I asked him on my initial interview I thought that he was very generous in agreeing!

One of the key aspects of the expedition for me was that it involved a number of junior soldiers, several of whom had little or no mountaineering experience. I have organised several expeditions in the past and this has always been one of my main aims. It is however getting more and more difficult as the 'system' requires a greater emphasis on leader/student ratios and general experience of the whole team. We were fortunate to get through the vetting committee with the balance that we had.

Another key aspect of the expedition was that it was to an area that has been largely overlooked by mountaineers. This is probably due to the proximity of the area to mountains up to 7,000m in height, but meant that we were able to visit a number of valleys that had never been climbed in before. We were in splendid isolation for the whole of the expedition and with the exception of a few border guards we saw no one else.

One of the most satisfying moments of the expedition for me was standing on the summit of Pik Semeonov Tien-Shansky (4,622m) interviewing a young Kazak called Denis. He was part of our camp staff but was also a keen Alpinist and so we had taken him along. He was extremely proud to be the first Kazak to climb what was the highest peak in the region and expounded at length in Russian for the video camera (he spoke little English). We could see mountains in all directions with visibility out to almost 70 miles and knew that in such a huge area that we were the only climbing team on any of the peaks.

My thanks go out to Stuart Batey and Mick Jenkins for their considerable effort in pulling together the expedition. The area chosen was ideal for mountaineering but was very tricky for a Military team to visit.

SSgt Frank McCorriston.

What has Ex Kazakh Apogee meant to me? As an old "Apogee hand" and confirmed adventure trainer I had no need to be convinced of the usefulness of adventure training in the forces as a whole. There has never been any doubt in my mind of the value of this sort of training, both to the individual and the organisation. This expedition merely confirmed the benefits to be gained, at all levels, from exercises of this type. On a purely personal note however I think this one was slightly different.

While the previous two Apogee expeditions I have been on were regarded as successes I have always felt slightly robbed by circumstance. In Ladakh freak weather caused us to abandon our attempt at Kang Yissay. In Chile, freak weather conditions (again!) meant that we could not even approach Ojos del Salado. The loss of time due to the conditions meant that most of the team, myself included, were relegated to supporting a small team on their successful attempt at another peak. I still thoroughly enjoyed both of these trips and regarded them as a success both for myself and the team, however a little voice in the back of my head said "wouldn't it be good to go on a trip were we managed to achieve our original aims and I personally achieved all I wanted to?"

Fortunately Ex Kazakh Apogee has proved to be that occasion. I feel that circumstances fell into place almost perfectly. Despite the usual hiccups and changes of plan the team achieved all of it's aims and objectives and I personally hit a purple patch that saw me climbing fit, strong and almost continuously! The high point of all this was summiting on the highest mountain in the range, Semenov Tien-Shansky. To be standing on top of the highest mountain in a range the size of the Alps, knowing that we were the only climbers there was truly amazing. I think the only thing more I could have asked of this Exped was that it was longer to allow us to have climbed even more! All good things must come to an end.

There was of course much else that I got from the expedition, as I would expect of any exercise of this magnitude. It was the great personal sense of success and achievement that made this one a little bit different.

Sgt Alan Beeton RE

I will talk first about what I expected from the exercise, then what I personally gained out of the experience and what I thought of the expedition overall.

Having been on one previous Apogee expedition to India, I had a fair idea what to expect. One thing I learned from that experience was that no matter how much things are planned for and what the group wants to achieve in the mountains, the plan is usually going to have to change. On previous apogee expeds this has sometimes meant that although the trip may have been successful in that some quality adventure training was carried out, the main mountain wasn't climbed due to unforeseen circumstances, (usually the weather!)

Fortunately, the fact that you have to be flexible to the extreme with the plan on these expeditions can sometimes work in your favour, and you can actually achieve, climb and explore more than you had set out to do. This was certainly the case in Kazakhstan.

This leads me to what I gained from the exercise. I regard myself as one of the "intermediate" mountaineers of the group trying to make the transition to one of the "experienced".
To gain that experience there is no substitute for quality mountain days and these were plentiful on this expedition. I believe I also need to learn from the guys with more experience than myself, and we were fortunate to have a fair bit of expertise out there. I will hopefully be going on a Mountain Leader Training course in November, and the Exped as well as the Pre - Exped training has been very invaluable training. I hope to be able to take groups into the hills myself soon and, in the more distant future, lead one of these expeditions myself.

On a more personal note, being in that beautiful, so remote part of the world for a few weeks was unforgettable; definitely one of the most memorable times I've had in my life. I believe that adventure training should be mentally and

physically testing; that you should feel a real sense of achievement once you have done something as challenging as we did. It was very satisfying to get back and reflect on the fact that we climbed, as an exped, eleven mountains. I was obviously pleased to have climbed eight of those and felt strong most of the time, and more and more confident in my abilities as a mountaineer.

Finally, it probably goes without saying I thought the exped was a total success; all the more amazing when it was plan "B" after Siberia had fallen through. I look back fondly at the little (and big!) Expedition dramas such as lost bags, biting insects, house on back, crevasses, rock fall, bus in river, kit on bus in river, snow too soft, ice too hard, no view at the top, 3 in a tent, river crossings, another boulder field, another plate of porridge, another Summit, and I think to myself "this job ain't so bad, what could I possibly rather be doing?"

Spr D Weller.

Having never taken part in any expedition, the size or complexity of Kazak Apogee, it was with some trepidation that I asked about being considered for an expedition that was being planned for sometime in the future. "Come back in a couple of months!" Was the reply!

Well a couple of months went by, and here I was again, asking for an application form. Having completed and returned it, it suddenly dawned on me what I was potentially letting myself in for. But then again I thought I didn't stand much of a chance, having never been climbing, let alone mountaineering. My only plus points were the fact that I had experience of doing scientific work (completed at college) on such areas. And so it was.

Then the usual trouble starts in some flung corner of Europe, and I was in the thick of it. Mean while the selection procedure carried on a pace, with a week in Scotland. Upon my return though I was surprised to be asked if I was still interested. "Damn, right!" Came the answer. Just one more selection week to complete in the Cairngorms, which went well, and before I knew it we were collecting the kit from our sponsors and Bicester. My, doesn't time fly.

It was at this point that things seemed to speed up. So much to do, yet so little time to do it. And before long we were getting on the plane at Heathrow. The next five weeks were to fly by in hindsight.

I must admit the social and cultural aspects of the trip were as interesting for me as the climbing or scientific aims. The mix of culture, religion and a post communist state that was creaking at the edges was fascinating. But then came the hard work. Emphasis on the hard, but by no means less enjoyable. But then at least I had my rocks to keep me happy.

A couple of minor incidents (and one major) and here we were in the middle of, well, what would have passed for an area of the Alps, had there been any people there! And so the work keeps coming. One success would lead on to another, and so on until before we knew where we were, we had climbed 15 peaks (including 7 first ascents), hiked, well I don't know how far and covered tens of square kilometers of mountains it was time to start planning for our recovery. This like everything else went very well, especially when oiled by large quantities of local vodka. And so it was we found ourselves back in Blighty. Thinner, and slightly more tanned than when we left.

So, "Was it worth it?" In Short, "Yes." There was no one factor that made it worthwhile but a combination of everything mentioned above. The planning, the preparation work, culture, climbing, scientific work, the bad weather, the interesting food, the cream teas in the Hyiate Regency Hotel, the bars, Ivor, Dennis, Leoned the vodka. I'm sure you get the picture.

All in all if you ever get the chance to take part in such an expedition, don't hesitate in saying, "YES!"

WO2 Stuart Batey

Kazakh Apogee 200 has not been a five week adventure training trip for me, it has been (and still is) an encounter with 'Army Admin'. The whole experience has been rewarding but I would be lying if I said it was all enjoyable. The two team selection and training exercises in Scotland were great fun and helped enormously in getting a good team together. The paperwork, letter writing, form filling and general administration required to get this thing off the ground have been at times frustrating, at times hard work but always a huge learning process for me. Gaining the approval of the RGS, the MEF and the Joint Services Expedition Trust after giving several presentations of our aims were real high points.

There has been one area in particular where I have learned more than any other; getting volunteers to deliver what they promise. My patience has reached heights I never would have thought possible but even though I have occasionally showed magnificent composure and understanding I did, usually feel much better after the odd bellow down the telephone wire. All in all the organisation of a major adventure training project like this, has been hugely beneficial to my personal development.

The hardest times were keeping motivated when it looked like the trip to Siberia was not going to happen and motivating myself to put in all the work required to get the Kazakhstan trip going. Mick Jenkins helped a great deal and we are both responsible for getting the trip off the ground but it was very difficult to inject the high workload required for two expeditions. Getting clearances are the most frustrating aspect of the whole experience. However, there is probably no other way to organise a trip like this, the diplomatic clearances are always going to get decided at the last minute.

The expedition itself was over all too quickly. Kazakhstan was friendly and exciting, I felt like the luckiest man alive when we had these mountains to ourselves. Our logistics company Kan Tengri took a little bit of getting used too as would be expected but then proved to be a great addition to our team. The most rewarding aspect of the expedition for me was the knowledge that every one of the team felt the expedition had been something special in their lives. Our achievements in climbing and exploring as much as we did were down to all the team members and I am sure everyone feels a great sense of ownership for the huge success of the expedition.

We have not finished yet however, we still have promises to deliver on our scientific aims in particular. I feel confident we can break new ground in this area like we have in our use of Internet website and communications technology. I will feel very proud of our efforts when our GIS database and map are finished.

The expedition as a whole has been a huge commitment for me and my family, who had to come second on many occasions, and my level of participation in further trips requires careful consideration. They do say however, its much easier second time around. I have no doubt I want to get back into the mountains at some point and somewhere as remote and beautiful as the Dzhungarian Alatau would suit me every time.

Annex E To
Kaz PXR 42/780/3
10 Oct 00

CLIMBING REPORT

INTRODUCTION

1. The main attractions of the mountains of the Dzhungarian Alatau to the expedition were that they offer Alpine style climbing, up to an altitude of 4600m, on relatively unexplored mountains and yet are fairly accessible from Almaty which has an International airport. As far as we could ascertain the region had also only been visited by a Soviet team, who had climbed the highest peak in the region some thirty years ago and once by a Western team in 1998.

CLIMBING AIMS

2. The climbing aims of the expedition were as follows:

a. To carry out exploratory mid-altitude snow and ice mountaineering in a rarely visited range with defined objectives of making several 'first ascents'.

b. To introduce novice to the rigours, hardships and challenges of exploratory mountaineering in a remote region.

PEAKS CLIMBED

3. A summary table showing the peaks climbed and the climbers is as follows:

Serial	Date Climbed	Peak	Height	Climbers
1	12 Jul	Pik Fougasse *	4080m	Owens, Wharry, Beeton, McCorriston, Grubb.
2	13 Jul	Pik Nangers *	3330m	Batey, Grubb, Gransden, Jenkins, Clare, McCorriston, Morrish.
3	14 Jul	Unamed	4100m High Point	Owens, Beeton, Grubb, Burks, Wharry
4	15 Jul	Pik Roy *	3940m	Burks, Grubb, Beeton.
5	16 Jul	Pik Conandros *	3587m	Batey, Jenkins, Gransden.
6	17 Jul	Pik Matthew *	4440m	Owens, McCorriston, Wharry
7	22 Jul	Pik Dzhambula	4350m	Owens, Batey, Grubb, McCorriston, Beeton, Gransden, Denis Alimpev.
8	23 Jul	Pik Shumsky (4442m)	4300m High Point	Burks, Jenkins, Morrish.
9	23 Jul	Pik Semeonov-Tien Shansky	4622m	Owens, Batey, Grubb, McCorriston, Beeton, Gransden, Denis Alimpev.
10	24 Jul	Pik Spudnik	4040m	Owens, McCorriston, Grubb, Beeton.
11	25 Jul	Pik Apogee *	4511m	Owens, McCorriston, Grubb, Beeton.
12	25 Jul	Pik Davidovitch	4501m	Owens, McCorriston, Grubb, Beeton.
13	26 Jul	Pik Natalya	4207m	Owens, Grubb, Beeton
14	26 Jul	Pik Spudnik (different team)	4040m	Burks, Jenkins, Morrish.
15	27 Jul	Sapper Ridge *	3405m	Batey, McCorriston.

APPROACH ROUTES

4. Base Camp. The original plan to approach the base camp from the West via the Surly Col was fortunately not used as several of the bridges across the Little Baskan river were reported to be down. Instead the approach was made via a foresters cabin to the last border post before the Chinese border at UTM GRID 447169 5009110. From here the track crossed two rivers (we used a 4 x 4 truck) before following the Greater Baskan River for 5 Km where it split off to the SE. The truck was able to continue, making its own track for about 3 Km to a point high above the left bank where a stream descending from the left had created a steep bank. From here the route followed the left bank of the river through woodland and open flower meadows to a point where the river was relatively flat and could be crossed. The route then crossed a wide meadow, before briefly steepening for a short section and then opening out again just below the boulder field. The camp was sited on a raised area just above the flat meadow and marshy area below the boulder field. It took 4 hours to walk from the police post or 1 ½ hours from the 'roadhead'.

5. East Valley. From base camp the approach to the East Valley Camp (EVC) entailed dropping back down the valley for about 1Km, before turning right and following the right hand bank of the river, initially steeply through tough low lying fir scrub and then across a wide grassy valley. It had been intended to put the camp as high up the valley as possible, but due to difficulties with the porters the camp ended up about 20mins below the terminal moraine on the last flat section of grass before the moraine. The route in from base camp took approximately 3 hours with heavy packs (1 ¾ hours to descend) and there was no sign of a track of any kind, although animal tracks offered the easiest walking.

6. Abay Glacier Camp. From base camp the boulder field was climbed on the right side as far as the lake, an area of very large boulders had then to be crossed in order to reach the East side of the lake (the left side being impassable due to cliffs). This left side was comprised of very loose scree and was crossed at the waterline. In hindsight it would have been better to climb the boulder field on the left instead and this was the route used the next day for the descent. Either way would be impossible for horses and very difficult for porters (although we were carrying about 60lbs!). It took 2 hours to reach the far side of the lake. From there a relatively flat meadow was crossed to the terminal moraine and then the left side of the moraine was climbed in about 3 hours to a point where the relatively easy ridgeline of the lateral moraine unfortunately disappeared as the left hillside became much steeper. The moraine itself was then crossed to a point just below a steep and crevassed section of the glacier. The camp was then placed on the moraine between two fingers of glacier (it could easily have gone further up however we were happier to camp away from the hanging glaciers to the South).

7. Little Baskan Camp (LBC). The route to the Little Baskan valley from base camp involved following the West side of the valley for about 2 Km, maintaining height where possible on a vague animal track. The valley leading to the Surly pass was then climbed, through very deep grass, for several Km's to the Col. This took about 3 ½ hours from base camp. The descent down into the Little Baskan Valley was on a track used by the military and hunters/foresters in the past and was thus easy to follow, this path is no longer maintained and so may deteriorate. We reached the valley bottom in another 1 ½ hours and then followed the left bank of the Little Baskan River through trees initially and then grass meadows for about 5 km to a point where the Shumsky valley branches off to the left. The camp was situated on a broad grass meadow just before the Shumsky River. It would have been better to move the camp on another 400m to where a fresh water stream was situated but our horses would not cross the Shumsky river as it was late afternoon and in full spate. Total walk in time was approximately 10 hours from base camp.

8. Little Baskan Advance Camp. From the LBC the left side of the Little Baskan River was followed, crossing two large areas of loose boulders and a flat meadow to the lake. The lower section of boulders could be avoided by

crossing the river, but this was waist deep and very cold and so was not recommended (one of the 1998 team had unwillingly taken a swim at this point!). From the lake we again stayed on the left bank to a point where the river disappeared into the bottom of the terminal moraine. This was then climbed following a number of cairns left by the last team or by geologists. The route then followed the meltwater river up the centre of the moraine for a number of Km's until the snout of the glacier was reached. This could be climbed directly and the camp was then placed on the very prominent medial moraine (a thin strip of moraine extending all the way to Pik Spudnik). The camp was placed on a relatively flat section of this moraine.

9. Peak Shumsky Bivi Camp. From the little Baskan camp, the Shumsky valley was easily accessed up the left side of the river. From the Baskan camp, a flat bivi site was reached in around 3 hours, initially over pleasant grassy terrain before a harder climb over boulders to the moraine. The bivi site was located on the left hand side of the glacier (the best approach) and gave good glacial access to the peaks inner cirque. A further, higher camp close to the beginning of the ascent route (North ridge), could have been easily established but would only have saved an hour's climb.

VALLEY DESCRIPTIONS

10. East Valley. The head of the East Valley comprises a Cirque of very steep mountains, most of which are just over 4,000m in height. These are threatened by rockfall and have a number of hanging glaciers and thus offer few opportunities for climbing. The three peaks in the SW corner of the valley are less threatened and thus offer potential routes. Of these only Pik Fougasse was climbed, mainly because the glacier was covered in deep soft snow which impeded progress. The peak in the bottom SW corner looks very impressive and there is a potential route up the East face (see Fig 9) passing a number of seracs or alternatively along the ridge from Pik Fougasse as described below. Further down the valley the peaks consist of very loose rock but the ridges do offer some potential routes (one of which is described below).

11. Abay Glacier Valley. The valley is blocked about 8 Km from its head by a large area of boulders and it is these that have created the lake. Steep mountains to the South along the Chinese border again dominate the head of the valley. One of these, Pik Matthew was climbed via the N Face and this is described below. The peaks further East comprise a long ridgeline from Pik Davidovitch around to Pik Shumsky and then to a couple of unnamed and unclimbed peaks. All of these offer opportunities for climbing, both on snow and ice climbs and on rocky ridges, although again these look very loose. The glacier is heavily crevassed but can be followed up the left bank, at the time of this expedition the glacier was covered from 3600m with deep soft snow. Further down the valley the opportunities are more limited due to the loose nature of the rock, there are however a number of peaks to the West of the lake that would offer potential acclimatisation routes.

12. Little Baskan Valley. This valley offers the best opportunities for climbing in the area and for some reason during this expedition the glacier had much less snow on it than the valleys further East. The top of the valley is dominated by Peak Semenov Tien-Shansky which is the highest in the region at 4622m. To the North of this peak is a deep U shaped valley which is protected by an icefall, however this can be avoided to the left. This valley contains the peaks Davidovitch and Apogee and is flat bottomed providing an ideal area for some steep snow climbs. The West side of the Little Baskan Valley is dominated by Pik Dzhambula and by an unclimbed peak at 4249m. It would be feasible to cross via a straightforward Col into China at the head of the valley.

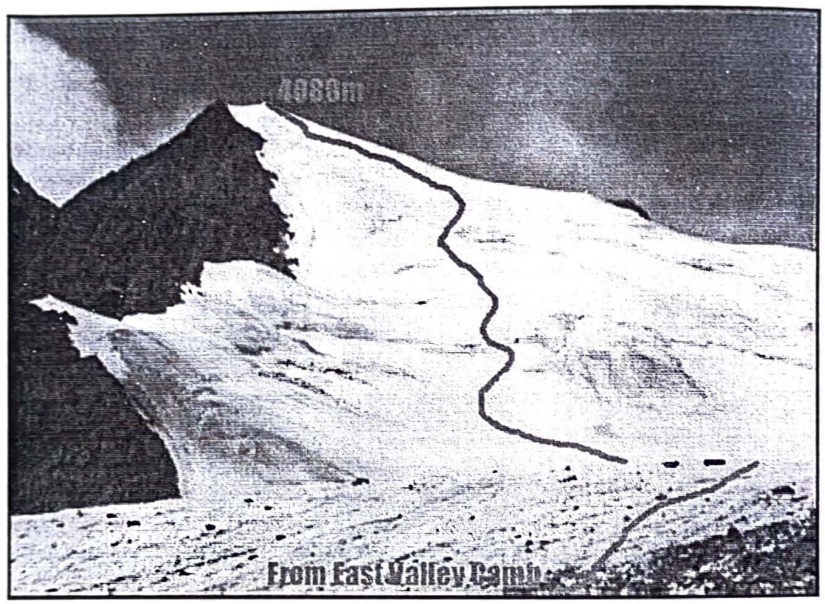
13. Violetta Valley. The Violetta valley is a small valley leading off to the West just below Point 4249m. The valley contains five fingers of glacier and offers a number of routes, of these only Pik Natalya was climbed via its N Ridge. The remaining peaks are mostly free of snow with the exception of Point 4249m which could be climbed via the NW ridge, this looks relatively straightforward but steepens to about 50° towards the top.

CLIMBING ROUTES.

14. Peak Fougasse (4080m). From the medial moraine, the route followed a dry glacier up to a bowl below the N face of the mountain. This bowl was filled with soft waist deep snow and the route to the bottom of the face was consequently very strenuous. A number of large crevasses were crossed with little indication of their presence other than dark holes opening up beneath our feet. The North face proved to be of an average angle of about 30-35° and was climbed in a series of zigzags, passing several large crevasses, by the route shown at Figure 1. The summit was reached by an un-aclimatised team in 6 ½ hours from the base camp, or 3 ½ hours from the end of the glacier. Decent was via the same route due to worsening snow conditions and a thunderstorm with heavy rain. Grade PD

15. Alternate routes on the mountain are limited due to the loose nature of the rock to the SE and SW. The ridgeline to the West could provide a route, however it is steep at the bottom and threatened by several seracs. This peak does however provide an ideal acclimatisation/introductory climb. It might be possible to climb Peak Fougasse from the summit via the ridge to the South, however this looked both steep and quite loose.

Figure 1 Peak Fougasse



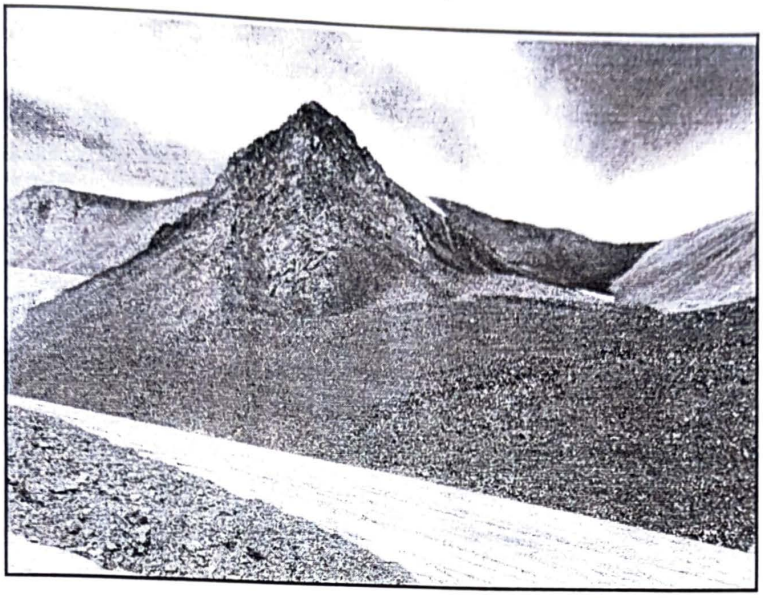
16. Pik Nangers (3330m). A relatively straightforward rocky peak, this was climbed directly from base camp via the West face to a Col on the main ridge above the Great Baskan Valley and then via the N Ridge (a grade 2 scramble) to the top.

17. There are a number of alternate scrambling routes on the mountain, however much of the West Face is steep loose rock and so this side is not recommended.

18. Pik Roy (3940m). This peak was climbed as part of a rocky horseshoe from the glacier above the East Valley Camp. The route initially followed that described above for Pik Fougasse as far as the snout of the glacier. A rocky ridge to the West was then climbed to the top and the horseshoe followed to the summit (4 hours from East Valley Camp). The route taken is shown at Fig 2, although the summit is hidden on the photograph behind the prominent peak. A scree slope was then descended back down to the glacier.

19. Alternate routes are again limited due to the loose nature of the rock.

Fig 2 Pik Roy



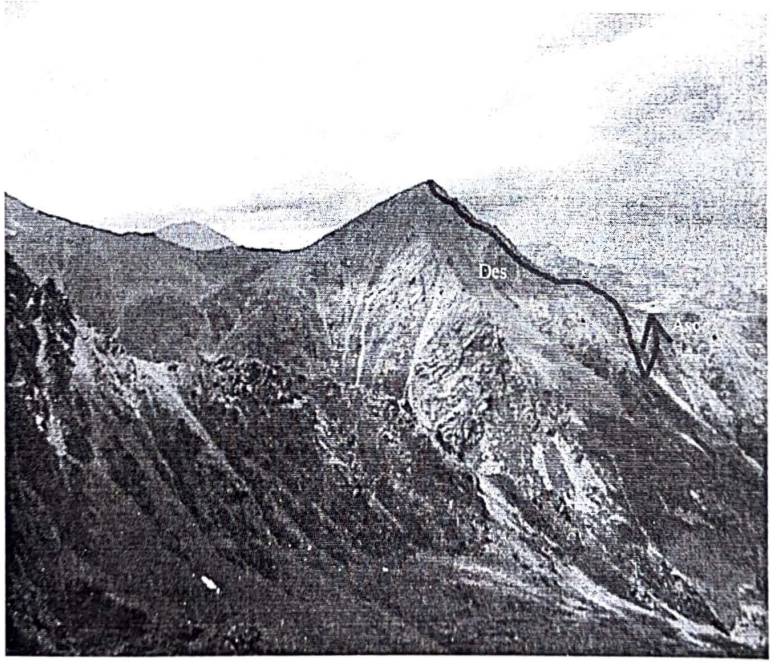


Fig 3 Pik Conandros

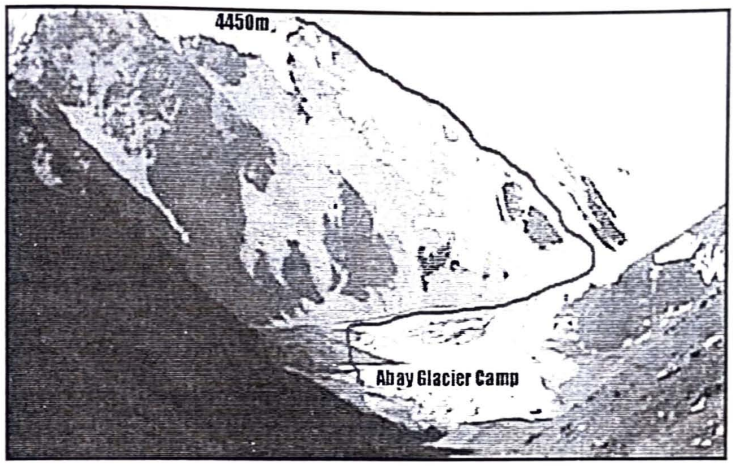
20. Peak Conandros (3587m). This peak dominates the Abay Glacier Valley to the West of the lake. It was climbed directly from the base camp via the steep grass and rock slopes to Col on the NE Ridge. The team then traversed across under the N face to a point where the N Ridge could be climbed to the top. Time take for the ascent was 4 hours. The horseshoe was then followed around and down the NE ridge and back to the Col. The ascent ridge was a

grade 2 scramble, however the descent was more tricky and was a grade 3, particularly where the team strayed too far left onto the N Face! The route is shown at Fig 3.

An alternative route on the mountain would be to climb to the lake and then approach from the South. Due to poor weather conditions this route was not visible from the top, however it is anticipated that it would be a straightforward scramble.

22. Pik Matthew (4450m). From the Abay Glacier Camp the route followed the left hand bank of the Glacier, which was heavily crevassed, to a point a just to the right of the rock rib shown on Figure 4. From here a steep slope was climbed directly for nearly 2,500ft to the West Ridge. This slope was initially at an average angle of about 45-50° but this eased after about 600ft. The route was on good snow, however there were a number of small crevasses that had to be bypassed. From the top of the snow slope the ridge to the summit was relatively straightforward but loose and a couple of gendarmes could be passed easily. The climb from the bottom of the face took 3 ½ hours (1 ½ in descent). Descent was by the same route due to the rapidly deteriorating weather conditions. Grade D.

Figure 4 Peak Matthew

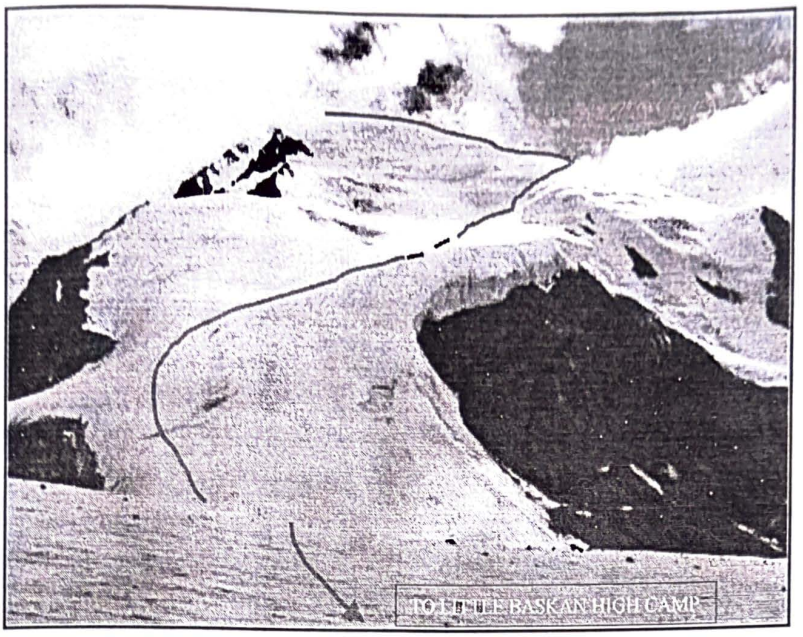


23. Alternative routes on the mountain are limited because it is on the Chinese border and because of the hanging glaciers on the North face. It could be approached from the Col further to the West (probably more straightforward than the route described above) or climbed as part of the ridgeline from peak Davidovich. Care needs to be taken when crossing below the North face as the crevasses on the Abay glacier force you closer to this face than is desirable as it is very avalanche prone.

24. Pik Dzhambula (4350m). From the high camp the glacier was crossed in 40 minutes to a point below Pik Dzhambula where a dry glacier spilled over a rocky outcrop to meet the main glacier. This was climbed in another 40 minutes to the rocky outcrop. From here the route crossed a flat basin, across deep soft snow and bypassing a number of crevasses to the base of the NE face. This was climbed, tending right and avoiding and area of seracs to the N ridgeline (2 ½ hours from camp). From there it was a relatively straightforward climb up the ridge (30°) to the summit in a total of 3 ¾ hours. Grade PD.

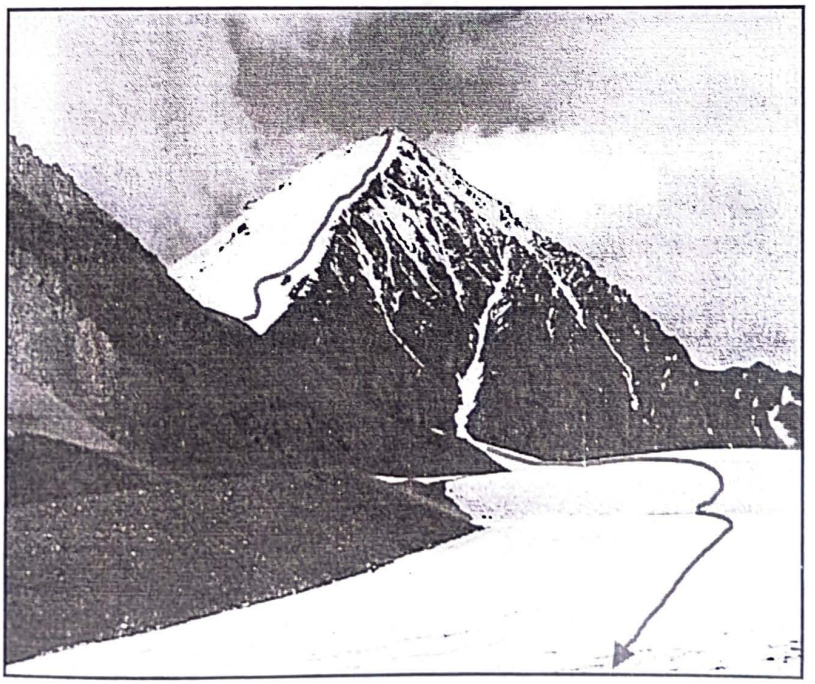
25. There are a number of alternative routes on the mountain, the one offering the most potential would be the ridgeline from the SE. This could be climbed from a Col to the West of Pik Spudik, over a number of subsidiary tops to the summit. This would be a major ridgeclimb as the summit ridge is several Km's long and follows the Chinese border. There are other potential routes on the East face, however care would need to be taken to avoid the seracs.

Fig 5 Pik Dzhambula



26. Pik Semeonov Tien-Shansky (4622m). This is the highest peak in the region and was reputed to have been climbed in the 70's by a Soviet team. From the high camp the glacier was crossed in an hour to a point just below the icefall from the valley to the North of the peak. This icefall was avoided by climbing the scree on the left hand side, although it would provide a relatively safe place to try some ice climbing. From the base of the U shaped valley the North face was climbed directly to the summit. This was initially between 30° to 40° steepening in the centre section to about 45° and was climbed in a series of zig-zags, holding as close to the rock line to the NW. The snow conditions towards the top were very poor with about 6" of windslab over hard ice. The last 50m to the summit were over loose rock. It took our well acclimatised team 4 ½ hours from high camp. Grade PD.

Fig 6 Pik Semeonov Tien-Shansky (4622m).



27. Alternative routes on the mountain are again limited because it is on the Chinese border, however it could be climbed via the East Ridge, from the Col between it and Pik Davidovitch. This ridge has a number of rocky pinnacles, however it is anticipated that these could be avoided by traversing onto the face to the right. This route would take slightly longer but is likely to be safer when snow conditions are not good.

28. Pik Spudnik (4040m). This is a small triangular shaped mountain at the head of the Little Baskan Valley. It was climbed in 2 hours via the East Ridge which was at about 35°. A descent was made of the North ridge, however this is not recommended due to the danger of rockfall.

29. There are a number of alternate routes, however care should be taken if passing to the West of the mountain due to rockfall danger.

Fig 7 Pik Spudnik

30. Pik Davidovitch (4501m). From the base of the U shaped valley, this peak was climbed directly from the SW up a narrow snow slope. This was initially angled at about 35° but shortly below the top steepened to about 50°. The climb took just over 3 hours from high camp by a very fit and fast moving team. Grade D. The summit of Davidovitch is a long rocky ridge with areas of snow and cornices. The ridge was traversed in both directions to Pik Apogee and to the Col before Pik Semeonov Tien-Shansky. In parts the ridgeline consists of steep loose rock and several of these had to be bypassed, at one point dropping about 50ft into China.

31. There are a number of alternative routes on the mountain, including several from the Greater Baskan Valley and it was climbed in 1998 via the Col between it an Pik Semeonov Tien-Shansky however it is anticipated that this would have added about one hour to the ascent. Grade PD. From the summit we followed the ridge to the West to Pik Apogee. This was a knife-edge snow ridge with a section of loose scree.

Fig 8 Pik Apogee (Left) Pik Davidovitch (Right)

32. Pik Apogee. From the Col to the East this peak was climbed via the East Ridge, which was a straightforward snow climb and took about 1 ½ hours from the summit of Pik Davidovitch. Grade PD.

33. Alternative routes include the North Ridge from Pik Shumsky, about 4 Km away and this could be linked in a full traverse of the head of the Greater Baskan Valley. The peak could also be climbed via an ice climb on the NE face. The ridgelines to the SW could possibly be climbed directly from the Little Baskan high camp, however these looked very loose and steep.

34. Pik Natalya. From the end of the Violetta valley a large boulder field was crossed to the base of a glacier spilling out of the Cwm between Pik Natalya and Point 4249m. This glacier was ascended, passing an area of crevasses on the right to the base of the NW ridge of Pik Natalya. This ridge was then climbed, in very poor snow conditions to a false summit about 50m below the true top. A loose rocky ridge was then followed to the summit. The total climb was 5 hours from the bottom of the valley and the grade was PD.

35. There are few alternative routes on the mountain because of the loose nature of the rock and due to danger from seracs. It could be climbed from the next finger of glacier to the West and then up the NW Face to the false summit.

36. Sapper Ridge (3405m). This ridge has a series of peaks on a steep rocky ridgeline above the Shumsky river. It was climbed directly from the Little Baskan Camp via a Col to the NE. The ridgeline was a grade 3 scramble and was fairly exposed, there is little opportunity to descend from the ridge once on it and the team had to backtrack to the Col in order to get down.

37. Due to the loose nature of the rock it is unlikely that there are other options on this mountain, although it may be possible to climb the ridge all the way to where it joins Pik Shumsky.

ATTEMPTED PEAKS

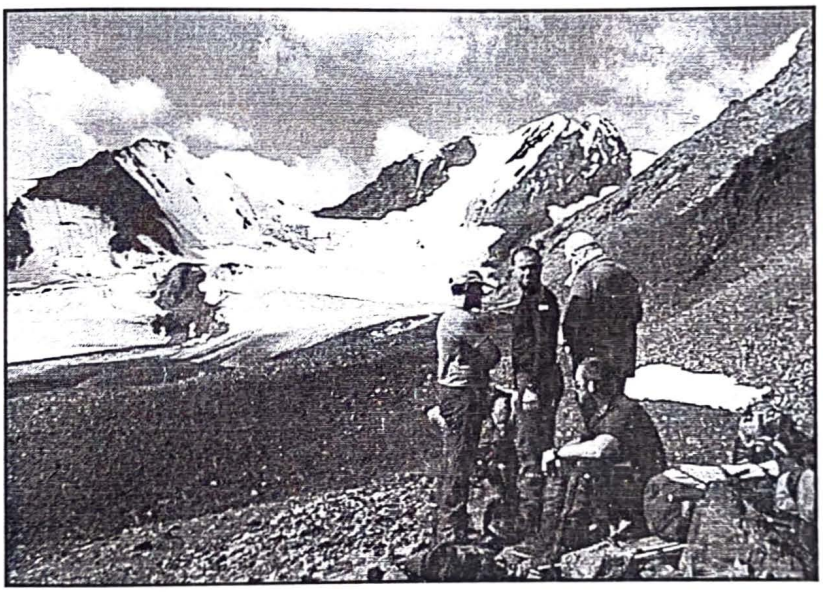
38. Pik Shumsky (4442m). This magnificent peak remains unclimbed despite two attempts from both McGregors expedition in 1998 and our attempt this year. The mountain is characterised (when viewed from the valley) by a huge headwall of snow and ice with tremendous ice cliff formations and steep ice runnels. To the east (left) of the headwall is an obvious, complex rock ridge connected by steep ice ramps from below the ridge, and a

series of snow slopes from above. The rock ridge is the crux of the climb but is not as steep as it looks when viewed from head on, however it does present a challenge given that it is very loose requiring slow safe progress. Once the ridge is surmounted, easier (crevassed) snow slopes lead easily to the summit giving staggering views across the range. The approach to the north ridge gave some cause for concern (during darkness) as the glacier is heavily crevassed requiring a tricky, meandering approach to the ice ramp (which gets steep at 50 deg – front pointing). As luck and fate would have it our front man disappeared 6ft into a large crevasse requiring a torchlight rescue an hour into the trip. The ascent was aborted on the high snow slopes (140m from summit) due to the ever increasing windslab avalanche hazard which became more dangerous the higher the party ascended. The total ascent time from the bivi camp would have taken around 6 hours at a grade of D (because of steep snow slopes and the ridge difficulty). In summary, a magnificent, challenging climb on mixed terrain which is a must for future parties.

39. Alternate routes include the SE Face and the SE Ridge from the Greater Baskan Valley. Both of these routes look relatively straightforward, although the face is quite steep and would need good snow and ice conditions.

40. Unnamed Peak on Chinese Border. This peak, which is shown on the left on Fig 9 was attempted via the West ridge. The team was turned back however by the soft snow on the glacier. The route would have been over to the Col in the centre and then up the ridgeline. It is threatened low down in several places by Seracs and the state of the ridgeline is not known.

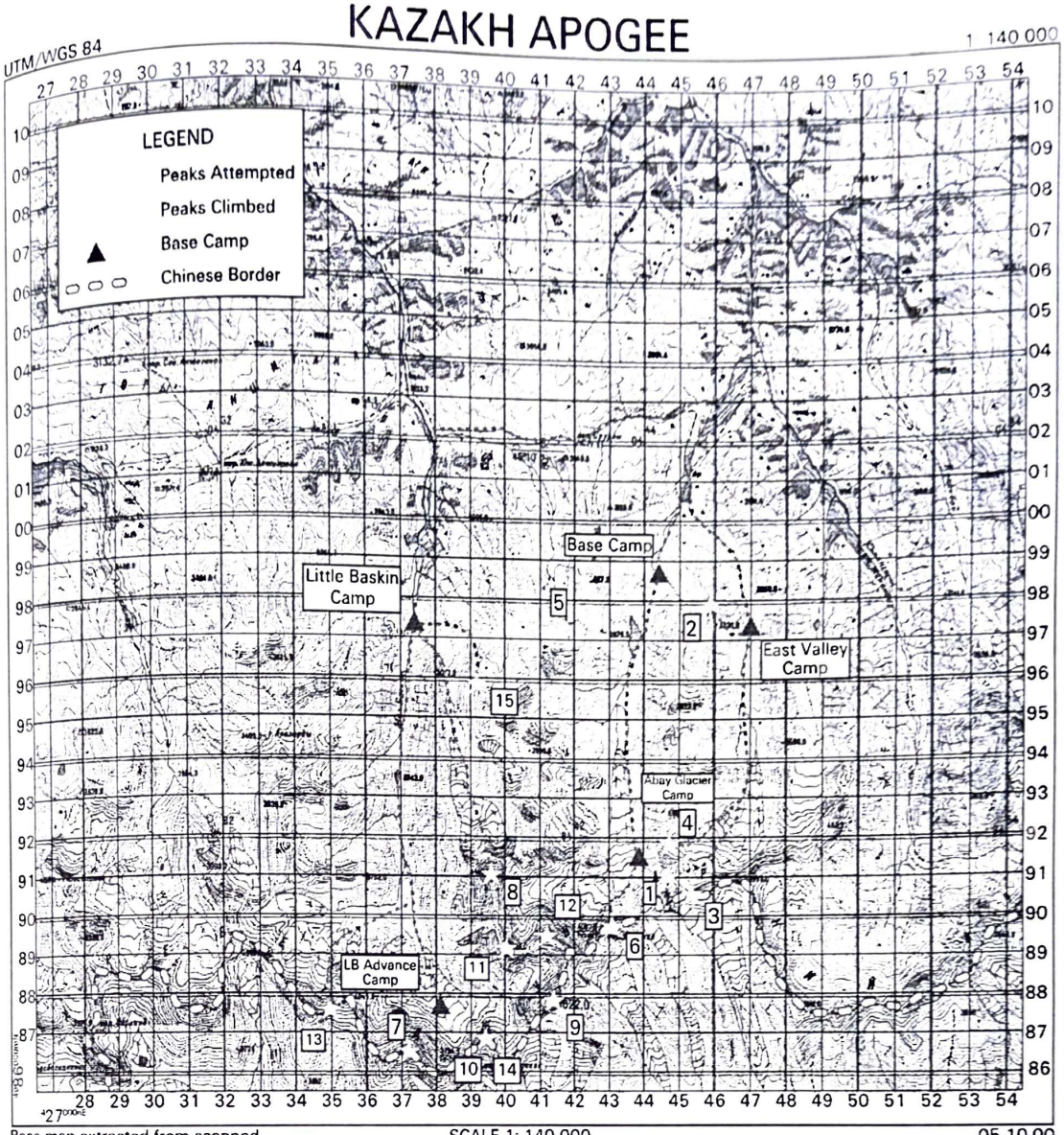
Fig 9 Unclimbed Peaks on Chinese Border



LOCATION MAP

41. A location map giving Lat/Long co-ordinates and UTM Grid positions for all Peaks and camp sites can be found at Appendix 1 to Climbing Report.

KAZAKH APOGEE



Base map extracted from scanned Russian 1:100k mapping.

SCALE 1: 140 000

5 0 5 Kilometres

05-10-00

ID	DESCRIPTION	Ht	DATE	E_Coords UTM/WGS84	N_Coords UTM/WGS84	LAT DDMMSS	LONG DDMMS
1	Pik Fougasse *	4080	12 July 2000	444672	4991335	450423	801749
2	Pik Nangers *	3330	13 July 2000	446081	4997490	450743	801851
3	Unamed (attempted)	4100	14 July 2000	445509	4991278	450422	801827
4	Pik Roy *	3930	15 July 2000	444822	4992618	450505	801755
5	Pik Conandros *	3587	16 July 2000	442289	4998597	450818	801557
6	Pik Matthew *	4450	17 July 2000	443779	4989959	450339	801709
7	Dzhambula	4350	22 July 2000	437159	4986624	450149	801208
8	Shumsky (attempted)	4442	23 July 2000	439494	4991615	450431	801352
9	Tien-Shansky	4622	23 July 2000	441419	4987953	450233	801522
10	Spudnik	4040	24 July 2000	439575	4986908	450159	801358
11	Pik Apogee *	4511	25 July 2000	440084	4989339	450317	801420
12	Davidovich	4491	25 July 2000	441473	4989535	450324	801524
13	Violetta	4182	26 July 2000	434439	4987604	450219	
14	Spudnik (different Team)	4080	26 July 2000	439575	4986908	450159	801358
15	Sapper Ridge * (Pks Wood, Wildman & Walker)	3405	27 July 2000	439312	4996646	450714	801342
	Base Camp	2550	9 & 16-18 Jul	444400	4998850		
	East Valley camp	2830	10-15 Jul	446911	4996842		
	Abay Glacier Camp	3270	16-17 Jul	443678	4992234		
	Little Baskan Camp	2500	20-27 Jul	437541	4997367		
	LB Advance camp	3470	21-27 Jul	438434	4988003		

Annex F To
Kaz PXR 42/780/3
10 Oct 00

KAZAKH APOGEE 2000

TECHNICAL PLAN

INTRODUCTION

1. The Military Survey Millennium Expedition will explore the rarely visited Dzhungarian Alatau in Southern Kazakstan during July and August 2000. As well as having the normal expedition aims and objectives, the expedition has a variety of technical aims and objectives that will be done both before, during and after the expedition. Expedition members will carry out technical work in a wild and remote part of the world, similar to what is currently been carried out in Military Survey units and also hopefully explore new technical areas and procedures.

TECHNICAL AIMS AND OBJECTIVES

2. The technical aims and objectives for the expedition are as follows:

a. Produce an interactive image map.

b. Produce a Geographic Information System (GIS) of the area.

c. Promote the technical capabilities of Military Survey.

d. Investigate data collection techniques.

e. Produce scientific paper.

f. Investigate data transfer using satellite communications and the Internet.

g. Investigate Internet mapping.

INTERACTIVE IMAGE MAP

3. The main aim and objective of the expedition is to produce an interactive image map. This image map will be used to both promote the technical capabilities of Military Survey and also to help pave the way for more expeditions to this remote part of the world.

4. The map will be based around satellite imagery and local mapping. It will have vector data, which will be attributed from information collected in the field. This geographic information will be collected and produced by the expedition members who will be required to explore the local region to find and document the data. The map will also contain photos, video clips, sound and text. All this information will also be used to populate a small GIS of the expedition area.

5. This map will then be saved on to CD and used as part of the post expedition report, which will be available to future expeditions as a reference tool. The map will also be on the expedition web-site, which will be accessible to all interested parties.

GIS

6. The GIS will be produced in conjunction with the interactive image map. The GIS will be used to increase the technical skills of the expedition members and to demonstrate the considerable functionality of GIS software.

DATA COLLECTION

7. Geographic data will be collected prior to and during the expedition for both the interactive image map and the GIS. The data will be collected and reported manually. Hopefully digital methods will also be used, such as, using GPS and laptop computers.

SCIENTIFIC PAPER

8. A glacial river study will be carried out during the expedition by a couple of the expedition members. A scientific paper of this study will hopefully be published. A report on the river study can be found at Annex A

DATA TRANSFER

9. It is intended that once information has been collected and collated in the field during the expedition the data is to be sent back to the UK. This information will be sent back to the UK by using a laptop with satellite communications that has been provided by Norsk Data. Test will be carried out to fully evaluate this capability.

INTERNET MAPPING

10. Military Survey units currently use Internet mapping very little. It is however being increasingly utilised very successfully in the commercial world. It is intended that this capability be fully evaluated for its suitability to provide a mapping solution in a military environment.

EXECUTION

11. The technical plan will be split into the following 3 phases:

a. Phase 1 - Pre-expedition.

b. Phase 2 - During the expedition

c. Phase 3 - Post expedition.

PHASE 1 - PRE-EXPEDITION

12. To allow expedition members to fully explore the region during the expedition, prior planning and preparation is required. This pre-planning and preparation will ensure time is not wasted doing things we should have done back in the UK. The following is to be done, prior to departing on the expedition:

a. Identify area of interest.

b. The acquisition of digital imagery.

d. The acquisition of DTED level 1.

e. Produce a technical instruction. (See enclosure 1)

d. Produce initial Image map and fly-thru for display purposes.

e. Produce the following basic vector datasets from imagery and mapping:

(1) Lines of communications.
(2) Vegetation
(3) Hydrology.
(4) Geological features if identifiable.
(5) Spot heights.

f. Generate a collection plan, (See enclosure 2) to include:

(1) Highlight Areas of Interest for data collection.
(2) For the following geographic features, a full description, including text, photographs, access table, vector layer, reporting sheets and maps are required:

(a) Geomorphology.
(b) Flora/fauna.
(c) Climbing features.
(d) Human Geography.
(e) Physical Geography.

g. Prepare the interactive map.

h. Acquire and test technical equipment.

i. Set up web site, including Arc IMS.

PHASE 2 - DURING THE EXPEDITION

13. All the planning and preparation will be done before departure. An on site evaluation will be carried out to confirm and possibly slightly amend procedures if required. The following activities will then take place during the expedition:

a. Collecting data. To include photography, video and sketches.

b. Collation of data collected.

c. Sending data back to the UK via satellite/internet.

d. Fixing a control point and control network.

e. Glacial river study.

f. Update web site.

PHASE 3 - POST EXPEDITION

14. The following post expedition activities will take place:

a. Collate all the data.

b. Complete the interactive image map and write to CD. The map is to include extracts from written texts, such as the expedition diary.

c. Produce the final hardcopy image map.

d. Produce the final fly-thru's and presentations.

e. Produce technical report.

f. Produce Scientific paper.

g. Update web site.

EQUIPMENT

15. The following is a list of technical equipment that is required:

a. 1 x laptop & satellite comms from Norsk Data.

b. 1 x laptop from ULTRA. Will include the following software:

(1) MS Office.
(2) ArcView & extensions.
(3) GPS Software.

c. 3 x Handheld GPS

d. 2 x Digital cameras / video from ND.

e. 2 x handheld distance measuring kit from TERA Tp, 13 Topo Sqn.

f. Handheld radios. Requirement not confirmed.

16. Software. The geographic software that will be used throughout the expedition will be ArcView. ArcView was chosen because of its simplicity of use, its considerable functionality and its portability. ESRI UK has provided ArcView and the following extensions:

a. Spatial Analyst.

b. 3D Analyst.

c. Image Analyst.

d. Arc Explorer.

e. Arc Internet Mapping Server (IMS).

SUMMARY

17. Even though the technical aims and objectives have been split, the technical plan is one whole project. Together these aims and objectives will help to increase the technical capabilities of not only the expedition members but also Military Survey. The successful completion of this technical plan and its aims and objectives will help to promote Military Survey as the best provider of Military Geographic information, support and technical expertise.

A D Gransden
Technical coordinator
Kazak Apogee

KAZAKH APOGEE - COLLECTION PLAN

INTRODUCTION

1. During the expedition to Kazakstan, expedition members will be required to collect data about specified areas/fields. The features and data that are to be collected will be on areas that would be of value and interest to future expeditions and explorers. This data will then be used to populate the expedition GIS database. This database information will then be collated into the Inter-active image map that will be accessible on the expedition web site and be used as the basis for the Post Expedition Report.

AIM

2. The aim of this document is to outline the responsibilities, guidelines, descriptions, reporting and collating methods to enable all the expedition members to collect the required data.

RESPONSIBLITIES

3. **Expedition Technical Coordinator.** **The Expedition Technical Coordinator (ETC) is responsible for all aspect of the collection plan. He is to ensure that all expedition members are fully aware of their responsibilities and is to ensure everybody is briefed daily during the expedition. The ETC is Sgt Gransden.**

4. Expedition Members. All expedition members are to be fully aware of their responsibilities as laid down in this document.

REQUIRED FEATURES/DATA

5. The following features/data are to be collected daily as per the guidelines at the annexes:

   a. Human Geography.

   b. Physical Geography.

   c. Geomorphology.

   d. Climbing/Mountaineering Information.

   e. Weather.

   f. Flora and Forna.

EXECUTION

6. Daily. On a daily basis the following will happen:

   a. ETC will nominate personnel to collect the required data and give the appropriate brief.

   b. Nominated personnel will collect the required information as the per guidelines.

   c. If possible, expedition personnel will be rotated daily to ensure they do not collect the same data twice in a row and also to ensure that personnel get days off (from collecting data).

   d. The expedition member nominated to stay at base camp each day will be automatically responsible for collecting the weather data.

   e. Climbing/mountaineering leaders will be automatically responsible for collecting the Climbing/Mountaineering information.

   f. Expedition members will hand in the reporting sheets daily to the ETC.

g. The ETC will collate the reporting sheets.

7. Two/Three Days. Every two to three days the following will happen:

a. The ETC will collate all the collected information.

b. A nominated expedition member will update the database files on the laptop.

c. The ETC/nominated expedition member will send the updated files via e-mail to the UK.

SUMMARY

8. To enable the Technical objectives to be successful, it is essential that each expedition member is fully aware of what is to be achieved during the expedition.

A D Gransden
Expedition Technical Coordinator
For Expedition Leader

Annex G To
Kaz PXR 42/780/3
10 Oct 00

KAZAKHSTAN - A BRIEF HISTORICAL AND CULTURAL TOUR

INTRODUCTION

While the aim of the expedition may have been to explore and climb in the Dzhungarian Alatau, no trip of this type is complete unless you experience something of the country itself. Four weeks is a short time to gain any great insight into Kazakhstan or it's people but it is certainly enough to gain some lasting impressions of the country and the challenges it faces in the future. As always, the key to understanding the present-day lies in the past and any visitor to Kazakhstan should avail himself of the basics of Kazakh history. There are many excellent sources of information on the subject, many of which are listed in the bibliography of this report. All this report seeks to do is prepare the traveller with the essential basics and hopefully inspire him to learn more.

HISTORY

PRE-MONGOL

Recorded history in the region begins in the 6th Century BC when the Persian Empire held sway in the area. In the late 4th Century BC the Persians were defeated and replaced by the short-lived empire of Alexander the Great. Hellenic influence in the region saw an increase in trade and cultural exchange between Europe and Asia. The south of present-day Kazakhstan became part of the Silk Road and came under the influence of the Chinese, Arabs and Turks amongst others. The majority of the country remained under the sway of various nomadic tribes with the balance of power ever-shifting between them and the settled city building civilisations of the south and east.

THE MONGOLS ARRIVE

Early in the 13th Century AD the Mongols swept through most of Eurasia including Kazakhstan, creating the vast Mongol Empire. The region was devastated and settled civilisation was not to recover for 600 years with the arrival of the Russians. Following the death of Jenghiz Khan the Mongol Empire splintered and Khazakstan became part of the Golden Horde. Eventually this too splintered and disintegrated.

THE KAZAKHS EMERGE

At the end of the 14th Century AD the Kazakhs emerged as a distinct people for the first time; descended from the Mongols, Turks and other steppe peoples. Their empire covered most of present day Kazakhstan and extended even further north and east. At this time the Kazakhs developed into three "hordes"; the Lesser, Middle and Greater Hordes. These divisions permeate Kazakh society to this day and have considerable political significance. Eventually the Kazakhs too fell prey to yet another Mongol horde, the Oyrats, who established the Zhungarian Empire in the 17th Century straddling China and Khazakstan. From 1690 to 1720 the Kazakhs were repeatedly crushed in a period that became known as the Great Disaster. The Kazakh nation never recovered militarily or politically from this era and the country was ripe for Russian expansion in the 19th Century.

RUSSIA ENTERS THE REGION

Kazakhstan was the gateway for Tsarist Russia's expansion into Central Asia in the 19th Century. In the wake of the army and the Cossacks came waves of settlers tempted by the offer of land. Russians, Ukrainians, Germans and many other nationalities from within Russia arrived in Kazakhstan at this time, turning the steppe into farmland.

Numerous uprisings were crushed by the Russians and the forts they established curbed the nomadic lifestyle of the Kazakhs. Kazakhstan and the other Central Asian Republics re-established themselves briefly following the October Revolution however the Red Army soon re-conquered the area and Kazakhstan was absorbed into the USSR.

THE SOVIET ERA

Soviet Russia set the boundaries of present day Kazakhstan in the 1920's and as with the other Soviet Republics in the area boundaries were set deliberately to include sizeable pockets of differing nationalities. The country suffered greatly under Soviet rule with possibly 1.5 million dying as a result of the collectivisation of agriculture. As well as the suppression of their culture and the destruction of their nomadic lifestyle the people had to endure their country being used as a test bed for grand Soviet schemes. These included vast irrigation projects and the extensive nuclear testing programme which will have lasting ecological effects on the country. The Soviet Era also saw new influxes of immigrants as Kazakhstan was used as a dumping ground for whole peoples exiled by the regime including Tartars and Koreans. The influx in this period, willing or unwilling, made Kazakhs an ethnic minority in their own country for the first time.

POST SOVIET

On the break-up of the USSR Kazakhstan with the other Central Asian republics was quick to declare it's independence. Since then the country has been feeling it's way towards democracy, embracing a free market economy and deregulation. The migration tide has turned and many non-Kazakhs have left the country in the 1990's, with many Kazakhs returning from self imposed exile abroad. Kazakhstan now faces the challenge of turning it's considerable natural resources into improvements in living standards for it's expectant population

CULTURE

ETHNIC GROUPS

Kazakhstan's history is reflected in it's diverse ethnic make-up. The latest figures available, from 1996, show Kazakhs forming just 46% of the population with Russians 34.7%, Ukrainian 4.9%, German 3.1%, Uzbek 2.3%, Tatar 1.9%, other 7.1%. In reality it is likely now that Kazakhs form the majority of the population as emigration, particularly of Russians, Ukrainians and Germans, continues at a steady rate. While there are some ethnic tensions, especially between Russians and Kazakhs, government policy is to maintain Kazakhstan as a multicultural society and this is reflected in Almaty which is very much a cosmopolitan society.

Culturally, it is the Kazakhs who are once again becoming dominant. The importance of ancestry and clan groupings has never disappeared, indeed there are those who say that the current President has no right to rule as he cannot claim descent from Chengiz Khan! Since independence however there has been a renaissance in Kazakh culture and a renewal of interest in Kazakh history. This is best evidenced in the wholesale renaming of streets from Soviet and Russian heroes to Kazakh historical and cultural figures.

LANGUAGE

The official language of the state is once again Kazakh which is spoken by some 40% of the population. Kazakh is a Turkic language which has been written in an adapted version of the Cyrillic alphabet since the Russians took power in the country. Officially, the Latin alphabet has now been adopted. In reality, street signs etc. are found in a mixture of Cyrillic and Latin with most streets also having two names; Soviet and post-Soviet! Russia remains the language of everyday business and inter-ethnic communication and is spoken by the majority of the population.

RELIGION

Nominally, all ethnic Kazakhs are Sunni Muslims. In reality, only some 5% are practising Muslims with little, if any, fundamental tendencies. Kazakh women are among Central Asia's least restricted and even in pre-Soviet times did not wear the veil. The other major religion in Kazakhstan is the Russian Orthodox Church which has revived greatly since the fall of the communist system. Old churches, including the Zenkov Cathedral in Panfilov Park, have been reconsecrated and a sizeable proportion of the ethnic Russian population now consider themselves Orthodox Christians. The wide range of ethnic minorities within Kazakhstan means that a number of other religions are practised including Roman Catholicism, Protestantism and Buddhism.

SUMMARY

Everyone on the expedition found Kazakhstan, and Almaty in particular, to be a fascinating and diverse destination. The people, of all persuasions, were open and friendly and, despite the many problems faced by a country emerging from so many years of Russian domination, there is a definite feeling of optimism for the future. Hopefully they will be successful and realise the President's plan for a modern, multicultural country by 2030.

Finally, included is a guide to the places the expedition members considered the highlights of our time spent in Almaty. Some of these places are practical, many are not! What they will give though is a thorough taste of Almaty and bring you into contact with Kazakhstanis of all backgrounds and levels of society. This guide was compiled by Al Beeton, our roving reporter and social correspondent at large, and he must take full blame for any inconsistencies or inaccuracies!

ALMATY
SOME CULTURAL HIGHLIGHTS

Zenkov Cathedral. In **Panfilov Park**, opposite the Hotel Otrar. One of the few Tsarist Era buildings left in Almaty it is constructed entirely of wood without any nails and survived the earthquake of 1911. Beautifully coloured, good photo opportunity.

Cafe Namaste Indian Restaurant. Located at **55 Abylai Khan Avenue.** Highly recommended place to eat. The food is excellent as is the service from the traditionally dressed waitresses.

Soviet War Memorial. In **Panfilov Park** near the **Zenkov Cathedral**. An eternal flame burns here in memory of Soviet soldiers who died in the two great wars. The memorial is very impressive and the chance to take a look around should not be missed. Again, take a camera.

Tropicana Club. At **99 Shevchenko Street**. Upmarket restaurant/bar that wouldn't be out of place in London's West End. Entertainment all night including Latin dancers, Salsa and Mexican band, top quality. Ideal for a post expedition "knees-up" and a couple of "Del Boy" cocktails. No jeans or trainers.

Mad Murphy's Bar. Located at the corner of **Zenkova Street** and **Tole-Bi Street.** Not a bad effort at an Irish pub but pricey. Managed by a Belgian and frequented by ex-pats, mostly American. Good place to watch sport and they also have an extensive menu. Don't order a large pizza unless you haven't eaten for a fortnight.

Gorky Park Zoo. The zoo is a bit run-down and in need of modernising but still worth a visit. The park also has a funfair which is very cheap.

Military Museum. Located on the edge of **Panfilov Park** across the square from the war memorial. Not well advertised or sign posted. Interesting photographs and displays from Soviet conflicts throughout the last century.

Arasan Baths. Located on **Kunaev Street** opposite **Panfilov Park**. Massive building housing Russian, Turkish and Finnish baths. Very popular with locals and a great place to relax in after time in the mountains. It helps to go with a local as few people here speak English and it is easy to get lost in the huge interior. Definitely part of the Almaty experience.

Armani Nightclub and Cinema. Ultramodern, large discotheque with a Hollywood theme. Again, this club wouldn't look out of place in any major western city. The building also houses a multi-screen cinema. Located on **Dostyk Avenue** near the cable-car station.

Dickens Pub/Restaurant. Located on **Dostyk Avenue** near the **Armani Club**. Reasonably priced fare with the menu in English. Outside terrace is a good spot to stop for a meal and watch Almaty go by.

Main Bazaar. Located off **Zhibek Zholy Street** round the corner from the **Hotel Otrar**. This massive market sells everything from toiletries to turnips. Every nationality in Central Asia can be found here and many from further afield. The indoor meat market is not to be missed!

TV Tower. The TV Tower is situated in the hills to the south of Almaty and is visible throughout the city. Although it is not possible to go up the tower itself there are restaurants and bars on the hilltop and it boasts the best views of the city. Recommended at sunset with a local beer!

Havana Club. Part of the Hyatt Regency complex at **Akademik Satpaev Avenue**. Lively discotheque lying somewhere between a bar and a nightclub. Good atmosphere, pool table and music not too loud. Drinks are expensive but definitely worth a visit.

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Almaty, Kazakhstan

HM Ambassador: Mr Richard Lewington

The Embassy is open from **0900-1730** local time.

Useful address:
The British Council
158-1 Panfilov Street
Almaty, 480091
Kazakhstan
Tel: 7-3272-63 33 39, 63 77 43
Fax: 7-3272-63 34 43
British Council Kazakhstan website

Visa applications are accepted:

- 0900-1100 Mondays, Wednesdays, Fridays, August-May
- 0900-1100 Every working day June, July

Visa application forms and details of required documentation are available from Main Reception during working hours.

UK nationals wishing to travel to Kazakhstan require a visa. Visa applications must be made to:

Kazakhstan Embassy
33 Thurloe Square
London SW7
Tel: 0171 581 4646
Fax: 0171 584 8481

A letter of invitation must be included with all visa applications. Local hotels can provide such letters.

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Kazakhstan

DIRECTORY

Almaty : British Embassy

Website:	
Address:	U1 Furmanova 173 Almaty
Telephone:	(3272) 506191/2 (3272) 506229
Facsimile:	(3272) 506260
Email:	british-embassy@kaznet.kz
Office Hours (GMT):	Winter: 0300-1130 Summer: 0200-1030

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The British Council

Country profile: Kazakhstan; practicalities

This page could be of interest for people planning to visit Kazakhstan. Topics included are:

- Visas
- Flights
- Climate
- Money

Visas
British visitors require an entry visa for Kazakhstan. The Kazakhstan Embassy in London will issue a visa against an invitation from a registered organisation in Kazakhstan who must also arrange visa support with the Ministry of Foreign Affairs in Almaty. It may take two weeks for the visa to be arranged. It is no longer possible to buy your visa at the airport with only a letter of invitation, and several visitors recently have been deported for lack of a visa.

To arrange your letter of invitation and visa support, the inviting organisation needs:

- Your full name
- Your passport number
- Date of birth
- Passport date of issue
- Passport date of expiry

Visitors who stay in Kazakhstan for more than three working days have to register with OVIR.

Visitors from Kazakhstan to Britain require an exit visa (vyezdnaya visa) from OVIR and a British entry visa. The British Embassy in Almaty has a visa section which is open from 0900 to 1100 on Mondays, Wednesdays and Fridays.

Flights
The following airlines currently fly into Almaty:

- Austrian Airlines
- British Airways
- KLM
- Lufthansa
- Transaero (via Moscow)
- Turkish Airlines

Climate
The climate of Kazakhstan is 'extreme continental', very hot in summer and very cold in winter. The temperatures are more extreme in the centre and North of the country; in Almaty, the weather is tempered by the southern latitude and the altitude (around 880 metres) of the city. The coldest months are January and

Annex H To
Kaz PXR 42/780/3
10 Oct 00

Financial Statement
Ex Kazakh Apogee 2000

INCOME	$	£
Adventure Training Funds (12 x 150)		1,800
Personal Contributions (12 x 500)		6,000
Unit Funds 42 Gp PRI		375
14 Sqn PRI		120
3 Div Sig Regt PRI		25
Corps Grant		3,000
Blythe Sappers		600
Joint Services Expedition Trust		2,000
Belin Memorial Trust		1,000
Corporate Sponsors (Norsk Data)		9,000
Army Mountaineering Association		500
CILOR	3873	2,385.30
TOTAL		**26,805.30**

EXPENDITURE		
Airfares (12 x 453.66)		5,444
Insurance (12 x 60 + 40.95)		760.95
Visas (11 x 47 + 94)		611
CILOR (£1,232.87 included in Kan Tengri Fee)		1,152.43
Logistics Agency - Bank Transfer	11,650	7,866.58
- Cash in country	10,000	6,849.32
- Tips to staff	460	315
- Radio Hire	240	164.38
- Sat Phone Licence	30	20.50
Travel Consultant		280
Patrons Function		353.75
Website		225
Computer Extras		105.37
Photography		270
Specialist Stores		83.70
Clothing/Equipment		600
In Country Expenses - Taxis/Tips/Postcards	160	109.58
- Hire of Horses	100	68.49
- Maps	65	44.52
- 12v Battery	45	30.82
Presentation		109.51
Video *		700
Image Map *		600
Miscellaneous		40.41
TOTAL		**26,805.30**

Items marked * are estimates based on previous experience.
Exchange Rate US $/ UK £ = 1.460 from Thomas Cook
Exchange Rate US $/ UK = 1.624 through RAO for CILOR

PHONE NO. : 509323

Attn: To Catherine Moorehead

07.06.00 fax 11.44

07 06.2000

kan Tengri
MOUNTAIN SERVICE

90, ADI SHARIPOV Str
480012 ALMATY
REPUBLIC OF KAZAKHSTAN

INVOICE

Invoice To:

Catherine Moorehead

Kan-Tengri Mountain Service
90, ADI SHARIPOV Str.
480012 ALMATY
REPUBLIC OF KAZAKHSTAN
PHONE: (3272) 677866,677024
FAX: (3272) 509323

Re: Royal Engineer's Expedition Dzhungaria,
12 pax

Subject:
12 pax x $1800 = $21600
Petrol 50 liters = $50

Total : $21600 ($11650 – bank transfer, $10000 – in cash)

Invoice $11650 (eleven thousands six hundreds and fifty)

This offer is valid for 3 days from receipt of this invoice.
Please ensure swift return of remittance
and always enclose the copy of this invoice.

Bank details:

BENEFICIARY: International Mountaineering Camp Kan-Tengri LTD
ACCOUNT N 90407.904\001
BANK OF BENEFICIARY: BANK TURANALEM Opersal № 5
ALMATY, KAZAKSTAN
SWIFT: ABKZKZKX
USD-CORRESPONDENT ACCOUNT N 04-098-797
BANKERS TRUST COMPANY, NEW YORK, USA
SWIFT: BKTR US 33

Signature:

Stamp:

CHARGE
CITIBANK
42 SUY ENERGY
A/c No 1361592

Contract - Voucher № _____ **Контракт - Ваучер №** _____

Contract - Voucher № ____

«07» June 2000

For the present the given Contract concluded between Kan Tengri Mountain Service LTD, Kazakhstan Almaty and Catherine Moorehead

The Subject of Contract

Local ENGINEER'S Expedition Dzhungaria

Details of Contract

The title of the program and list of the group:

12 pax;

04.07. – 03.08.2000

Service:	
1.All transfers	☑
2.Hotel	☑
3.Train and air-tickets	☐
4.Meeting and seeing-off	☑
5.Visa support	☑
6.Attendante	☑
7.Rent of equipment	☑
8.Helicopter	☐
9.Meals	☑
10.Organization expenses	☑
11.Base Camp	☑
12.The rest	☑

The Sum of Contract

$11650 USD

Signature of Customer
Подпись Заказчика

Kan Tengri MountainService LTD

Контракт - Ваучер № ____

«07» Июня 2000

Настоящий Контракт заключен между ТОО МАЛ Хан Тенгри, Казахстан, Алматы и

Катарин Мурхед

Предмет Контракта

Экспедиция на Джунгарию

Детали Контракта

Название программы и состав группы

12 чел;

04.07 – 03.08.2000

Сервис:	
1.Трансферы	☑
2.Отель	☑
3.Ж/д и авиабилеты	☐
4.Встречи – проводы в аэропорту	☑
5.Визовая поддержка	☑
6.Обслуживающий персонал	☑
7.Прокат снаряжения	☑
8.Вертолет	☐
9. Питание	☑
10.Организационные расходы	☑
11.Базовый лагерь	☑
12. Прочее	☑

Сумма Контракта

$11650 долл. США

Stamp
Печать

Stamp
Печать

Lloyds TSB

APPLICATION FOR AN INTERNATIONAL MONEYMOVER PAYMENT

To Lloyds Bank Plc
Please make the following payment (tick the appropriate box)

☑ EXPRESS ☐ STANDARD ☐ ECONOMY Low value and limited countries only. See note † below

Complete by typewriter or in block capitals using a ball point pen.
For guidance to sending money abroad including types of payments please read leaflet PL706
† NOTE for economy payments the application must be completed in accordance with information sheet form 55NI

Date 14/6/00

BRANCH Title	Newbury — Sorting code number 30 95 89
REMITTER NAME	CENTRAL BANK 42 SVY ENG GROUP.
Account to be debited	Sterling account number 1361592 or Currency account number
Address	DENNISON BARRACKS HERMITAGE THATCHAM
Town/City/Post Code	BERKS RG18 9TP.

AMOUNT OF PAYMENT (Please tick the appropriate box. See note 2 overleaf)		Amount	Currency
☑	Remit in foreign currency the sum of	11650	US $
☐	Remit the foreign currency equivalent of sterling	£	
☐	Remit the sterling amount of (not available for Economy International Moneymover)	£	

AMOUNT AND CURRENCY IN WORDS	ELEVEN THOUSAND SIX HUNDRED & FIFTY US $
BENEFICIARY NAME Address (Complete address if payment is not being made to a Bank A/c) Town/City/Country	INTERNATIONAL MOUNTAINEERING CAMP KAN-TENGRI L TD.
BENEFICIARY BANK Address Town/City/Country	BANK TURANALEM OPERSAL NO 5. ALMATY KAZAKSTAN
Account number / Bank Clearing Code	904070904\001 — For Economy International Moneymovers – use numerics only
DETAILS FOR BENEFICIARY (See note 3 overleaf)	ROYAL ENGINEERS EXPEDITION. DZHUNGARIA

CHARGES (Please tick the appropriate box) (See note 5 overleaf)

Usually, Lloyds Bank charges are paid by the Remitter and the foreign bank's charges are paid by the beneficiary ('split charges').

☐ Split charges ☑ All charges to be paid by the remitter ☐ All charges to be paid by the beneficiary

Charges to be debited to (if different from Remitter section). Account number

METHOD OF PAYMENT

Payment will be made direct to Beneficiary/Beneficiary's account unless the box below is ticked.

☐ Pay to Beneficiary on Application and Identification (Not available for Economy International Moneymovers)

FOREIGN EXCHANGE DETAILS (if appropriate)			
	Date Booked/Agreed	Rate	If to be applied against a forward contract also quote:
	Value Date	Corres. Bank	Contract No.
	F.E. Ref.	Position Ref.	Maturity/Option dates

Please check: Has the type of payment box been ticked?
Please advise daytime telephone number, in case of need. 01635 204206.

I/We* confirm the details quoted above and have read and agree to the Conditions of Payment overleaf. Please debit the account quoted above. (*Delete as appropriate)

Customer's Signature(s) [signature] Date 14/6/00.

FOR BANK USE ONLY		
Market segment code	Special instructions CBD*/LBCS*	Hold entries Y*/N*
Bank charges: Ccy & Amount	Cross Rate	F.E. Code B*/F*/X*
Authorised Signatory(ies) confirmed for Lloyds Bank Plc (GRB INL 4.1)		Confirmed with customer (if appropriate)

Input by	Authorised by	Released by	Earmarked	Date	Payment No	Funds Transfer No	Code

RA/2

42 SVY ENGR GP

PAYMENT VOUCHER/CENTRAL BANK

V/No. _____

I authorise the sum of £ 7,866-58 from Fund PRI

To be paid from SIBE

For the following EX KAZAKH APOGEE - INTERNATIONAL MONITORING KAN TENGRI LTD+

Payment is to be made by CASH/CHEQUE/(TRANSFER)* to:

BANK TURANALEM, ALMATY KAZAKHSTAN ACCT NO 9040709041001

Date paid _____ Cheque No _____

Authorised Signature _____

(Must be Fund Manager or SFM)

REGIMENTAL ACCOUNTS USE ONLY

CHARGE	CREDIT
CB	
FUND	

* Delete as appropriate

PAYMENT

Received the sum of _____

From the Regimental Accountant

Date _____

Regimental Accountant

Signature of Recipient

RECEPIT

No: 14/137
Date: 4.07 2000

RECEIVED FROM: Kazakh Apogee Expedition, Stuart Batey

PARTICULARS	$
1. For Dzhungaria Expedition 12 persons	
4.07 – 3.08 2000 г.	
Total:	10 240 $

Paid by [signature]

Received by [signature]

Valiev Damren

Kan Tengri

Альпинистский лагерь «Хан-Тенгри»

Annex I To
Kaz PXR 42/780/3
10 Oct 00

SAFETY AND RESCUE APPRECIATION

1. The extreme remoteness of the Dzhungarian Alatau mountains means that the team will need to be self sufficient to a degree normal for perhaps a much longer expedition. To this end a Regimental Nursing Officer has been included in the team. The Dzhungarian Alatau range of mountains has had only one other Western Expedition before and we will be venturing further East than that expedition and so further from the nearest settlements. We are using a trekking agent contracted in country known as Kan Tengri. This company is the premier mountaineering and travel company in Kazakhstan with extensive experience of leading expeditions to the higher Tien Shan mountains further to the South. The company will be providing a local guide and climber and it is likely that members of the local Army unit may also accompany us, they are based at Pokatilovka, which is the last town of any description we will pass through.

2. Equipment. The team will be equipped with good quality mountaineering clothing and be fully versed in the use of all safety equipment. Specialist training will take place before departure for all, including crevasse rescue. The following additional safety equipment will be taken:

a. GPS hand held navigation receivers.

b. Sabre locating beacons/ Ministrobes

3. Medical. A Regimental Nursing Officer from the QARANC will be the medical officer during the expedition, she will be supported by Cpl Burks who is an RMO3. The nearest hospital is in Almaty and any medical evacuation necessary will be carried out to this location. The medical equipment list is at Annex F.

4. Communications. The team will be using 2 satellite telephones for immediate access to emergency assistance (through Kan Tengri). The phones will allow the team to be in regular contact with the British Embassy and also allow E mail updates back to the UK. It is proposed that 4 Motorola VHF radios are used for communication on the mountain. There is also a telephone in Pokatilovka which has been assessed as being seven hours away from our base camp (for our fittest man).

5. Rescue procedures. The base camp will be supported by Kan Tengri staff at all times and it is likely that if a casualty needs to be evacuated that this will be by Porter/Pony to the roadhead and then by lorry. There is a possibility that a Helicopter will be available from the Military base in Pokatilovka, however this will not be confirmed until we reach the town. Kan Tengri will provide a point of contact in Almaty or requests will be channelled through the British Embassy. Clearly if the Kazakh Military join the expedition then the likelihood of support will increase.

6. Climbing plan. The team of 12 will be split into either three teams of 4 or four teams of 3, with teams either climbing or surveying/exploring or manning base camp. Each team will be self-sufficient and move 'Alpine Style' for a period of days before returning to base. There will always be at least one group manning base camp or surveying close to the base, thus providing the 'foot on the ground'. The mountains are Alpine in style with some glaciated areas and reach about 4,600m in height. It is intended that as many peaks will be climbed as possible within the capabilities of the team, but it is not possible at this stage to specify any particular peaks or routes.

7. Environmental. It is the intention of the whole team to minimise the impact on the environment whilst in the unspoilt Dzhungarian Alatau. To this end, an environmental plan will be implemented which includes leaving no rubbish or other refuse behind in Kazakstan.

8. Conclusion. Self help will always be the first reaction to any incident in this remote area and the team will plan accordingly for most scenarios. The above equipment and safety measures will assist in sustaining the team and employing a speedy response to any unfortunate incident.

Annex J To
Kaz PXR 42/780/3
10 Oct 00

PERSONAL KIT LIST
TRAVEL AND TREKKING

The following list covers the clothing and equipment you will need for the trip to Kazakhstan and the journey to Base Camp. It is by no means exhaustive and should be used as a guide and checklist, however beware of taking much more than is on this list as you will have to carry it!. If you intend to use your own kit in place of issue kit, please ensure that one of the team leaders has checked and approved your kit prior to our departure. It will be too late once we're in Kazakhstan!

Ser	Item	Qty	Source	Remarks
	Trekking Boots	1 pr	P	
	Training shoes/Sandals	1pr	P	
	Woollen Socks	3 pr	P/B	Trekking/Climbing
	Cotton Socks	2 pr	P	Travel
	Goretex Jacket	1	B	
	Fleece Jacket	1	B/P	
	Thermal Vests	2	P	
	Underwear/Thermal Longjohns	1 pr	P	
	Wool/Fleece Shirt	1	P	
	Wool/Fleece Hat	1	?	
	Spare Hat	1	P	
	Sun Hat	1	P	
	Trekking Trousers	2 pr	P	E.g. Rohan's
	Shorts	2 pr	P	
	Glacier Glasses	1 pr	B	
	Expedition Kitbag	1	ND	
	Waterproof Rucksack Liner	1	AI	
	Sleeping Bag	1	B	
	Goretex Bivi Bag	1	AI	
	Karrimat	1	B	
	Shirt/Polo Shirt	2	P	One long sleeved
	T-Shirts	2	P	Tasteful!
	Swimming Costume	1	P	
	Miscellaneous Personal Kit			
	Washing/Shaving Kit	1	P	Forget your 'smellies'
	KFS	1	P	
	Mug	1	P	
	Water Bottle	1	P/AI	
	Flask	1	P/B	Not too big!
	Plate	1	P	
	Personal Medical Kit	1	P	See Annex F & note below
	Suncream/Lipsalve		P	High factor! – In Med Kit
	Towel	1	P	
	Pocket Torch	1	P	Something small.
	Penknife	1	P	E.g. Swiss Army Knife
	Camera	1	P	Recommended
	Notebook	1	P	
	Watch/alarm	1	P	

	Sunglasses	1	P	Glacier glasses will probably double up.
	Glasses/Contact lenses	1	P	Optional
	Wet Ones	1	P	Essential by day 25.
	Towel	1	P	
	Insect Repellant	1	P	
	Lighter/Matches		P	
	Pillow	1	P	Inflatable
	Spare laces/cord		P	
	Sewing Kit	1	P	
	Utility straps/bungees		P	
	Washing detergent	1	P	
	Boot cleaning kit	1	P	Shared
	Spare Batteries		P	Personal
	Candle	1	P	
	Personal Stereo	1	P	Optional
	Padlock/chain	1	P	
	Calculator	1	P	Optional
	Ear plugs	1	P	Optional
	Binoculars	1	P	Optional
	Stuff Sacs	Lots	P/AI	Camp admin
	Ziplock Plastic Bags	Lots	P	Storage/waterproofing

PERSONAL KIT LIST
CLIMBING EQUIPMENT

The following kit will be issued to you for the duration of the exercise. It is your personal climbing kit so look after it. Again, if you wish to use your own kit in place of issue get it checked first. You will be given further items from the team kit list for the flight to Kazakhstan and the trip up-country. Make sure you leave space for them.

Ser	Item	Qty	Source	Remarks
	Plastic Mountaineering Boots	1 pr	B	
	Yeti Gaiters	1 pr	B	
	Step-in Crampons	1 pr	B	
	Goretex Salopettes	1 pr	B	
	Dachstein Mitts	1 pr	B	
	Ski Gloves	1 pr	B	
	Thermal Inner Gloves	2 pr	AI/P	Contact gloves OK.
	Climbing Harness	1	B	
	Ski Goggles	1 pr	B	
	Ice Axe	1	B	
	Karabiners	3	B	
	8' Slings	1	B	
	Prussik Loops	2	B	
	Trekking Poles	1 pr	B	
	Belay Device	1	B	
	Whistle	1	B	
	Pieps Avalanche Receiver	1	B	
	Climbing Helmet	1	B	
	Lightweight Compass	1	B	

	Head Torch C/W Spare Battery & bulb	1	B	
	Expedition Rucksack	1	B	
	Daysack	1	B	

PERSONAL DOCUMENTATION

All expedition personnel are to be in possession of the following documentation.

Ser	Item	Remarks
	Passport (& photocopy) & Visa	Photocopies can be made Sat 1 Jul.
	Vaccination Certificates	
	ID Card	
	Driving Licence	
	Money	US $
	Money Belt/Document Wallet	
	Emergency 'plastic' card	
	Passport photos x2	May be needed for in-country bureaucracy.
	Emergency Contact Card	
	Kit List	
	Maps	Issued 1st July
	Writing Paper/Envelopes	
	Reading Book	
	Notebook/Diary/Pen	
	Group Documentation	
	Nominal Role- Blood groups, NOK list	
	Guide Book/Exped Info	
	Flight Tickets	
	Insurance Information	
	Kit Lists	

PERSONAL MEDICAL KIT

Everyone is to carry a small personal medical kit as you would for any exercise. Annex F gives a list of all medical stores provided. In addition you should have an adequate supply of any prescription medicines you require.

TEAM EQUIPMENT

The following equipment will be required for the expedition. Expect to be lumbered with your share of it!

Ser	Item	Qty	Source	Remarks
	MSR Stoves	4	B	
	MSR Cooksets c/w Heat Exchanger	4	B	
	Fuel Bottles	13	B	
	Tents	6	B	
	Climbing Ropes & Bags	6	B	
	Pitons	Various		
	Nuts	Various		
	Ice Screws	Various		
	Ice Hammers		B/P	

	Altimeters		B	
	Firefly Beacon	2	B	
	Ditress |Signal	2	B	
	Adaptor			
	Pulley			
	Snow Shovels	2	B	
	Ministrobes	2	B	
	Emergency Locating Beacon	2	B	
	Laptop	1		
	Satellite Phone	1		
	Digital Camera	2		
	Video Camera	1		
	Film Camera	1		
	Camera Film			
	Radios, VHF			TBC
	Batteries			
	Small tool kit – Multi tool/tape/Araldite glue etc.			Sgt Beeton to assemble
	Group Medical Kit			Capt Clare

B Bicester
P Personal
AI Army Issue
ND Norsk Data

EQUIPMENT REPORT

INTRODUCTION

1. The majority of the climbing and camping equipment we took with us on the expedition was obtained from the adventure training stores depot at Bicester. In general this kit was of a very good standard and performed well in all conditions.

AIM

2. This report aims to highlight certain items, describe their performance throughout the expedition and identify both their good and bad points.

EQUIPMENT

3. Tentage. We took with us eight *Terra Nova 'Ultra Quasar'* tents, providing us with six tents for the base camp and two spares for pushing up to higher camps. These were very good lightweight tents, roomy in base camp with plenty of space for men and all their kit. They were still suitable for temporary and high camps with three men per tent , although it does start to get a little cramped.

4. A number of the tents received minor damage, especially to the doorways during use. The damage was usually caused when moving kit in and out of the tents and when zipping or unzipping doorways. It is therefore essential to take repair kits with you if you want your kit to stay dry.

5. Sleeping System. The majority of personnel used *North Face* three-season synthetic sleeping bags, although a couple had their own personal down bags. The synthetic bags were warm and comfortable but heavy and bulky in the bergen when trekking.

6. Mats were a mixture of foam *Karrimats* and personal *Thermarests*. The *Thermarests* proved excellent in all conditions and the foam mats performed well too, even though they were a little uncomfortable when sleeping on moraine.

7. Footwear. *Koflak* plastic boots of varying age and use were carried by every team member. Some inner boots not so robust and lace loops were prone to ripping away from the boot itself, probably due to age and extent of use. They were fixed reasonably well with a dab of superglue.

8. Crampons were a mixture of *Crivel 2f* and *Simond,* all performed well.

9. *Berghaus Yeti Gaiters* fitted over the plastic boots were excellent. Crampon novices however had a nasty habit of ripping tears into them while walking or climbing, rendering them not so waterproof.

10. Trekking boots were used for walking between valleys and climbing some of the peaks. A sturdy pair is necessary for some of the terrain, and you don't want them falling apart on you halfway through the expedition. For knocking around the base camp most of the team had a pair of sandals or trainers. Wearing sandals in a wet base camp is not very comfortable, so a pair of waterproof or Gore-Tex socks would be useful.

11. Stoves. We carried with us four *MSR XGK Shakerjet II* stoves and cooksets. These are extremely good lightweight and robust stoves, suitable for cooking for up to three to four persons. They can also use just about any type of fuel. The only problem we encountered was the two heat settings, off or full blast, so you can wave goodbye to simmering your food.

12. We also took with us twelve *MSR* fuel bottles from which we had some problems with fuel loss. On our move to the East Valley we lost 2 litres of fuel due to overtightening of bottle tops rendering the rubber seals

ineffective. On inspection several of the rubber seals were seen to be worn or damaged, a problem which should have been rectified before deployment.

13. Bergens. Most of the team carried *Karrimor 'Endeavour'* 80 litre sacks along with a *Scottish Mountain Gear 'Cuillin 3'* 40 litre day sack. The large bergens weren't particularly suited to an expedition of this length due to the design of the sack not making maximum use of its capacity to load kit.The majority of the team also took the expedition kitbag provided by Norsk Data.

14. Outer Wear. *North Face* salopettes and Gore-Tex jackets were used. Various types of salapettes were provided, some of which were the skiing type with a lining which are unsuitable for mountaineering.

FUEL USAGE

15. East Valley.

Altitude	Personnel	Time in location	Fuel usage
2,400m	12	4 days	6 litres
Comments: Included three man advance party arriving one evening prior to the main group, and a three man rear party stayed on an extra day. 2 extra litres of fuel were lost due to overtightening of fuel bottle caps.			

16. Little Baskan Camp.

Altitude	Personnel	Time in location	Fuel usage
2,500m	12	2 days	
	6	3 days	
	4	3 days	
	12	1 day	9 litres total
Comments: The number of personnel in this camp was constantly changing as teams moved in and out.			

17. Little Baskan Advance Camp.

Altitude	Personnel	Time in location	Fuel usage
3,470m	7	4 days	3 litres
	8	3 days	3 litres

CONCLUSIONS

18. Fuel. We took with us four MSR stoves and used petrol to fuel them. In the thirteen days we spent away from base camp 21 litres of fuel were used by the team. Allowing for a small amount of wastage, around eleven litres of fuel should be sufficient to keep a twelve-man team going for one week.

Total personnel	Total days	Total fuel usage	Average per day
12	13	21 litres	1.6 litres

J Wharry
LCpl

Annex K To
Kaz PXR 42/780/3
10 Oct 00

RGS Application Forms

ROYAL GEOGRAPHICAL SOCIETY
(WITH THE INSTITUTE OF BRITISH GEOGRAPHERS)

Expedition Research Grants: Application Form

*** please ensure that you read the enclosed Guidelines before completing this form**
*** word processed forms are acceptable but must follow this page layout exactly**

1. **Name of expedition** **EXERCISE KAZAK APOGEE**

2. **Affiliation** *(i.e. University / College)* **ROYAL SCHOOL OF MILITARY SURVEY**

3. **Name of leader** **MR STUART BATEY**

4. **Address of leader**

Permanent address
SSGT STUART BATEY
TERA DEPT
RSMS
DENISON BARRACKS
HERMITAGE
THATCHAM
BERKS RG18 9TP

Term-time address (if different)

tel (day) **01635 204351 / 204211**
(eve) **01635 200932**
fax **01635 204263**

email **THROUGH: mick@gjenkins15.freeserve.co.uk**

tel (day)
(eve)
fax
email

5. **Expedition website address (if any): TBC**

6. **Number of UK members 12** **Number of host country members min of 5**

Number of members from other nations NIL **Total number of members TBC**

7. **Location** *(Country, region)* **DZHUNGARIAN ALTAU, KAZAKSTAN**

Latitude (degrees, minutes, N or S) **81/45/05N** *Longitude (°, ', E or W)* **60/80/15E**

8. Attach **an A4 map or sketch map** of the research area.

9. **Dates** *From* **3 JUL 00** *to* **7 AUG 00** *Days in the field* **31**

10. **RGS-IBG Recognition**
This expedition wishes to apply for (please delete as appropriate) : **Approval only**

11. **Budget** *Total* **£ 25,176** *Total team member contributions* **£ 7200**

12. **Aim of expedition**
Please describe the expedition's overall research aim. Use no more than 100 words - full details to be given at question 13.

Exercise KAZAK APOGEE is the Royal Engineers major Millennium mountaineering expedition and is the culmination of a series of expeditions, known as the Apogee expeditions, undertaken by Military Survey personnel around the globe. Lord Jellicoe has kindly agreed to be the Patron. The aims of the expedition are:

To carry out exploratory mid-altitude snow and ice mountaineering in a rarely visited range with defined objectives of making several 'first ascents'.

To introduce a number of novices to the rigours, hardships and challenges of exploratory mountaineering in a remote region.

To carry out a geographic based scientific survey of the mountain range with the intent of producing an image map from data collected.

13. Details of research programme

Please describe the field research work to be done, paying special attention to methodology. This may include a brief description of the research area, showing precisely where you undertake your fieldwork. If there is more than one project being carried out, explain how these relate to one another. Your answer should be concise (750 words max.).

The Dzhungarskiy Altau range is relatively unexplored having witnessed very little activity over the years from either Soviet, Russian or even Western explorers. To our Knowledge, the only expert witness who has documented the range is Professor Cherkasov from the Institute of Geography, National Academy of Sciences in Almaty. He has over 40 years experience of the range where his particular interest has been the study of it's glaciers. Only one previous western expedition has climbed in a small part of the range – to our knowledge. The scope for serious exploratory climbing and geographic discovery is therefore huge.

The aim of the research phase of the expedition (to be conducted in parallel with the mountaineering) is to collect geographic data to populate a GIS. This information will then be used to produce an interactive image map that will be made available to future expeditions through the Web site and on CD-ROM. The expedition will be linked back to the Royal School of Military Survey by Satellite phone (at high speed data of 64 Kb) and through a web site which will give online details of the diary, geographic data collection and moving video pictures. One of the key aims is to prove that data can be collected in the field in a remote region and sent back in near 'real time' to the UK for processing. This will include GPS survey scheme data from differential observations. Once data has been processed in the UK it will be passed back to the field for further development. The expedition main sponsors, Norse Data, will provide the very latest portable satellite phone; this is capable of sending real time video footage.

The data collected will include precise positioning using GPS, spot heights, the extent of glaciation, geological information, hydrology, access routes, climbing routes, and significant features. These will be linked with satellite imagery, draped over Digital Terrain Elevation Data (DTED), to create a 3-D model of the region. The interactive map will also include photographs, video clips, sound and text. The software to be used will be ArcView and Erdas Imagine.

Data collection will be in teams of four operating from a base camp, which will be located next to a lake in the centre of the region to be visited. The expedition will first establish a Survey control point and control network for the area and then each team will spend a number of days collecting data. Positioning will be by differential GPS techniques to increase accuracy. The location of the base camp is shown on the attached map.

The final GIS database will be professionally populated and adapted before distribution to varying institutions who may wish to archive the geographic data for future climbing explorers. This will include the RGS, the Alpine Club of Great Britain, the Explorers Club, the Institute of Geological studies in Almaty and BSES. It is hoped that Professor Cherkasov, a distinguished scientist from the Institute of Geography, will accompany the team to assist in the studies.

14. Bibliography of proposed research

List up to 6 key publications, maps and other materials used to develop the scientific objectives of the expedition.

Maps: 1:250,000 Russian mapping is the best available at present.

Bibliography: Cherkasov PA. Modern Glaciation in the river basin of the Great Baskan on the ridges of Dzhungarski Altau, issue 5, published AN KazSSR.

Numerous articles published by Professor Cherkasov of the Institute of Geography, National Academy of Sciences of Kazakhstan Republic, 480100, Almaty, Pushkin Street, 99.

Post Expedition Report by David MacGregor covering an expedition in 1998 to the area just to the West of that on our expedition.

Lonely Planet's Central Asia guidebook.

Note: Because the Dzhungarskiy range is relatively unexplored, there is very little bibliographical research material available.

15. Advisors

List up to 5 key advisors and their expertise who have helped you develop your research programme.

Brigadier Phil Wildman, Director of Military Survey.
Mr John Knight, Principal Lecturer, Royal School of Military Survey.
Maj John Roberts, Senior Instructor, Terrain Analysis Department, RSMS.
Maj Phil Maye, Senior Instructor, Topographic Surveying Department, RSMS.
Mr David MacGregor, Expedition leader Aldenham School expedition 1998.

16. Association with the host country

Give details of the main Government body with which are you collaborating in the host country and any other key organisations.

The Defence Section of the British Embassy in Moscow have undertaken all liaison with the Government of Kazakstan, in order that the relevant political clearances can be secured.
Links will be made with the Institute of Geography in Almaty.

17. Permissions

Please indicate the steps that have been taken to establish what permissions are required from the host country authorities to undertake this work and what stage you have reached in obtaining such permissions. Please enclose copies of any permits and / or correspondence. Tourist visas are not sufficient.

As this is a Military expedition, the requirements for Political clearance are slightly different. The expedition has been approved by the MOD as well as by the Defence Attaché responsible for Kazakhstan, he in turn has had to seek approval from the Kazakhstan Government. The invitation to visit the country has been provided by the logistics agency responsible for in country movement and support; a company called Kan Tengri based in the capital city of Almaty.

Do you intend to bring any scientific samples back to Britain? ~~Yes /~~ No
If Yes, please state what material you propose to export, and attach letters from the relevant authorities in your host country confirming permission to do this.

Have the following been informed of your plans?:

Foreign and Commonwealth Office (this includes your obtaining the latest relevant FCO travel advice bulletin) Yes ~~/ No~~ (if not, please justify on a separate sheet)

British High Commission / Embassy in the host country Yes ~~/ No~~ (if not, please justify on a separate sheet)

Has the expedition applied for endorsement by a UK university? ~~Yes /~~ No University: _____

Has the expedition been endorsed by a UK university? ~~Yes /~~ No

18. Expedition members

List names, ages, qualifications, nationalities and languages spoken by the leader and expedition members from *both the UK and host country*, and give full details of previous expedition or research experience. University staff members and Research Fellows of the expedition team should be clearly identified as such. University students should give the name of their institution, year of residence and subject being studied.

Ser	Rank	Name	Age	Nationality	Qualification
(a)	(b)	(c)	(d)	(e)	(f)
1.	Capt	Owens	30	British	JSMEL(W) – Joint Services Mountain Expedition Leader (Winter)
2.	WO1	Jenkins	38	British	JSRCL – Joint Services Rock Climbing Leader
3.	SSgt	Batey	37	British	JSMEL(S)
4.	SSgt	McCorriston	36	British	UEL – Unit Expedition Leader – German Speaker.
5.	Sgt	Gransden	31	British	
6.	Sgt	Beeton	28	British	
7.	Cpl	Burks	32	British	JSMEL (W), Medic RMA 3
8.	LCpl	Morrish	24	British	
9.	LCpl	Wharry	22	British	
10.	Spr	Grubb	23	British	
11.	Spr	Wheller	22	British	
12.	Capt	Clare	29	British	Nurse Practitioner

Note:

1. Host country climber is : Stas Petrovich Begman (leading Kazakh climber) – Russian and German speaker. Additional host country members will be a translator, base camp staff and Professor Cherkasov (TBC).

2. The UK team have a mixture of previous expedition experience. 5 of the team are accomplished climbers who have participated in previous 'Apogee' expeditions to the Indian Himalayas, Ecuador, the Atacama desert of Chile and Africa. Each major 'Apogee' expedition has undertaken geodetic GPS surveying as part of the geographic aims and image maps have been produced from India and Chile. All the team are accomplished and highly qualified terrain analysts or topographic surveyors in HM Forces.

19. Risk Assessment

Describe what you perceive to be the main risks associated with your expedition and indicate what measures you are taking to minimise these risks.

The main risks will be during the mountaineering phase, this is one of the reasons why the expedition will split into teams and only one team will be high on the mountain at any one time. The team has a mix of novices as well as very experienced mountaineers and will be subject to a vetting committee before departure. Four of the team have high altitude mountaineering experience and have organised more than 15 major expeditions between them, as well as numerous climbing trips in the UK and Alps.

Other risks that have been identified include the requirement to cross a number of rivers. These are glacial and where possible will be crossed early in the day. It is not clear what the avalanche risk will be and this will be assessed on arrival.

The remoteness of the region is also a key feature and so the team will communicate with base camp by VHF radio and by Satellite phone to Kan Tengri's office in Almaty. They will be able to call on helicopter support from a local garrison (Pokatilovka Garrison) for evacuation should it be required. Helicopters will be able to land close to the base camp, provided that the valley is not obscured by low cloud. The nearest phone is in Amanbhtor, which is approximately seven hours on foot from base camp.

20. **Medical skills**

List the first aid / medical qualifications of your team members.

A Nurse practitioner will support the expedition and one of the team is a Combat and mountain medic. All of the rest have been extensively trained in first aid.

21. **Casualty evacuation**

Outline the plans you have made to ensure the safety of all members of your team (including casualty evacuation).

Casualty evacuation will be by helicopter if required, as described above, or by pony if the casualties condition is not so serious. The nearest main hospital is in Almaty, the town of Sarkand has some medical facilities but it is unlikely that these will be sufficient and thus they will not be relied upon.

22. **Travel and logistics**

Give an outline of your method of travel, route, accommodation and supplies. Please indicate if an agency is helping with logistics
and if so, give details.

Kan Tengri, a local company with experience of organising mountaineering expeditions, is supplying travel, accommodation and food. Travel to the region will be by air to Almaty, road to Sarkand and then by a combination of porters and ponies to the base camp. Accommodation will be in tents, with Kan Tengri supplying a cook and a mess tent. Food will be purchased in Almaty, which is a capital city.

22. **Specialised equipment**

Describe field equipment being used and previous experience of use of any specialised items, e.g. GPS.

Mountaineering equipment.
Laptop computers
2 x Satellite phone
VHF Radios
Trimble GPS receivers
Digital Cameras
Digital Video Cameras
Laser distance measuring device
Plane Tables
Survey markers

All members of the expedition are well versed in the operation of this equipment and further training will be conducted prior to departure.

24. **Breakdown of budget costs**

Pre-expedition / preparation	£ 576
International travel	£ 6120
Subsistence (accommodation and food)	£
Local travel	£
Local counterparts / guides	£17,760 (Fees from Logistics company for accom/food/porters etc)
Field equipment	£
Insurance	£ 720
Medical / health & safety	£
Film / photography	£

Post-expedition	£
Expedition report	£
Other (please itemise)	£
Contingency (usually 10% of sub-total)	£
TOTAL	£ 25,176

25. Contributions by team members

Average per person £ 600 Total team member contributions £ 7200

26. Support from other organisations

State amount of any financial contribution awarded or promised by other organisations. Indicate what other funding applications are pending or are yet to be made.

Military Funds: £8,850
Sponsorship from Norsk Data: £9,000 (provisionally agreed)

27. Expedition report and other output

List the proposed outputs from the expedition (e.g. Expedition report for financial supporters, preliminary report for host country, NGOs, etc), indicating when it is expected that each item will be available and for whose benefit it is being produced.

Post Expedition Report
Web Site (based on a series of expeditions already conducted)
Interactive Image Map
CD-ROM GIS with the PXR, Maps, diaries, photographs etc

Articles for:

Military publications: Royal Engineers Journal, Army Mountaineering Journal etc
High Magazine
Geographical Magazine
GPS Magazine
National and Local Newspapers

The Society requires that expeditions receiving RGS-IBG approval submit a full report with details of the research undertaken to the Society within one year of returning from the field (refer to the *Guide to Writing Expedition Reports* provided to all approved expeditions). Please indicate when the final report will be completed and to which other organisations and authorities you expect the report to be sent.

The report will be published within one month of return, mostly for military distribution, but it will be made available to the RGS and to a wider audience through the Web site.

List those team members producing dissertations or other degree-related project work as a direct result of their participation in this expedition.

N/A, although the younger members will be expected to publish articles on the expedition.

28. Reports from previous expeditions

If team members have participated in other expeditions, give full references to any resulting reports or papers. Please give status of final reports for any previous expeditions approved or supported by the Society in which the current team participated, and expeditions to which the current application is a direct follow-up, even if current expedition members were not involved in the previous project.

Reports have been published for all of the Apogee series of expeditions and copies of these have been passed to the RGS:

Andean Apogee 1993
Indian Apogee 1995
Chile Apogee 1997

29. **Contact address while expedition is in the field**

Contact details of home agent in UK and host country contact while the expedition is in the field.

Home agent: **RSMS**
Name **Sgt John Rigby**

Address **RSMS**
Hermitage
Thatcham
Berks RG18 9SW

tel **01635 204257**
fax **01635 204263**
email

Contact in the field: **TBC**
Name

Address

tel
fax
email

30. **Referee statements**

Two referee statements are required for each application. One of these will normally be from a university academic who can comment on the proposed research and methodology, and the other should be from an appropriate contact in the host country, preferably from a government representative or an academic helping with your research programme. Your referees should not be members of the expedition team, nor be directly involved in the planning of the expedition. Please send each referee one of the attached "Request for a Referee Statement" forms, completing only the top two lines yourself, and ask them to return the forms and their statements directly to the Society (by post, fax or email) by 25 January / 25 August *(delete as appropriate)*.

These are very important: your application is jeopardised if the referee statements do not arrive on time.

Names, and contact details of the referees:

From the UK:
Name **Colonel Chris Dorman**

Address **42 Survey Engineer Group**
Hermitage
Thatcham
Berkshire RG18 9TP

tel **01635 204211**
fax **01635 204263**
email

From your host country:
Name

Address

tel
fax
email

31. **Data Protection Act 1984**

The information you have given on this form will be held on computer and may be released to other expedition planners, potential sponsors and / or the media. Please state if you do not wish to have this information released.

32. **Application submission**

I enclose:

Two copies of this application form and supporting documents ☐

The £10 application fee ☐

I would prefer receipt of this application to be acknowledged by email / I have enclosed a stamped addressed acknowledgement postcard *(delete as appropriate)*.

33. **Declaration**

The information submitted in this application is to the best of my knowledge correct at the time this application was made. Should any significant developments arise after this application is made, such as change of team members or official permits being gained, I will keep the Society informed of such developments. I have informed my two referees that their statements should be returned directly to the Society by 25 January / 25 August *(delete as appropriate)*. Should this expedition be cancelled or postponed subsequent to receiving support from the Society, I will return the grant awarded.

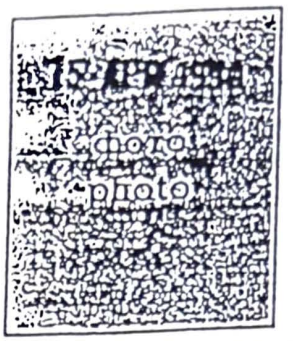
Date _____ *Signature* _____ *(Leader)*

Annex L To
Kaz PXR 42/780/3
10 Oct 00

VISA Application Form.

Invitation from Kan Tengri to visit Kazakhstan.

ҚАЗАҚСТАН РЕСПУБЛИКАСЫ
REPUBLIC OF KAZAKSTAN
ВИЗАЛЫҚ АНКЕТА
VISA APPLICATION FORM



1. SURNAME: .....
   фамилия
2. GIVEN NAMES: .....
   имя, отчество
3. SEX: (M) ☐ (F) ☐
   пол
4. NATIONALITY: .....
   гражданство
5. DATE AND PLACE OF BIRTH: .....
   дата и место рождения
6. PERMANENT RESIDENCE: .....
   постоянное место жительства
   phone/No телефон .....
7. PROFESSION: .....
   профессия
8. OCCUPATION: .....
   место работы
9. TYPE OF PASSPORT: .....
   вид паспорта
10. PASSPORT NUMBER: .....
    номер паспорта
    date of issue: ..... date of expiry: .....
    дата выдачи действителен до
11. TRIP PURPOSE: TOURISM / MOUNTAINEERING
    цель поездки
12. THE INVITING PARTY, IT'S ADDRESS AND PHONE NUMBER
    приглашающая сторона, ее адрес и телефон KAN TENGRI, 48 ABAI AVE, 480072 ALMATY, REPUBLIC OF KAZAKHSTAN тел/phone 3272 677866
13. PLACES TO BE VISITED: ALMATY; DZHUNGARSKIY ALATAU
    пункты посещения
14. THE TERM OF THE REQUESTED VISA
    срок запрашиваемой визы
    from/с ..... to/по.....
15. ENTRIES: ..... ☐-1 (one) ☐-2 (double) ☐-3 (triple) ☐-multiple
    кратность

16. CHILDREN/ДЕТИ

To be filled out only in case the children travelling with you are put in your passport.
Заполняется только в случае, если следующие с Вами дети внесены в Ваш паспорт.

SURNAME фамилия	GIVEN NAMES имя, отчество	DATE OF BIRTH дата рождения	NATIONALITY гражданство

DATE ..... SIGNATURE
дата подпись

ТӨМЕНДЕГІНІ ТОЛТЫРМАҢЫЗ!
НИЖЕ НЕ ЗАПОЛНЯЙТЕ! / DO NOT WRITE BELOW!

ЕСКЕРТУ/ПРИМЕЧАНИЯ: .....
.....
.....

ҚЫЗМЕТТІК БЕЛГІЛЕР СЛУЖЕБНЫЕ ОТМЕТКИ

виза берудің негізі: .....
основание выдачи визы

виза берілген күн: "....."....19....ж. категориясы: .....
дата выдачи визы категория

визаның сериясы мен нөмірі: .....
серия и номер визы

визаның түрі: ..... визаның мәртесі: .....
вид визы кратность визы

мерзімі: с "....."..... бастап по "....."..... дейін
сроки

квитанцияның нөмірі: ..... жинақ сомасы: .....
номер квитанции сумма сбора

Виза берушінің тегі және лауазымы: .....

CONSULAR SECTION OF KAZAKHSTAN EMBASSY

33 Thurloe Square, London, SW7 2SD

Tel: 0171-581-4646 Fax: 0171-584-9905

Open: 9:30 - 12:30 (Monday to Friday, exc. Wednesdays)

Tel. Visa Info: 0891-600207

Back to Home

Attn.

kanTengri
MOUNTAIN SERVICE

90, ADI SHARIPOV Str.
480012 ALMATY
REPUBLIC OF KAZAKHSTAN

To: Catherine Moorehead, UK
From: Kan Tengri Mountain Service, Kazakstan
02/05/2000

INVITATION

We, International Mountaineering Camp «Kan-Tengri», have an honor to invite the following citizens:

Full name		Date of birth	Passport Number	Valid till	Sex
МОРРИШ КАРЛ РИЧАРД	MORRISH CARL RICHARD	13.07.1974	003493142	28,01,2001	M .E
КРАБ ЭНДРЮ ДЕВИД	GRUBB ANDREW DAVID	22.03.1975	029039394	10,10	MALE
НОРТОН ДЖЕЙМЗ ФИЛИП	NORTON JAMES PHILIP	10.02.1975	028276615	04,08,2007	MALE
БАТИ АРТУР СТЮАРТ	BATEY ARTHUR STUART	14.03.1962	037782129	08,02,2010	MALE
КЛЕР КАТЕРИНА ДЖЕЙН	CLARE CATHERIN E JANE	16.02.1967	009091699	25,05,2003	FEMALE
ДЖЕМКИНС МАЙКЛ ГОРОНИ	JENKINS MICHAEL	30.16.1962	005045232	29,01,2002	MALE

to visit us in Kazakstan from 04.07.2000 till 03.08.2000 in order to take part in our tourist programs. The aim of visit is tourism.

The number of your visa support is **05841** (20.04.2000) in Kazakstan Embassy in London.

Director Kazbek Valiev

Kazakhstan
Embassy London
020 75814646

kanTengri
MOUNTAIN SERVICE

90, ADI SHARIPOV Str.
480012 ALMATY
REPUBLIC OF KAZAKHSTAN

To: Catherine Moorehead, UK
From: Kan Tengri Mountain Service, Kazakstan
02/05/2000

INVITATION

We, International Mountaineering Camp «Kan-Tengri», have an honor to invite the following citizens:

Full name		Date of birth	Passport Number	Valid till	Sex
БЕТОН АЛАН ПИТЕР	BEETON ALAN PETER	17.06.1971	871409T	24,08,2001	MALE
МАКОРРИС ТОН ФРАНСИС	MCCORRIS TON FRANCIS	21.07.1963	032511533	28,07,2008	MALE
ГРАНСОЕН АЛЛАН ДЕВИД	GRANSOEN ALLAN DAVID	09.07.1970	025371885	28,01,2007	MALE
ВАРРИ ДЖОН	WHARRY JOHN	11.07.1976	018445221	09,10,2005	MALE
ВЕЛЛЕР ДАРРАН МИХАХ	WELLER DARRAN MICHAH	06.09.1971	004048095	20,11,2001	MALE
БУРКС КАРЛ ЭНДРЮ	BURKS CARL ANDREW	23.01.1966	037805854	16,02,2010	MALE
ОВЕНС ДЖОН ПАТРИК КАМБЕЛЛ	OWENS JOHN PATRICH CAMBELL	10.04.1969	005152166	04,03,2002	MALE

to visit us in Kazakstan from 04.07.2000 till 03.08.2000 in order to take part in our tourist programs. The aim of visit is tourism.
The number of your visa support is **05841** (20.04.2000) in Kazakstan Embassy in London.

Director — Kazbek Valiev

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INTERNATIONAL AWARD TO
TOURIST AND HOTEL INDUSTRY
1999

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Annex M To
Kaz PXR 42/780/3
10 Oct 00

Geology, Geomorphology and Glaciological Report.

By Spr D. Weller BSc (Hons)

For the greater part of the 20th Century the area covered by Russia and the Commonwealth of Independent States (CIS) was essentially closed to western geologists wishing to carry out field-based studies. Except for the Russian literature (some of which was translated at the time), details concerning the stratigraphic and sedimentological evolution of the Kazakhstan palaeocontinent are limited. It is in this light that the following report should be read.

A Brief Geological History of Central Asia

The earliest geological evidence that sheds light on the development of Kazakhstan can be dated as at least 800 Million Years (Ma) old.

During the Late Proterzoic the Asian Super continent experienced a period of severe rifting (Bond *et al*, 1984), forming a number of smaller continents, namely Siberia, Kazakhstan (Kazakhstania), Tuva-Mongolia, Idostan and Yangtze (Ilyin, 1990). Kazakhstania (≈410Ma) itself consisted of a number of micro continents with both active and passive margins, volcanic arcs, trench ophiolite-sutre zones with adjacent oceanic arcs (Avdeyev, 1984; Karyavyev, 1984; Zonenshain *et al*, 1984; Apollonov and Patalaha, 1989; Cook, H.E.) which over the next 400 Ma slowly became welded together.

By the Middle Carboniferous Kazakhstania had collided with the Siberian continental plate. This tectonic movement continued and by the Late Carboniferous – Early Permian it had also collided with the Russian Super continent (Burrett, 1974; Zonenshian & Gorodnitsky, 1977; Karyayev, 1984; Zonenshian et al, 1984; Ilyin, 1990; Scotese & McKerrow, 1990; Ulmishek, 1993). The resulting orogenesis along the collision zones (marked to this day by large thrust zones) (Turner, *et al* 1998) formed the mountain ranges that today incorporate the Tien Shan (the Dzhungarian Alatau being a northern off shoot), Sayan and Altai ranges. It is movement along these thrust faults that is responsible for the tectonic activity recorded in southern Kazakhstan to this day.

The Geology of the Dzhungarian Alatau

Due to the time constraints it was not possible to conduct a full geological survey of the three valleys visited (Base camp, East valley and the Lower Baskin valley).

Two rock types dominated all three valleys, those being igneous and metamorphic in origin:

1) Igneous rock is formed by the solidification of molten material (magma) that is generated deep inside the earth. Within the Dzhungarian Alatau these take the form of course grained, light leucocratic (light coloured) granites.

2) Metamorphic rocks are formed by the partial or complete re-crystalisation of the pre-existing country rocks (in the solid state) due to elevated temperature and/or

pressure, associated with periods of tectonic activity and/or the intrusion of igneous rocks. Within the Dzhungarian Alatua these included slates, schist's and gneisses.

The granites generally formed the ridges and appeared to be post orogenic in nature as they cut the regional metamorphic suites.

Extensive micro faults and folds were clearly visible in many of the exposures, indicating the continued tectonic activity of the region after the periods of metamorphism. Secondary mineralisation was prevalent in the micro faults, with quartz the dominant mineral found. Metallipherous minerals were also present. This would indicate that the secondary minerals were deposited from a hydrothermal regime possibly associated with the granite intrusions.

Fig.G1 Micro faults in a banded gneiss, East Valley.

The following paragraphs were written using information extracted from the papers Cherkesov, 1998.

During the Alpine orogeny (Mid/Late Cretaceous – Late Tertiary) an anticline some 400Km long formed in the area that is now the Dzhungarian Alatua. Continued tectonic activity saw this single large structure break into two large parallel ridges forming the North and South Alatua. The later ridge extends as far south as China, under the name of Borokhoro.

Between these two ridges we find the rivers Koksu, running west and the Borotola running east, along what is now the border with China. Were the ridges bordered the valleys formed by these rivers they slope steeply. On the opposite sides the slope is gentler, cut by a series of horsts and grabens forming a giant natural staircase. Three distinct zones can be observed:

Lower heights – 700-1600m
Middle heights – 1600-3100m
Upper heights – 3100-4266m

Superimposed on this natural topography are features formed by the erosion due to water and the numerous large glaciers that once occupied the area. This combination of factors resulted in the topography that is seen today, that of an intricate series of ridges and valleys that run parallel and perpendicular to the main ridges.

The hydrological regime of the area is entirely dependent on the presence of the glaciers in the upper heights. It is the melting of these glaciers that are the predominant source of freshwater in such an arid area. This is due to their redistribution of precipitation (predominantly in the form of winter snow fall, but supplemented with summer rainfall) over the seasons and years, allowing for maximum flow during the hottest periods. It is for this reason that the study of glacial mass/balance regimes in such areas as the Dzhungarian Alatua is of such importance.

Today glaciers are only found in the upper zone (>3100m) of the Dzhungarian Alatua and can be classified into three broad groups dependent on their location: Valley Glaciers, Mountain Slope Glaciers and those found on denuded surfaces. It is the valley glaciers that form the largest single group of glaciers in the Dzhungarian Alatua, and the largest in size.

Several factors combine to produce this distribution, namely; the altitude of the mountains themselves, the highly variable nature of the relief and the uneven effects of the suns radiation. Field mapping has shown the presence of once glaciated valleys that extend for some 30Km beyond the present day limits of the glaciers.

The physical nature of Base Camp Valley

The valley took the form of a typical glaciated valley ("U" shaped) with an extensive braided river system in its bottom (See Fig.G2 over page). Our base camp was situated just short of the terminal moraine, which rose several hundred metres above the valley floor, and was heavily vegetated. Clast size ranged from pebbles to boulders in excess of 10m wide. Behind this was located the Alatai glacial lake, which at the time of our visited was too high to circumvent safely.

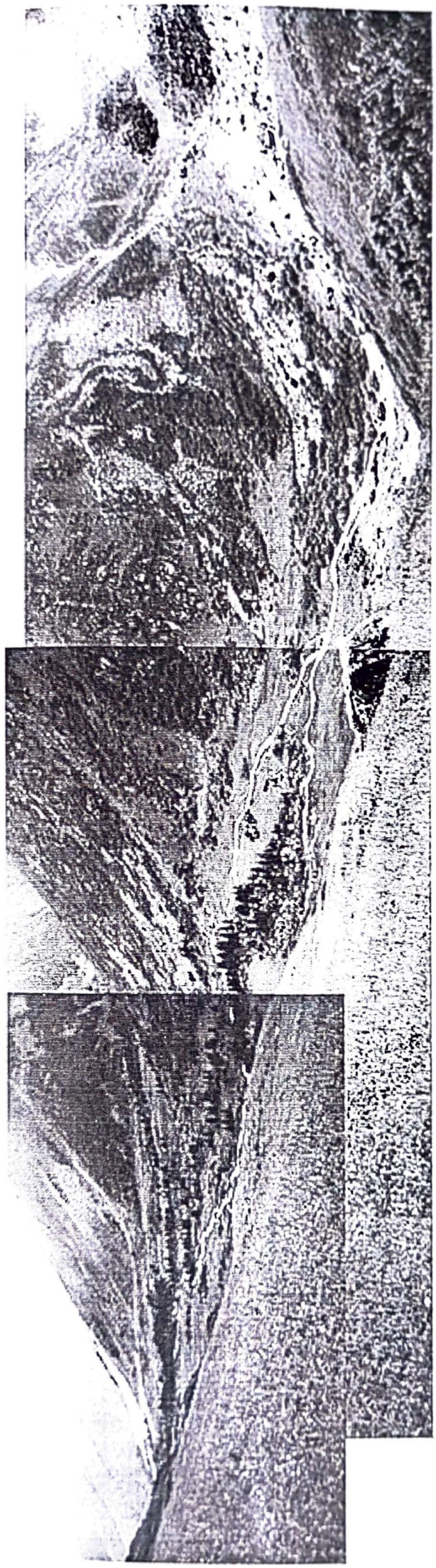


Fig.G2 Base Camp Valley

The valley sides were formed by ridges of light coloured, course grained granite, which was highly jointed and fractured. Extensive scree slopes were present, due to the weathering of the higher slopes. In places well-defined debris flows could also be defined. These could have been formed due to the mass movement of material during a period of heavy melting (spring) or in response to seismic activity. They were generally well vegetated. Several re-entrants emerged into the main valley, some of which also contained what appeared to be moraine (terminal?).

The main valley base contained a well-developed braided stream system, fed the glacial melt water lake further up the valley. The channels present ranged in width from 0.5m - >10m. Larger channels had water velocities in excess of $10mS^{-1}$. The flow rates for all the channels remained steady on a diurnal basis, however over the course of our stay their overall levels did rise due to the heavy daily rainfall experienced. Stream bedload was as expected highly variable ranging from sands and silts up to boulder sized clasts (>3m). In the channels with slower velocities it was possible to see well-defined point bars and sedimentary structures such as ripples (small scale).

With the high water table present, peat development was clearly visible in places. The depth and morphology of these deposits was not fully studied.

The physical nature of the East Valley

Like the Base Camp Valley, the East Valley was a typical glacial valley. At it's entrance was a large, highly vegetated terminal moraine. The lower part of the valley was relatively flat with valley infill in the bottom with a relatively small braided stream system developed.

The valley sides were formed from ridges of light coloured granite (similar to that found in the Base Camp Valley). Here again it was highly jointed and fractured. However the head of the valley was formed from dark, poor quality slates. The eastern wall was covered almost entirely in scree and debris flows. The western side however was well vegetated, also with numerous debris flows. These flows exhibited a high degree of grading along their length. Also visible on the western wall were the remnants of lateral moraine deposits.

The upper half of the valley is occupied by a large glacier (see Fig.G3 over page), formed by three small glaciers that merge into one. Several sets of terminal moraines were clearly identifiable as we moved up the valley, indicating the extent of the glacier during different periods of increased glaciation. On the eastern slope there was present a distinct layer of stagnant scree covered ice, marking the palaeo-ice level. The lateral moraines were also well defined, being over 10m high in places. Both terminal and lateral moraines were poorly consolidated, with a finer sand/silt matrix. Clast size ranged from course gravels – boulders.

Along the western margin the glacier never made contact with the valley sides and so we see well developed Kame terraces, along almost the entire length. The clasts were generally sub-rounded to sub-angular, and polymictic in nature, containing slate, granite banded gneiss and mica (muscovite) schist.

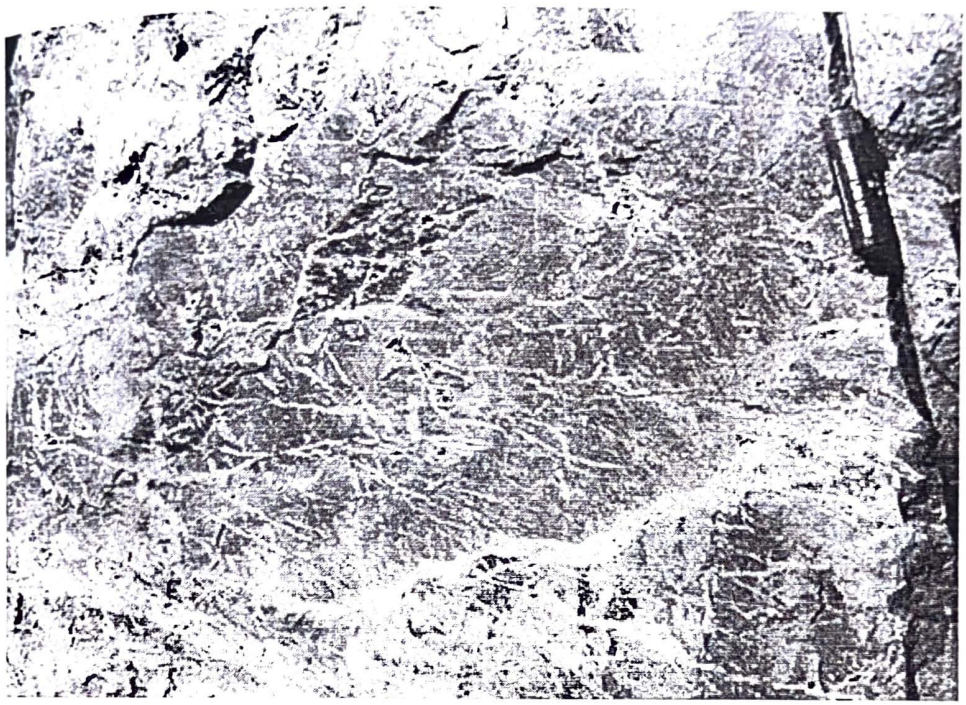
Below the snout of the glacier we found an extensive braided melt water system. Peak discharged occurred in the late afternoon, as would be expected. Between the snout of the glacier and the terminal moraine there was also a temporary lake.

Fig.G3 East Valley

Its was generally very low, but at times of sudden rainfall (as we experienced) this acted to catch this sudden run-off, during which it's size increased dramatically. Similar braided stream systems and temporary lakes (now abandoned) could be seen in relation to most of the terminal moraines present.

The glacier itself was very dirty, but dry, with large amounts of surface debris, ranging in size from sands to boulders. Many of the larger examples showed evidence of debris laden ice movement over their surfaces, in the form of striations.

Fig.G4 Striations on the surface of a glacial boulder, East valley.



The physical nature of the Shumsky Valley

The Shumsky valley was the third of the valleys we visited. It was much smaller than the previous two, but was no less interesting (See Fig.G5 over page).

At the head of the valley was the relatively small Shumsky glacier. As with the East Valley Glacier, it is formed by the merger of two yet smaller glaciers. These are generated in two individual cirques, separated by an arête. This arête produced quite a noticeable medial moraine. The glacier was again dry, with quite a covering of debris.

Bordering the glacier were extensive lateral moraines rising 10's of metres above the present ice surface. The clasts were angular – sub-angular in shape, and consisted of granite, gneiss, schist and slate. As with the East Valley glacier it was possible to clearly identify several sets of terminal moraine, with braided stream development behind them. The modern day glacier discharges its melt water via sub-glacial melt water channels into such as system, exactly like the East Valley. Kame terrace development however was much less well pronounced.

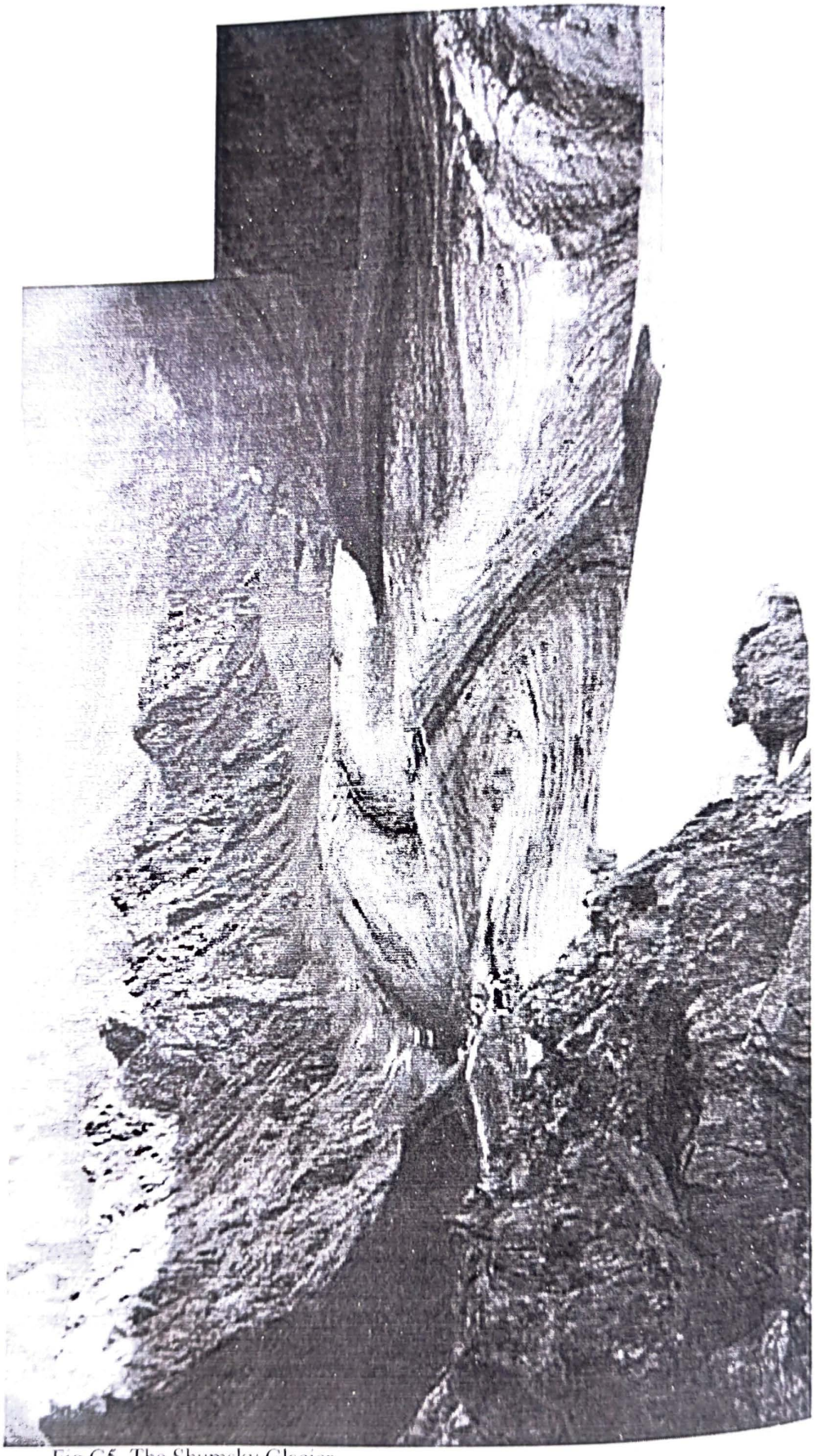
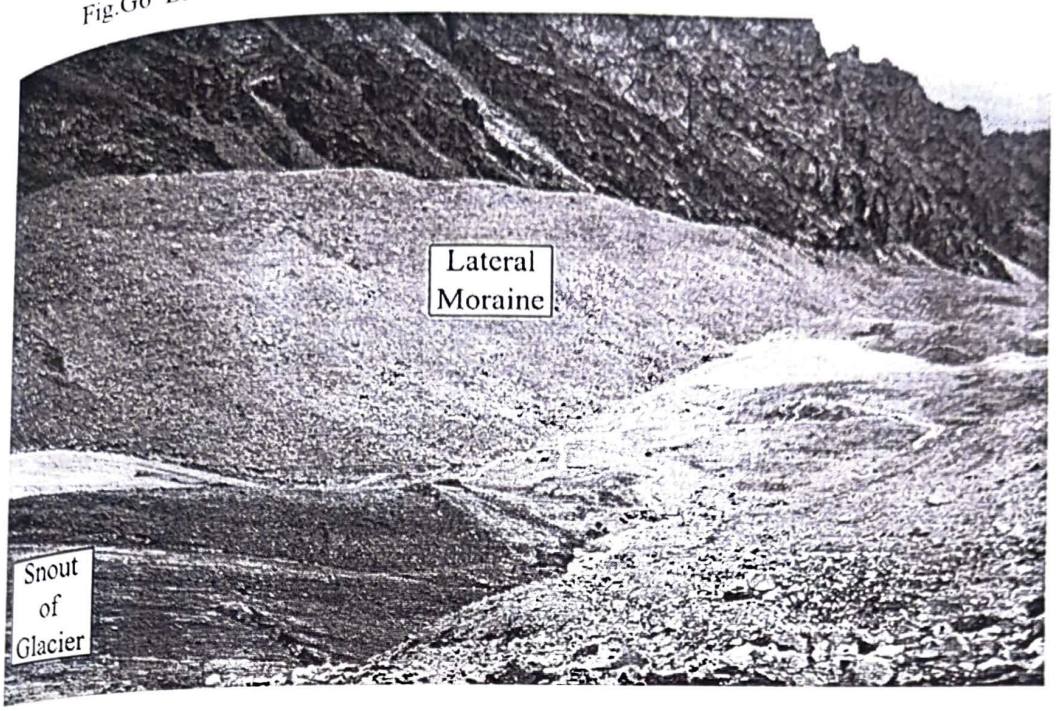


Fig.G5 The Shumsky Glacier

Fig.G6 Braided Stream development in the Shumsky Valley.



The one noticeable difference between the Shumsky valley and the others was the lack of a large terminal moraine at the entrance to the valley. This would indicate that at some time the glacier that once filled the Shumsky valley completed, actually merge with the glacier sited in the Lower Baskin valley, into which the Shumsky valley opens.

This lack of terminal moraine allows the melt water to flow relatively unimpeded. This consequently allowed a much higher diurnal variation in flow rates and much higher suspended sediment loads. Bed load ranged from gravels to cobbles and small boulders. These were generally sub-rounded too rounded in nature and at times of peak flow could be heard to be moving. This gives some idea as to the power of water in relation to sediment erosion and transportation.

Summary

The geological, geomorphological and glacial history of the Dzhungarian Alatua (in fact the whole of Southern Kazakhstan) is immensely complex and is highly inter-dependent. This fact and the others lead to an almost impossible task of summarizing these for you in these few pages. However I do hope that the information included does shed some light on the nature of the locations visited during our expedition.

Included over the next few pages are the references that I used to write this report and others, for those who would like to do more background reading on the areas covered previously.

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Annex N To
Kaz PXR 42/780/3
10 Oct 00

BOTANY REPORT OF FAUNA AND FLORA IDENTIFIED ON EX KAZAKH APOGEE

Introduction

This botany report is based on Exercise Kazakh Apogee – The Royal Engineer Millennium Mountaineering Expedition to the remote Dzhungarian Alatau Mountains of Southern Kazakstan, for the period of 3rd July to 4th August 2000. The botany report covers four of the valleys that were explored during the expedition, these were situated at the following locations and heights:

- Base Camp at 2,300 m
- East Valley Camp at 2,800 m
- Lower Little Baskan Camp at 2,000 m (Temporary Stop)
- Little Baskan Base Camp at 2,500 m

Aim

The aim of this report is to identify what types of fauna and flora flourished in this remote part of Kazakhstan.

Geography

The first days in the mountains saw a daily weather pattern emerge. Each morning normally began dry, then by mid afternoon the weather would close in and often heavy rainfall and high winds would develop. A previous expedition to this area in August also experienced similar weather patterns.

Each of the valleys explored were very similar in their geography and geology. At the base of each valley there was a mixture of alpine meadow and fir/pine forest. A more rugged landscape was experienced with increased altitude, this was characterised by large areas of heath and large boulder fields. Each valley floor was characterised by waterlogged meadows.

Analysis

At an altitude of 1000-1500 m the following fauna and flora was observed:

- Dandelion
- Thistles
- White roses
- Cornflower
- Clover
- Sage
- Achillea
- Pink lavatera
- Nettles
- Delphiniums
- Allium
- Cow parsley
- Gernium
- Mallow
- Wild rhubarb
- daisy

At an altitude of 1500-2000 meters the geography was that of alpine meadow, the fauna and flora was very similar but included the following aswell.

- Delphinium (white)
- Wild strawberries
- Geranium (lilac)
- Eryngium
- Valerian
- Polyganum
- Alchomilla alpina

At an altitude of 2000-2500 m the undergrowth became more dense, interpersed with rocky outcrops. In each valley the fauna and flora was similar but included the following:

- Daisy
- Forget-me-not
- Primula
- Alchomilla alpina

Exploration of the terminal glacial moraine of the East Valley at an altitude in excess of 3000 m evidence of fauna and flora was very scarce. Although the terrain was very inhospitable a few flowers survived there. These include:

- Orange poppy
- Yellow poppy
- Buttercup
- River beauty

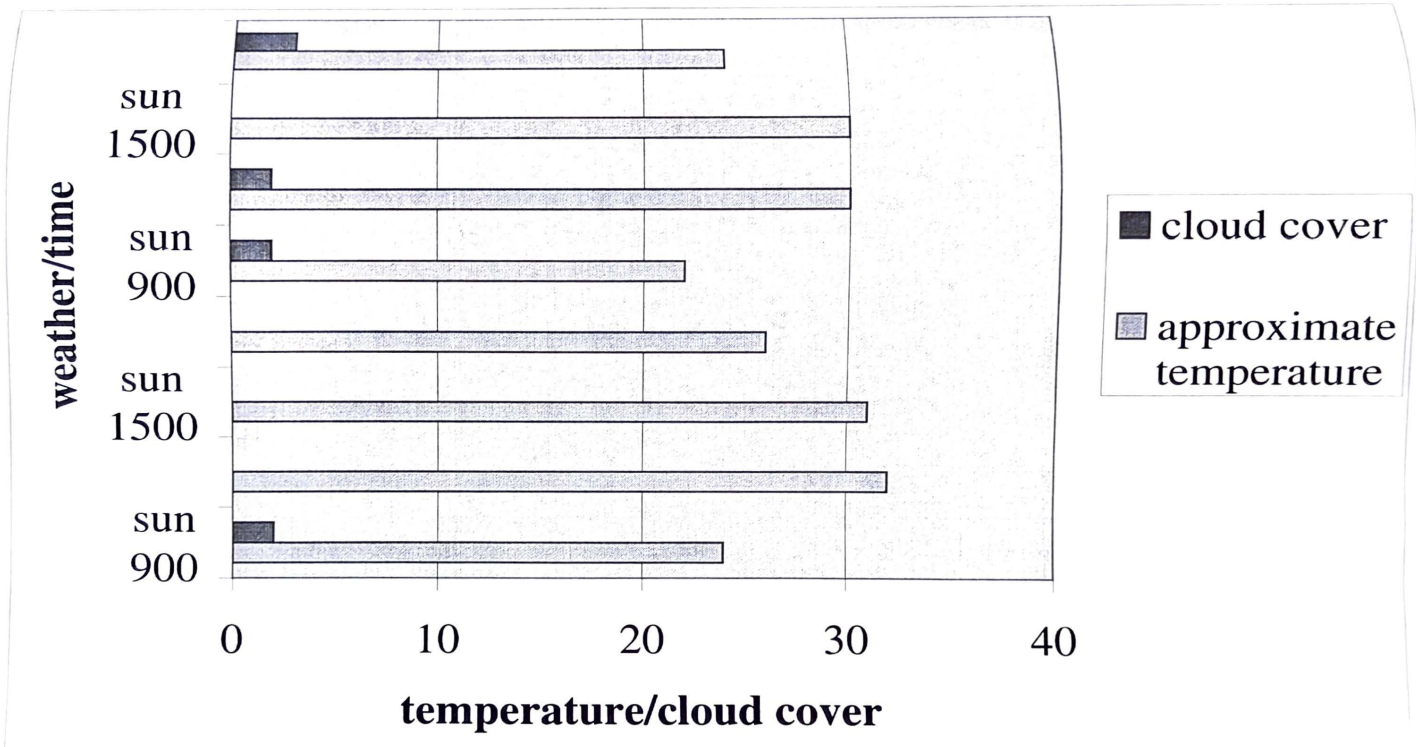
Exploration of the Shumsky valley from the Lower Little Baskan valley showed an abundance of fauna and flora in small high alpine meadows in excess of 3000 m, These included:

- Edelweiss
- Forget-me-not
- Geranium (lilac)
- Primula
- Sorrel
- Aster

Annex O To
Kaz PXR 42/780/3
10 Oct 00

date	location	time(s)	weather	approximate temperature	cloud cover
7th July	border guard post	900	sun	24	2
		1200	sun	32	0
		1500	sun	31	0
		1800	sun	26	0
8th July	border guard post	900	sun	22	2
		1200	sun	30	2
		1500	sun	30	0
		1800	sun	24	3
9th July	Trek up to Base camp	900	sun	26	0
		1200	sun	28	0
		1500	sun	34	0
		1800	sun	30	0
10th July	Trek to east valley camp	900	sun	24	0
		1200	sun	32	0
		1500	sun	34	0
		1800	light rain	16	8
11th July	Recce up East valley	900	overcast	15	8
		1200	drizzle	16	8
		1500	rain	15	8
		1800	rain	15	8
12th July	1st Peak	900	overcast	14	8
		1200	drizzle	15	8
		1500	rain	15	8
		1800	rain	14	8
13th July	failed attempt at peak	900	overcast	15	8
		1200	rain	16	8
		1500	rain	14	8
		1800	hail	8	8
14th July	Peak	900	overcast	10	8
		1200	drizzle	12	8
		1500	rain	14	8
		1800	rain	14	8
15th July	Rocky Peak	900	overcast	11	8
		1200	drizzle	13	8
		1500	rain	14	8
		1800	rain	14	8
16th July	Back to base camp	900	foggy	9	8
		1200	sun	24	2

		1500	sun	28	2
		1800	foggy	14	8
	Base camp	900	foggy	11	8
17th July		1200	foggy	13	8
		1500	foggy	13	8
		1800	rain	9	8
	Base camp	900	rain	12	8
18th July		1200	foggy	13	8
		1500	rain	12	8
		1800	rain	14	8
19th July	Trek to Little Baskin camp	900	cloudy	14	5
		1200	cloudy	16	6
		1500	sun	19	4
		1800	sun	24	2
20th July	Arrive at Abay Glacier camp	900	cloudy	14	6
		1200	cloudy	16	7
		1500	cloudy	16	8
		1800	overcast	13	8
21st July	Trek to Glacier camp	900	cloudy	15	5
		1200	sun	28	1
		1500	sun	31	2
		1800	sun	14	3
22nd July	Dzambulla	900	overcast	8	8
		1200	overcast	12	8
		1500	overcast	13	8
		1800	rain	11	8
23rd July	Tchean Shenski	900	overcast	8	8
		1200	sun	24	2
		1500	hail	12	8
		1800	rain	13	8
24th July	Spudnik	900	overcast	6	8
		1200	snow	-2	8
		1500	snow	0	8
		1800	snow	0	8
25th July	Horse shoe	900	snow	-2	8
		1200	snow	-12	8
		1500	snow	-2	8
		1800	hail	0	8
26th July	peak	900	overcast	12	6
		1200	sun	9	0
		1500	sun	8	0
		1800	overcast	8	4


weather/time
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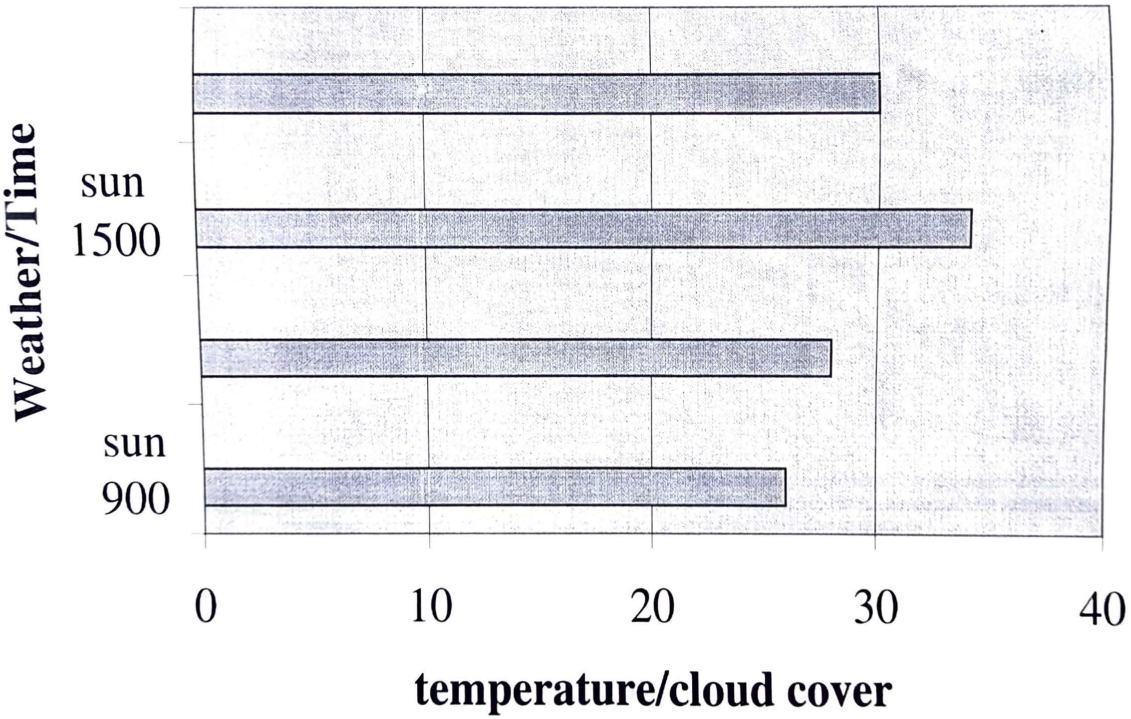
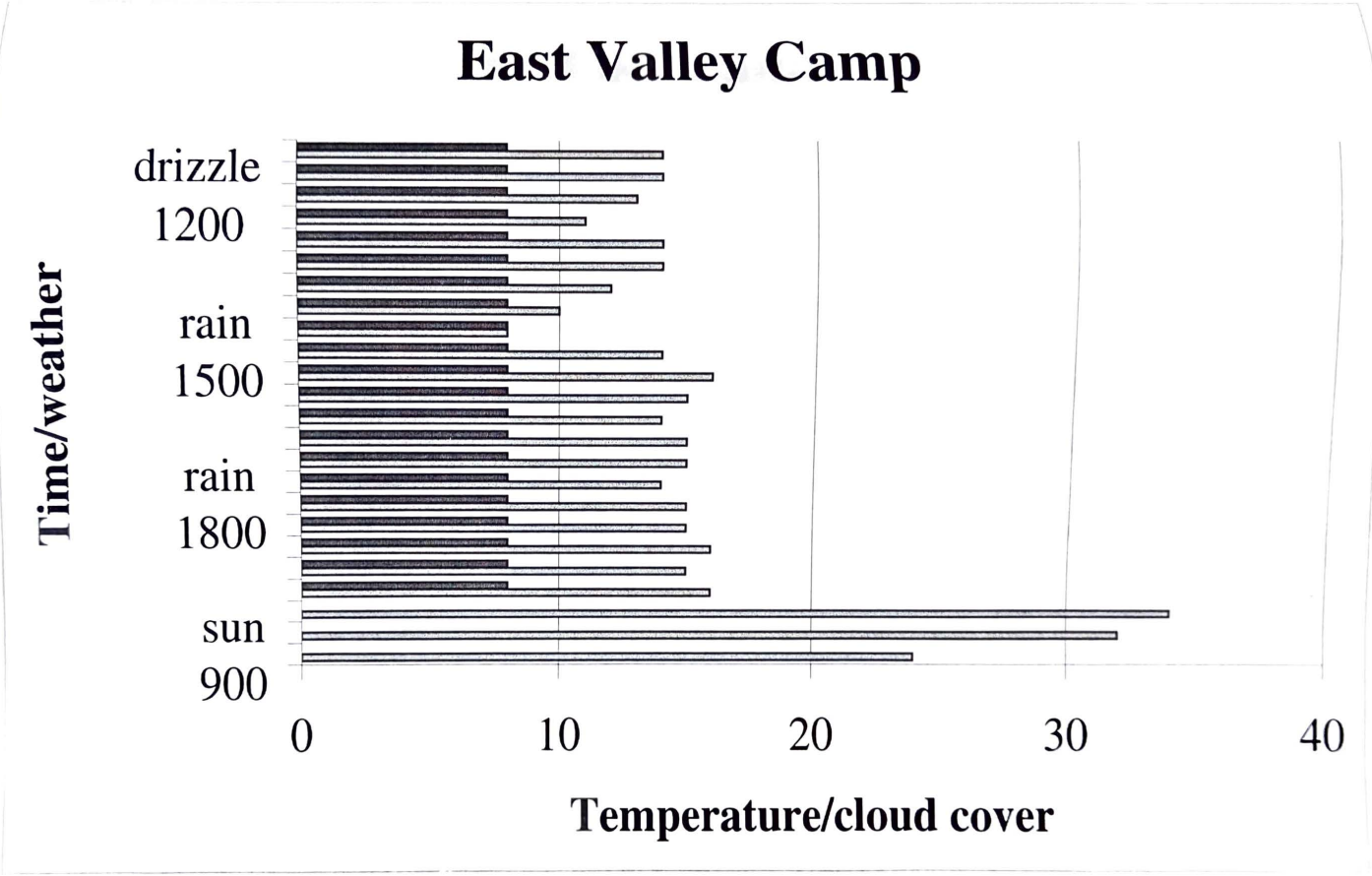
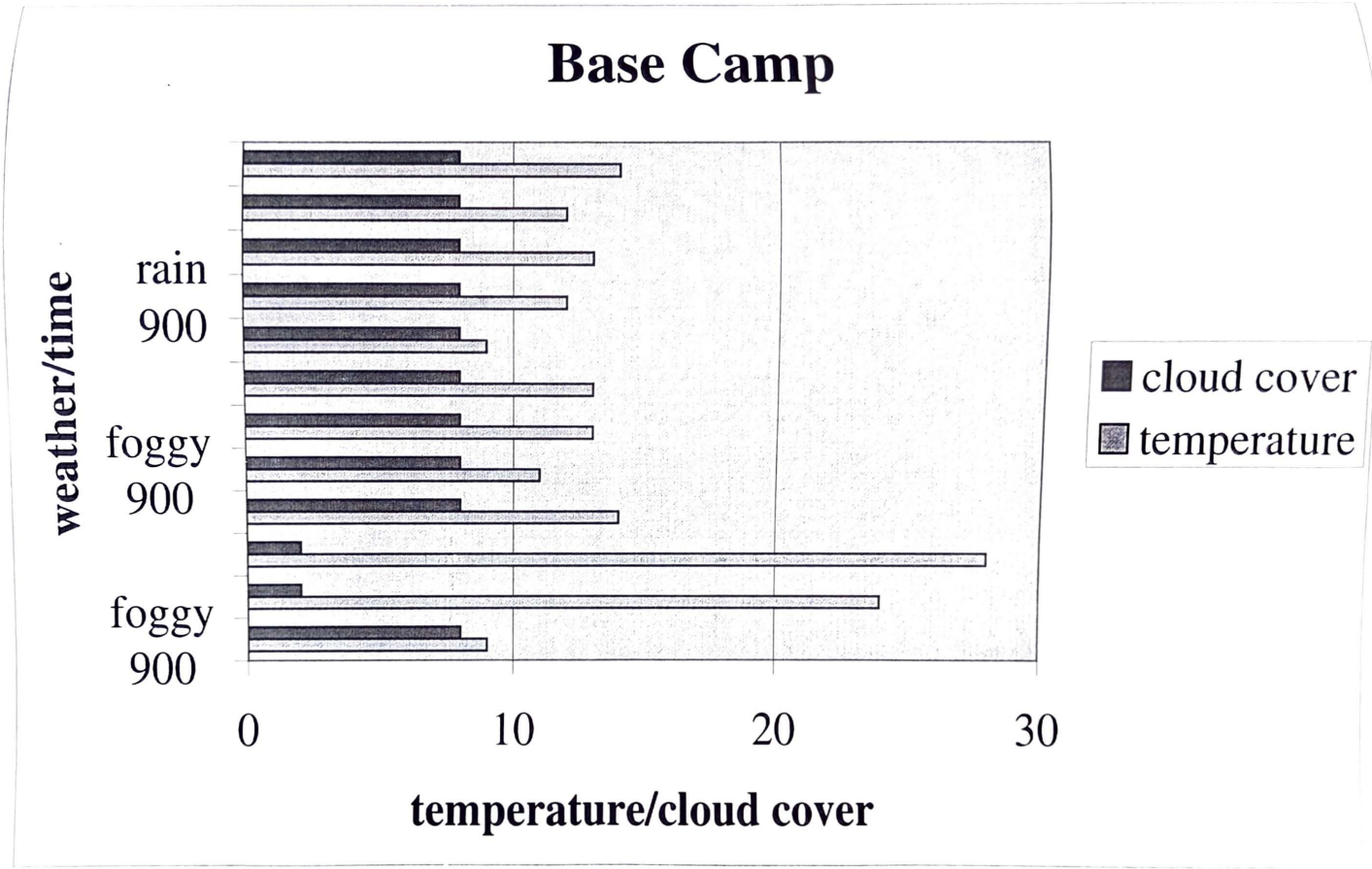
sun 900
sun 1500
sun 900
0
10
20
30
40
temperature/cloud cover
cloud cover
approximate temperature

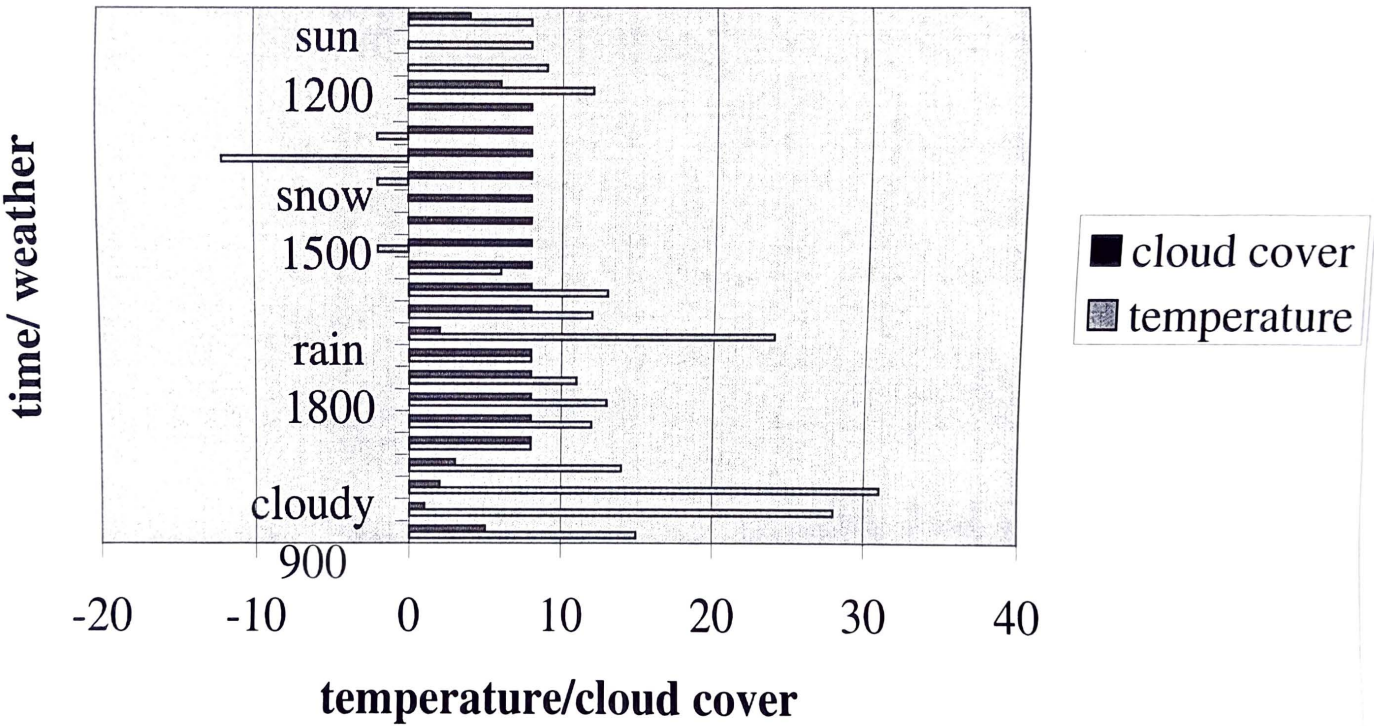
Trek up to Base Camp




East Valley Camp
drizzle
1200
rain
1500
rain
1800
sun
900
Time/weather
0
10
20
30
40
Temperature/cloud cover


Base Camp
weather/time
rain
900
foggy
900
foggy
900
0
10
20
30
temperature/cloud cover
cloud cover
temperature

The Glacier


sun
1200
snow
1500
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1800
cloudy
900
time/ weather
-20
-10
0
10
20
30
40
temperature/cloud cover
cloud cover
temperature

Annex P To
Kaz PXR 42/780/3
10 Oct 00

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Annex Q To
Kaz PXR 42/780/3
10 Oct 00

CILOR AND RATIONS REPORT
EX KAZAKH APOGEE 2000

INTRODUCTION

1. SSgt Frank McCorriston was IC CILOR for the expedition. IC CILOR had the following responsibilities:

   a. Control and accounting of all CILOR money.

   b. Liaison with Kan Tengri and purchase of rations.

   c. Expedition rations.

   d. Completion of CILOR Assessment Form.

CILOR

2. CILOR Money. All CILOR money was held in $US. Although £UK can be changed in Almaty, $US are much more portable throughout the country. Total CILOR money for the exercise was $3837. This was made up as follows.

3. CILOR Expenditure. The largest portion of CILOR was used to pay part of Kan Tengri's fee, covering base camp catering for the mountain phase. Expenditure was as follows:

Item	Amount ($US)
Cash Issue 04-06 Jul 00	360
Cash Issue 30 Jul - 02 Aug 00	480
Kan Tengri Catering	1,800
Food Purchases	1,197
Total	3,837

4. CILOR Rate. The CILOR rate with supplement was found to be satisfactory for the expedition.

KAN TENGRI LIAISON/PURCHASE OF RATIONS

5. Liaison. Previous reports and advice from other parties had led us to doubt the ability of Kan Tengri to provide the quantity and quality of catering normally expected of a base camp operation. Accordingly, we had told Kan Tengri that we wished to be involved in the menu choice and purchase of food for the expedition. Pretty quickly it was realised that that they had come a long way in the last few years and were much more professional in the catering department than we had been led to believe. The Kan Tengri menus were adopted and used as the basis for a two day shopping spree in Almaty which proved very educational as well as a little hectic. Kan Tengri staff proved helpful at all times and did everything in their power to ensure that exped members were well fed and happy!

6. Shopping in Almaty. Some local knowledge proved to be of great benefit when it came to shopping in Almaty! Two team members spent the best part of two days purchasing supplies for the exped. This would have proved extremely difficult, and much more expensive, without the aid of Aivar, the interpreter provided by Kan Tengri. Although many different locations were visited, most purchases were made at the following two locations:

a. RAMSTOR Supermarket. This is a large western-style supermarket, built and run by a Turkish firm. The standards and quality are equivelant to Tesco's in UK. It is located in the north of the city, close to Republic Square at 226 Furmanov Street. The range of products is good and will satisfy nearly all requirements.

b. Main Bazaar. The main food market (bazaar) in Almaty should be visited wether you intend buying food or not as it is quite an experience. Here you will find every nationality in Central Asia and a few from further afield. Tajikis, Kyrghiz, Afghanis, Chechens to name but a few. You will also find an outstanding selection of fresh fruit and vegetables and a wide

range of goods available in quantities ranging from single items to 50 Kg sacks of flour. There is always room to haggle here and an interpreter certainly helped. The main bazaar is located close to the Hotel Otrar on Zhibek Zholy Street.

EXPEDITION RATIONS

7. Base Camp Catering. Proof that Kan Tengri had improved in the catering department was soon provided by the chef Leonid. Arriving at our first camp, late at night after the "bridge incident", his cooking proved to be a great morale booster. This high standard was to continue throughout the exped and he never failed to impress. His flatbreads and doughnuts in particular were a great hit. If this standard is typical of Kan Tengri then they can be recommended wholeheartedly.

8. Mountain Rations. It was never intended that we would be operating at any great distance from the base camp and that the majority of meals would be eaten there. Consequently, only a limited amount of lightweight mountain rations were bought in Almaty. As it turned out, changes in plans meant that all members of the expedition were away from base camp at least half of the expedition, with some of the more active climbers spending less than a week there. This meant that rations for the mountain phases had to be made up from the bulk catering supplies. This was accomplished successfully for the various away trips but it did result in a lot of bulk and an at times monotonous diet of pasta and tinned beef! In hindsight, a lot more dried rations, suitable for small number, camp-stove cooking should have been purchased.

9. Freeze-Dried/Specialist Rations. No source of freeze-dried or other specialist mountain rations was found in Almaty. Given that we had excellent advice and help from Kan Tengri staff in Almaty it is unlikely that there is an in-country source. It may be worth future expeds considering taking a limited supply with them.

CILOR ASSESSMENT FORM

10. The exped was asked to complete an assessment form for CILOR (Cash in Lieu of Rations) for Almaty. The CILOR Assessment Form is attached at Appendix 1 to this annex. The form was completed on 01 Aug 00, during the R and R phase of the exercise. All prices were obtained at RAMSTOR. The following points should be noted:

a. All substitutions for standard items are shown in red.

b. All purchases were made in Kazakhstani Thenge (Th) which were bought in-country using $US. The exchange rate remained fairly stable throughout the exercise, ranging from 143.5 - 144.5 Th/$.

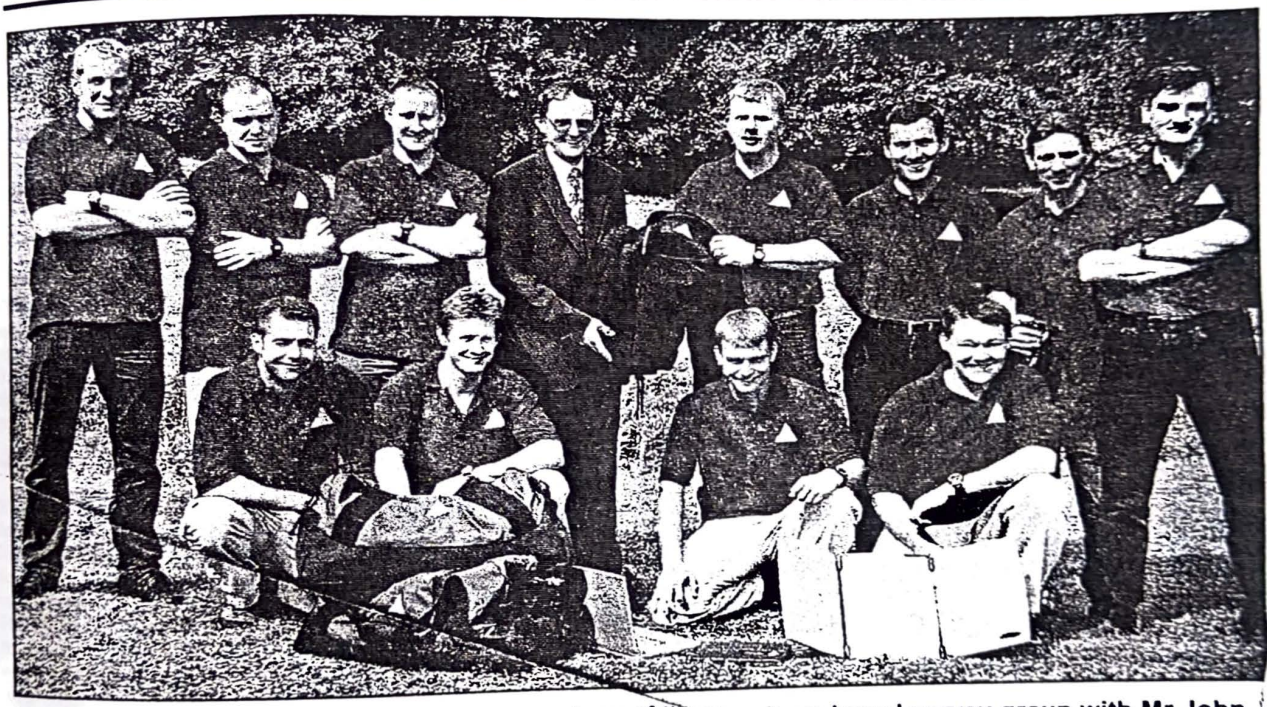
Annex R To
Kaz PXR 42/780/3
10 Oct 00

Publicity Cuttings

Magazine Articles

Keeping track on a mountain adventure

DOMINIC MUSGRAVE plans to keep track on the progress of a team of army mountaineers, who are setting off for an expedition on the border of Kazakhstan and China, through their own website



Ready for action in their smart new kit are members of the Hermitage-based survey group with Mr John Parker of Norsk Data, who donated the clothing for the expedition

INTERNET SURFERS can keep track of a team of army mountaineers from the Hermitage-based School of Military Survey as they post their progress during an expedition to Kazakhstan on the net.

The 11 Royal Engineer soldiers and a Regimental Nursing Officers will be putting information and pictures on the net as they survey the relatively unexplored Dzungarskiy mountain range on the border of Kazakhstan and China.

The area is one of few remaining in the world that can be labelled as being "unexplored" and the huge Alpine-style range is indeed a quiet backwater which has been bypassed over the centuries by the likes of Ghengis Khan and a recent team of Soviet climbers who chose to climb the 'Tien Shan' just to the south and east instead.

Other than one western expedition in 1998 and a rumoured ascent of its highest peak, Tien Shansky (4622m), the Dhungarskiy Alatau has remained unexplored territory with a wealth of peaks to be climbed.

The expedition has three clear aims:

1. To carry out exploratory mid-altitude snow and ice mountaineering with the objective of making 'first ascents'.
2. To introduce 'novice' soldiers to the rigours, hardship and challenge of remote mountaineering to help develop their leadership skills.
3. To experience the balance of people and a fragile environment

The expedition follows previous trips to Ecuador, Chile and India and is led by Class Two Warrant Officer Stuart Batey.

"We are all a little bit apprehensive but we are sure it will all go well. We have a plan but it always goes pear-shaped, this is a proper adventure and part of its purpose is to put people into situations of danger so they can gain something from the trip."

As well as sending back survey data, the climbers will also be putting pictures and a daily diary on the web during the expedition and measuring how high the mountains are is likely to be one of the expedition's hardest tasks.

To follow the trekkers on their trip, go to their website at www.apogee-expeditions.com

on-line

Military team feeling on top of the world

DOMINIC MUSGRAVE keeps in touch with the expedition team from the School of Military Survey during their trip to the mountains of Kazakhstan

YOU MAY remember that, in the July issue of the 'on line' computer page we featured a team of army mountaineers from Hermitage-based School of Military Survey as they explored the relatively unknown Dzungarskiy mountain range on the border of Kazakhstan.

If you have followed their progress on the Internet at www.apogee-expeditions.com you will know that their adventure has been a massive success, but if you haven't or do not have access to the Internet, then just read on.

Day 20 of the trip on July 23, seven members of the expedition made the first western ascent of the range's highest peak, Mount Tien-Shansky (4622m), and were joined by Denis Slimpev who became the first Kazakh

We've done it . . . happy scenes above and at the foot of the page, after the expedition School of Military Survey team made the first western ascent of the highest peak, Mount Tien-Shansky

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Day 20 of the trip on July 23, seven members of the expedition made the first western ascent of the range's highest peak, Mount Tien-Shansky (4622m), and were joined by Denis Slimpev who became the first Kazakh to climb the peak.

Following on from this success, the high team had four other summit successes, the following day they climbed a rather small mountain of 4,080m before bagging three high peaks on successive days of around 4500m, one of which was previously unclimbed.

We've done it . . . happy scenes above and at the foot of the page, after the expedition School of Military Survey team made the first western ascent of the highest peak, Mount Tien-Shansky

Logistic co-ordinator Mick Jenkins said: "This has been an extraordinary effort by the high climbers which has ensured a very high success rate for the expedition overall. The team are obviously very pleased."

Overall, the expedition's accomplishments include the exploration of four major valleys and the ascent of 12 alpine peaks, seven of which were previously unclimbed, and the leaders are now planning on having some fun naming the peaks for the production of the final map.

The team have also rigidly stuck to their geographic collection plan of information that will help future travellers to the range.

Warrant Officer Batey and Deputy leader Frank McCorriston bagged three unclimbed 'tops' which formed a prominent 'pinnacle' ridge on the final day and were christened in true Scottish style with a drop of whisky.

The expedition is now complete and the group are on their way home from their "mountain playground" which has been their home for a month.

The team taking part in the expedition was: expedition leader Stuart Batey; logistic co-ordinator Mick Jenkins; climbing leader Carl Burks; deputy leader Frank McCorriston; scientific co-ordinator Alan Grandsen; team climbing leader John Owen; researcher Alan Beeton; regimental nursing officer Catherine Clare; Carl Morrish; Andrew Grubb; Darren Weller; Denis Alexeevich Alimpev; expedition translator Aivar Muratovich Dusenov; and base camp chef Leonid.

MOUNTAINEERING IN KAZAKHSTAN

IS ALL THIS TECHNOLOGY REALLY NECESSARY?

Article for AMA Journal by WO2 Stuart Batey RE

I have just led an adventure training expedition to explore the Dzhungarian Alatau mountains of Southern Kazakhstan. This is an Alpine like range bordering China which rises out of the Kazakh Steppe up to 4600m high, it is completely uninhabited and largely unexplored. We climbed the highest peak , Semeonov Tien-Shansky 4,622m, the first Westerners and only the second team to do so and explored over 600 Sqr Km of the range which included seven first ascents (3 over 4000m). This was the Royal Engineers Millennium expedition sponsored by Norsk Data and supported by the Corps, the AMA and the Joint Services Expedition Trust.

Exploring and climbing in remote mountain ranges gives us the ideal opportunity to combine both Adventure Training and scientific study. As Military Geographers we carry out terrain analysis and geographic data collection as part of our job and so we feel we have some expertise to offer the geographic community. 42 Survey Engineer Group has a history of exploratory mountaineering known as the 'Apogee' Expeditions; in Ecuador (1993) we carried out Geodetic Surveys of peaks and heighted them to within a few metres, in the Himalayas (1995) we produced a satellite image map of the area visited and in the Atacama Desert of Chile (1997) we produced a network of ground control positions. Our scientific aims for Kazakh Apogee 2000 were to produce a Geographic Information System (GIS) Database and interactive image map on CD and internet website. These aims led us to become the first unit expedition to receive the endorsement of the Royal Geographical Society, Mount Everest Foundation and the British Mountaineering Council.

In Kazakhstan we aimed to collect as much information about this relatively unexplored range as possible, this included climbing routes (proven and suggested), access routes to peaks, goings information on the whole area, geological studies, weather information and details of the local flora and fauna. It is the presentation of this information in a GIS database, linked to a satellite image map which makes the project something more than just another report on an area visited. We used GPS to accurately position all our information as well as digital cameras, video and skilled geographic technicians with a specified collection plan to ensure a thorough and accurate data set. A significant aspect of the expedition which combined the mountaineering and scientific aims was our use of our internet website and Satphone communications technology. This assisted our safety plan and assured the information collected, as well as the daily events, were shared with as many people as possible, as soon as possible.

If the climbing maxim, 'because its there' makes sense to anyone who loves to go into the hills, then they may also understand why we as Military Geographers want to combine our expertise in things geographic with our love of high places, 'because we can'. However, we used a great deal of 'technology' before, during and after our expedition and it has led me to pose two questions:

Communications Technology, a step forward or an intrusion to our mountain experience?

It has become standard safety practice to carry a mobile phone in the hills, the impression is increasingly one of, "should be carried at all times". In Kazakhstan the use of the internet and a Satphone proved to be a huge success, as a safety device and a means of updating families, friends and sponsors on the daily events taking place, as well as the geographic community on the data collected. We were able to upload to the site, digital text (E-mail), images, video film footage and a map annotated with detail of our exploration.

The expedition was linked back to the UK by Satellite Telephone, and using a laptop, through our website (www.apogee-expeditions.com), which gave information about all the previous Apogee expeditions as well as this one. We had a 'link' on the Home page of the Army site which helped to ensure a very high 'hit' rate from it's extensive audience. One of our key aims was to prove that data

can be collected in the field in a remote region and sent back in near 'real time' to the UK for processing. It was also our intention to update the website daily from Kazakhstan.

My personal view of all this technology changed during the trip. One of my reasons for going to a remote unexplored area was to avoid any other visitors, I wanted no repeat of my experience of the Himalayas which seemed to be littered with tourist trekkers, and French ones at that. So, taking along a satphone and e-mail facilities felt like it was contrary to my desires to 'get away from the world'. However, I found I really appreciated the ability to contact my family, reassure them all was well, and conversely my wife was very happy to have enough information to take away any worries she may have had. I found e-mail less intrusive to my 'mountain experience' than say the telephone. Of course there was a price to pay financially as well as the logistics of carrying satphone, laptop and battery power. It was also critical to have a knowledgeable person in the rear party to update the Website. But, I found having control over when I 'logged on' and so initiating any contact, allowed me to fully enjoy my experience without intervention from the rest of the world. The internet is an excellent addition to expedition safety, team moral and technical means of support as well as a PR tool. I believe that the ability to contact those at home was a contributing factor to the success of the expedition.

Does the use of Hi-Tech equipment enhance or diminish the success of an expedition?

In addition to the communications technology, we used a variety of computer hardware and software to manipulate satellite imagery and digital geographic data to provide information about the area we were to visit. The technology we employed allowed us to carry out a 'virtual recconaisance', that is using satellite imagery and elevation data to create 'models' of the ground which we can 'fly through' thus getting a look at the ground without leaving the comforts of home. In this particular case the technology didn't actually help us. We ended up changing our plans significantly on the ground as the valley where we hoped to set up base camp was blocked by a boulder field and lake. If our satellite imagery had been more accurate we may well have concluded this at the planning stage. What's the point of exploratory mountaineering? I hear you cry.

Some argue that the whole essence of exploratory mountaineering is diminished by the use of such technology, but I would disagree. From my perspective (that is as a military geographer and mountaineer) I have the best of both worlds. There are several benefits pre-expedition. The use of the technology enhances the whole experience from a safety perspective, perhaps say, influencing the inclusion of novices or allowing me to venture further from backup. It also gives me some planning tools on where to go considering the limited time I have available. The satellite imagery also allows me to compile an accurate collection plan so as to enhance the scientific aims of the expedition. It is also enjoyable during the expedition to see the limits of the technology bare comparison to the ground truth. Finally, after the expedition the technology (our GIS) is used to ensure accurate and revealing information about the area visited as well as making it accessible and enjoyable to use.

So, I feel technology and the mountains can mix, however, it will not stop me feeling annoyed to hear a mobile phone ringing in the mountains, but the safety benefits probably outweigh the irritation factor and the lift to team moral can be significant. As far as the use of satellite imagery, virtual reconnaissance software, updating internet sites and other hi-tech aspects of our trip, you might think this is taking the whole mountaineering experience to a new dimension entirely, and an unwanted one at that, you may think that carrying out a virtual recce of a beautiful unspoiled area of the world, reduces the experience by removing some of the anticipation and excitement, to me it just increased it. Lastly I feel that posting the GIS map onto our website will provide unprecedented access to information about a previously unexplored range of mountains for all to use and that achieving this was half the fun, as well as the challenge.

S Batey
WO2 FRGS RE
Expedition Leader

EXERCISE KAZAKH APOGEE 00

Article for "Soldier" magazine by Sgt Alan Beeton RE

Exercise Kazakh Apogee picked up the mantle of being the official Millennium Mountaineering Expedition of the Royal Engineers. The exercise has been the latest in a series of expeditions that have been running for the past eight years, previous ones having been to Ecuador '93, Indian Himalayas '95, and Chile '97. The previous three expeditions had been led by the current RSM of 42 Survey Engineer Group, WO1(RSM) Mick Jenkins. This year he handed over the ominous task to WO2 Stuart Batey.

As this was the Millennium Apogee Exped, Stuart and the organising team wanted to visit one of the more remote areas of the world, and attempt some unclimbed, unnamed peaks. Originally the Chersky mountain range of Eastern Siberia had been chosen and extensive planning had been ongoing since early 1998. Unfortunately, these plans had to be scrapped due to clearance for travel not being granted for Russia because of the situation in Chechneya. A plan "B" was already in place, however.

Plan "B" was to travel to Dzhungarian, a mountain range in the far east of Kazakhstan, very close to the Chinese Border. The expedition team would consist of Soldiers from the Military Survey branch of the Royal Engineers, ranging from experienced previous "Apogeeans" to complete novices who had been trained for the expedition in the north-western highlands and the Cairngorms of Scotland.We also had Captain Catherine Clare on board as our medic, representing the QARANC.

Dzungaria was selected as it very remote; like the Chersky range in Siberia, it too has many unexplored areas. Only one previous western expedition had climbed in the area and there are very few recordings of Russian climbs in this range. The terrain was quite Alpine in appearance, lots of very green glacial valleys low down, leading on to massive boulder fields, terminal and lateral moraine, huge glaciers and beautiful snow and ice covered peaks, many of them more than 4000 metres high.

These major expeditions hardly ever go exactly to plan. Sometimes a desired route will have to be reconsidered if it is deemed unsafe by the climbing leaders. Good luck with the weather is always a major factor. As expected, we had to be flexible and change the goal posts slightly in country. The positive aspect of this was that, far from taking anything away from the expedition, we actually achieved more than we had planned. By the end, we had explored five valley systems and climbed eleven mountains, including Mount Tien Shansky, the highest mountain in The Dzhungarian Alatau at 4622 metres. The team also achieved three first ascents, and also named some of the unnamed peaks we had climbed, thus ensuring that there are now mountains in Kazakhstan that have more than a passing connection to Military Survey and The Royal Engineers!

The expedition turned out to be an outstanding success. Being in such a remote area ensured that we were adventure training in the truest sense of the words. There was some hard effort required moving about so much with so much kit. There were some testing moments. We had a couple of the team, SSgt Frank McCorriston and one of our Winter JSMEL's, Cpl Carl Burks, go plummeting into crevasses on different days. This was where the pre-

expedition training was all important to ensure the team carried out the correct drills on these occasions. Fortunately they were not hurt, and both commented on how, once you've disappeared into one and stopped spinning, it is actually quite beautiful in there! Other dramas were encountered, including one of the lads (LCpl Carl Morrish) going down with a touch of altitude sickness high on one of the glaciers, We also nearly lost most of our kit when our bus slid into a river after breaking a log bridge right at the start of the expedition. Miraculously almost all of our gear survived intact and we were able to continue.

Special mention for a couple of the junior members of the team. First, LCpl John Wharry who ascended one of the more difficult summits, peak Matthew. Together with SSgt Frank McCorriston and Major John Owens, our other winter JSMEL, they managed to gain access to, and climb, one of the more inaccessible mountains. The descent from the mountain occurred in atrocious conditions, after the day had started with reasonably good weather. Second, a mention for Spr Andy Grubb who climbed just about everything and showed good mountaineering skills and incredible stamina on his first major expedition.

Finally, congratulations to Stuart for heading a great expedition, and to all sponsors, supporters and team members for making it such a success.

Kazakh Apogee 2000

Article for "Sapper" magazine By Spr AndrewGrubb

14 Indep Topo Sqn RE

As a member of the team who went to the Dzhungarian Alatau in South-Eastern Kazakhstan I can assure you that this adventure training involved plenty of hard work and long hours, but it was also thoroughly enjoyable and definitely an adventure we'll never forget. Our crusade to 'bag' mountain peaks in this rarely visited range started after a 500km journey aboard a dodgy, Russian built off-road bus. All went well, up until the Kazakh Army built log-bridge. Taking the precaution of off loading ourselves and crossing ahead of the bus, we watched the bridge creak as the bus trundled onto the dodgy looking supports. The sound of cracking and splitting wood was only just heard over the clicking of cameras as we saw the bus drop into the river. After roping up to retrieve some kit from the flooded bus and a short trek of 6km we settled down for the night, 2330hrs.

Day one, not in the mountains yet and the smell of danger and excitement was everywhere. The next day was spent sorting out our now retrieved kit and being attacked by horse flies, followed by an international 5-a-side football match. The Kazak border guard against the British Army Royal Engineers. Our scratch team put in a startling performance running away with a storming victory, 3 goals to 2. After the shirt swapping and team photograph session it was into the glacial river for just a few seconds too many to scrub up for scoff. The next day was a trek up to the first base camp. Here it was decided that the conditions, the moraine and glacial features would prevent us from reaching a suitable number of peaks and plan 'B' was called into action.

The next day a group led by Capt John Owens and consisting of: Spr Darren Weller or Red Daz as he became known (due to his hooded eyes and Bolshevik Russian looks) and myself headed up the next valley to recce it's suitability for bagging peaks. From the East Valley base camp it was possible to ascend 2 Peaks. At times we encountered icy crevasses hidden under a thin layer of snow and had to contend with being short of breath due to the thin air experienced at this altitude. After an aborted climb (due to snow conditions) it was decided that another base camp move was required if more peaks were to be conquered. Three of us stayed behind to climb one last peak in this valley. A dislodged rock whacked Sgt Al Beeton on the swede whilst we were climbing a particularly tricky ridge. When we finally reached the peak at 3920m, Carl Burks and I decided to name the ridge Beeton Head Ridge. The next day we trekked back for a re-supply at the original camp and lessons in field stripping an AK47 (given by a Kazak soldier).

A day rest waiting for the horses and it was off down to the next valley. This took 2 days to reach due to the load carrying horses struggling behind the team and at times collapsing through exhaustion. A glacial camp was set up further up from the Little Baskin valley and the peak bagging commenced once again. This camp consisted of three tents, each housing 3 and erected on top of a thin strip of glacial moraine. Many nights it was difficult to sleep because of the howling wind, rain, hail, snow and the thunder of rock fall close by. Numerous peaks were climbed during this intensive six days and their heights, including Semeonov Tien-Shansky at 4622m, Dzhambula 4370m and Sputnik at 4030m.
Back at the camp there was a pathetic amount of rations remaining. Camp fire delights were invented by the hungry mob, which included the RSM Mick Jenkins and Expedition leader Stuart Batey. Paprika and what can only be described as Spam with leprosy was cooked in boiling oil followed by dried apples using this newfound technique. The concoction was named Crunchy Apple or Crapple for short.

The next day was a 20-30km trek back to the Border Guard Post. Everyone heaved their houses onto their backs and set off round the valley and then down hill and across the glacial river. It made a CFT seem very easy. After a day at the Border Guard Post it was time to head back all 500km to Almaty. A converted open sided Russian Army equivalent to a 4 tonner tipped up to take us back to civilization. The long journey back was speeded up by a celebratory meal on the way back. Covered in dust and having not washed properly for 3 weeks we tucked into traditional Kazakh wares. Strangely this included hamburgers and chips, but nobody complained. The vodka toasts were compulsory and insisted on by our Kazakh base camp team . Most of us don't remember getting back on the bus. It was nice to wake up outside our hotel and walk into Breakfast and then the shower. The remaining days in Almaty were spent at the museum, purchasing souvenirs and getting used to eating properly. I have to admit to feeling just a little bit sad leaving such beautiful mountains and scenery behind. The expedition to Kazakhstan is one, which I will always remember. As a team we achieved everything we set out to and more.

MOUNTAINEERING IN KAZAKHSTAN

Article for "Sapper" magazine by WO2 Stuart Batey RE

I have just led an adventure training expedition to explore the Dzhungarian Alatau mountains of Southern Kazakhstan. This is an Alpine like range bordering China which rises out of the Kazakh Steppe up to 4600m high, it is completely uninhabited and largely unexplored. We climbed the highest peak , Semeonov Tien-Shansky 4,622m, the first Westerners and only the second team to do so and explored over 600 Sqr Km of the range which included seven first ascents (3 over 4000m). This was the Royal Engineers Millennium expedition sponsored by Norsk Data and supported by the Corps, the AMA and the Joint Services Expedition Trust.

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The expedition was a great success, we climbed 13 peaks seven of which were first ascents (3 over 4000m) and explored a huge area.

Annex S To
Kaz PXR 42/780/3
10 Oct 00

MEDICAL REPORT
BY
CAPT CJ CLARE QARANC

Introduction.

This medical report is based on Exercise Kazakh Apogee – The Royal Engineer Millennium Mountaineering Expedition to the remote Dzhungarian Alatau Mountains of Southern Kazakstan, for the period of 3rd July to 4th August 2000. The medical report covers a five-week period concerning a military population of twelve. The average age ranged from 24 – 39 years.

Aim

The aim of this report is to identify the health care problems that were encountered by the team members during the expedition.

Preliminary precautions

All team members were advised to undertake precautionary measures to protect themselves against communicable disease. All members were advised to be immunised against tetanus, polio, diphtheria, typhoid and hepatitis A. All personnel were to ensure that they were dentally fit.

The main medical kit, carried by the Regimental Nursing Office,r consisted of a variety of medications and emergency equipment. All members of the team were also issued with a small first aid kit to allow self-medication and treatment if necessary. The full medical list can be seen at Appendix 1.

The Dzhungarian Alatau mountain range was remote enough to provide real problems if anyone became seriously ill or injured. Evacuation would be by pony or helicopter to a major routeway and then onto Almaty to the AEA International Clinic for treatment.

Problems

1. The health of the team overall remained well through out the expedition. The first two weeks of the expedition brought about many minor ailments. Two members of the team suffered with hayfever, especially when walking through the meadows and pine forests, these symptoms were successfully treated with their usual medications.

2. There were four cases of minor degrees of sunburn due to exposure when exploring the mountains. Extra care was taken to avoid unnecessary exposure and the use sun protection products was further encouraged.

3. There were six cases of diarrhoea that responded to extra fluids and Imodium. All team members were advised to treat all their water before consumption.

4. Mosquito bites caused local inflammation and irritation. The use of insect repellent and keeping exposed skin covered, was advised.

5. A few team members experienced blisters from the long periods of walking, and from wearing crampons. Further foot care, protection and regular inspections were encouraged.

6. There were two cases of acute mountain sickness. The first case was at 3,500ft where the climber experienced dizziness, confusion and lack of concentration. He was escorted to a lower altitude to rest and re-

hydrate. A complete recovery was made. The second case occurred at the lower level of 2,900ft. Here the climber became breathless, sweaty and dehydrated, he was again escorted to a lower altitude to rest and re-hydrate. He too made a complete recovery.

7. All these minor ailments were a result of the sustained levels of exposure, exertion and endurance during the expedition; they were all easily treated. A full breakdown of ailments/accidents can be seen below. In the collection of this data I have used the Surveillance System adopted by NATO – Epinato/J95. The J95 is the universal and comprehensive sickness monitoring system used by the British Army. In the use of the Epinato/J95 many ailments will be included as a classified condition, as an example classification 18 (other diseases) includes many ailments e.g. headache and insect bites.

Epinato/J95 showing ailments of the expedition team.
3rd July – 4 August 2000.

	TYPES OF ACCIDENTS	TOTALS
1	Intestinal infectious diseases	0
2	Syphilis & other STD's	0
3	Other infections & parasitic diseases	0
4	Alcohol & drug abuse and dependencies	0
5	Mental disorders	0
6	Stress reactions	0
7	Eye disorders	1
8	Disorders of ear, nose & throat	10
9	Diseases of the lower respiratory tract (including hayfever)	2
10	Disease of the teeth and oral cavity	0
11	Disease of the digestive system (including diarrhoea)	12
12	Gynaecological diseases (including pregnancy)	0
13	Dermatological problems	18
14	Internal derangement of the knee	0
15	Dorsopathies	0
16	Other musculo-skeletal diseases	2
17	Medical complications	0
18	Other diseases (including mosquito bites)	28
19	Injuries when due to road traffic accidents (RTA's)	0
20	Injuries when due to (military) training including AMS	2
21	Injuries when due to sport	0
22	Injuries when due to war or operations	0
23	Other injuries, except when due to RTA, training or sport	0
24	Climatic injuries (heat or cold)	3
25	NBC indicators	0
26	Foot problems	6

Summary

The health of the team members remained well throughout the expedition, the major problems being insect bites, blisters and sun damage. Prevention and prompt treatment for the ailments outlined above limited the extent to which they affected the team. However all team members lost weight to some degree. This was considered normal and was due to the sustained levels of exertion, and not through sustained illness.

ecommendations

Insect Repellent. During the expedition mosquitoes bit all team members despite the frequent application f army issue insect repellent. Extra measures were taken to keep feet, legs and arms covered whilst resting at amps. From this experience it may be recommended that for future expeditions/deployments to similar areas that xpeditions try to obtain other brands of insect/arthropod repellents. A brand used by United States Ranger Regiment, 'Deep Woods off' in the swamps of Georgia and Florida has been recommended to the author as been ighly affective.

The two products issued were: Oil 68 40-99-220-1385
Insect/Arthropod repellent lotion 6840-01-284-3982

2. Medical cover/advice. There were no major medical problems encountered on this expedition, however the remoteness of the area and limited medical knowledge of the team highlighted the need for medically qualified personnel to accompany such expeditions in the future. Despite the importance of limiting the weight carried by the team, it is crucial that a substantial supply of medical supplies is taken

ITEM	NO.
EQUIPMENT	
Note book and pen	1 of each
Scissors	1 of each size
Thermometer/ Tempadot	
Throat Torch	1 + spare batteries
Throat spatulas	10
Rubber gloves	5 pairs
Emergency Dental Kit	1
Space blanket	3
Infusion set	2
IV cannulae (pink)	4
Sterile scalpel/ stitch cutter	2/ 2
Plastic airway (orange/ red)	1/ 1
NP1 pack	3
Sutures (silk 0/2 & 0/3)	4 of each
Savlon sachets	20
Syringes (2/ 10/ 20mls) i/c needles	2 of each
Steristrip dressings	3
Skin glue	1 tube
Elastoplast tape	1
Mepore tape/ roll	1/ 1 box
Zinc tape	2
Gauze dressing	1 pack
Melolin dressing (large & small)	10 of each
Paraffin gauze	4
Plasters (various)	
Iodine wound spray	1 can
Plastic skin	1 can
Crepe bandage (1"/ 2"/ 4")	2 of each
Elastoplast strapping roll	1
Sam splint	1
Tubigrip (upper/ lower limb average size)	3 of each size
Urine stix	1 tube
DRUGS	
Mefenamic acid caps (250mg)	100
Gaviscon tablets	1 tube
Piriton tabs (4mg)	20
Canestan cream (25g)	1 tube
Sudofed tabs	20
Loperamide hydrochloride caps	60
Maxalon tabs (10mg)	20
Buscupan tabs (10mg)	20
Derbac-M (200ml)	1 bottle

ITEM	NO.
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Sudofed tabs	20
Loperamide hydrochloride caps	60
Maxalon tabs (10mg)	20
Buscupan tabs (10mg)	20
Derbac-M (200ml)	1 bottle

moxicillin caps (250mg)	50
rthromycin tabs (250mg)	40
rimethoprin tabs (200mg)	50
iprofloxacin tabs (250mg)	45
Metronidazole tabs (400mg)	40
Nystatin Suspension (100,000iu)	2 bottles
Flucloxacillin caps (250mg)	40
Chloramphenicol Eye Ointment (4g)	5 tubes
Stain eye strips	10
Dioralyte sachets	20
Senna tabs	60
Mouth wash tablets	1 bottle
Difflan mouth spray	1
Zovorax (10g)	2 tubes
Merocets lozenges	1 packet
Hartmans Solution (1 litre)	2 ready packs

Annex T To
Kaz PXR 42/780/3
10 Oct 00

COMMUNICATIONS

INTRODUCTION

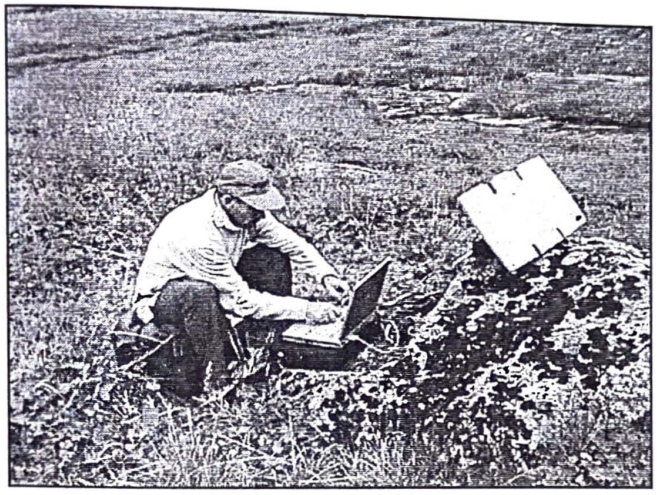
1. The requirement for a detailed, well thought out, communications plan played a large role, from the very early stages in the expedition preparations. The plan was mulled over several times, researched in detail and changed regularly as restrictions developed. Essentially the communications plan was broken down into two main areas:

a. Safety and (potential) Rescue Communications – deemed essential because of the remoteness and need for speedy evacuation to medical support.

Achieved by using satellite phone technology and use of VHF radios.

b. Media and PR Communications – deemed desirable to publicise our exploratory ventures as a high profile Military expedition.

Achieved by use of satellite communication technology and an expedition web site.



Mick Jenkins using the Nera satellite phone at base camp.

EQUIPMENT

2. General. The communication plan was inherently dependent on the availability of the relevant equipment needed, and this would hence affect the aims of the communication plan. Norsk Data were yet again invaluable in their assistance of obtaining the necessary equipment, all of which was the best on the market and new technology. The final inventory of all the equipment is shown below:

a. Nera 'world communicator' satellite phone and ancillaries. This satellite phone was loaned to the expedition by Nera Satellite Services and provided the means of 'delivery' for Telenor ISDN data (and speech) transmission at a max rate of 64 kbps (high speed). The phone utilised the Inmarsat M4 service by transmitting data to the Telenor groundstation for onward transmission to world wide servers. The phone had speech capability at a cost of £1.50 per minute and data capability at £4.50 per min.

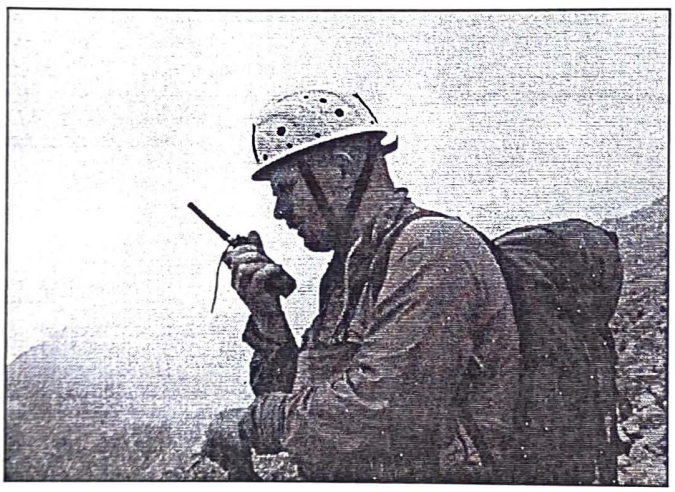
b. Twinhead laptop computer. This equipment was loaned to the expedition by Ultra and gave large capacity RAM for the varied uses the team required whilst in country. The laptop was used to link to the satellite phone for transmission of E mails, digital still pictures and digital video movies. Additionally other forms of GIS (and mapping) data were transmitted from the laptop. All the relevant software was provided by Ultra, Nera, and the Royal School of

Military Survey. Great care was taken to ensure that the delicacy of the laptop was protected at all times during the expedition.

c. Yamotshi VHF Hand Held Radios. The 4 hand held radio sets were provided by Kan Tengri for the duration of the expedition and alleviated the need to import radios and acquire frequencies through the Kazakh authorities. The radios, whilst not state of the art, provided satisfactory communications for the team although (as with all VHF communications) they are restricted to line of sight operation. Line of sight from one summit produced communication to the base camp team over a span of 9 km. The main aim of the VHF sets were for independent teams to maintain communication during either mountain ascents or traversing the range. This afforded an element of safety but communication was limited (or Nil) when the team were frequently set in different locations as small teams.

d. Sony DCR Digital Video Camera. This camera was loaned to the team by Norsk Data, was small and compact, and produced outstanding mini DV digital video and still pictures for use with the web site. The camera was invaluable for the web site communication and final production of the expedition video diary. The camera was used in conjunction with Adobe and video editor software allowing fast downloading of video clips to AVI format. Subsequent movies were reduced in size to MPEG format and transmitted to the webmaster for the expedition site.

3. Equipment Training and Testing. The testing and familiarisation element of training was essential to the success of the web site communication and indeed for communication in need of emergencies. Two team members, Jenkins and Weller, were dedicated to the communications tasking by the expedition leader and received training on all forms of the equipment and software packages. The 42 Gp Field Support Section (in the form of SSgt Bruce Crowe) were crucial to the familiarisation of software manipulation for use with the video camera and satellite phone. Nera provide the basic training on the satellite phone and configured the relevant dial up connections to Telenor with an ISDN PC card. Testing of all the equipment was carried out a week before departure and live video pictures (and stills) transmitted via the Inmarsat



Stuart batey using the VHF radios on a summit attempt

satellite. It would have been useful to have received training on Microsoft Front Page 2000 and FTP transfer, to allow the team to upload (and update) the site themselves from the mountains. This was unfortunately not possible in the end due to a very tight timescale of preparations for the venture, but will be achieved on future expeditions.

POWER

4. The subject of power for all the communication equipment was heavily debated and researched throughout the 2 years of expedition planning. Previous experiences in Chile and India had given the team leaders sound food for thought when it came to facilitating the best means of power, and maintaining contingencies for all eventualities. In the end, the power plan worked extremely well except for the major incident of the 12v car battery 'dieing on us' after a particularly gruelling journey on horseback..! The main sources of power were:

a. Honda 12v Portable Generator AC/DC.

b. 12v Car Battery.

c. 2 x NFP Lithium batteries for video camera.

d. 2 x 'World Communicator' battery packs for satellite phone.

e. 1 x Internal battery pack for the Twinhead computer.

f. Various quantities of 1v and 4v batteries for VHF radios and headtorches.

g. Cigarette lighter adaptors (female and male) and crocodile clips for car battery connection.

5. The main concern for power was contingency plans in the event of one particular means of power failing. This was achieved by a variety of methods and proved fruitful when we were able to revert to speech (and continued use of the sat phone for safety) despite the car battery being 'dead'. Effectively, the team had planned on maintaining a Honda generator at the expedition base camp for the duration of the trip, with a back up of a 12v car battery in the event of the generator failing. Such a plan allowed for battery recharging of the main equipments' to maintain communications. Forced changes in the base camp plan, required that we were away from the generator (at advance and intermediate camps) for much of the time, and consequently the 12v car battery (and internal equipment batteries) became the major (invaluable) source of power.

6. The use of solar panels were considered but decided against on the view that sufficient redundancy was in place with the generator, car battery and internal power sources. This proved to be true as communications never completely ceased, but solar panels would have helped where the generator was unavailable. A vast quantity of 1v batteries were taken for use with the VHF radios and they proved invaluable, alongside extra 4v headtorch batteries, to provide emergency power for data transmission when the car battery failed ! Such improvisation allowed 2 transmissions of 25 minutes at a time which helped to keep the pictures updated on the web site....!

7. The capacity of the internal battery power of the satellite phone (and spare battery) proved to be outstanding and ensured that we would always have important safety (speech) communication to the outside world. The video camera internal battery gave good 4 hour capacity if used carefully and without use in playback mode. An additional (expensive) 9 hour battery ensured we would continually be able to provide video and still documentation for expedition records. The computer battery however, was particularly poor, which is often the case with laptop batteries. A charged battery only allowed for around 1 hour's use and therefore the car battery and generator were crucial to it's power. Recharging equipments from the Honda never proved to be a problem despite incompatible voltage transformers – so long as AC current was used, the generator powered and recharged all the equipments. The cigarette lighter (male and female adaptors) power leads and crocodile clips were absolutely essential accoutrements to enable dual recharging and connection to the 12v car battery.

THE WEB SITE

8. Background. The Apogee expeditions had previously maintained a web site during the expedition to Chile in 1997 with reasonable success. On that occasion the satellite phone was loaned by BT which subsequently 'turned traitor' half way through the expedition when it failed to power up. The technology at the time was immature, and equipment less robust – in fact, expedition web sites (large Everest teams and the like) had only just become 'de rigeur' with the technology beginning to expand.

9. The Aim. Much was learnt by the Apogeans on that particular venture with web site communications, and these lessons were put to good use in the development of a web site plan for Kazakhstan 2000. The aim of the web site was simply as an additional, timely, and efficient means of updating the world on the progress of the expedition and it's aims. The expedition sponsors, supporters and particularly families and friends wanted to know of our 'state of play' on a daily basis, and enjoyed the use of technology to bring adventure into their homes. The expedition PR angle was also important as the team were heavily sponsored and supported by various Geographical and Mountaineering societies. The web site helped develop important PR for the Army (and it's use of adventure training) by the crucial 'link' the site had to the official British Army portal which attracts a mass audience.

10. Preparation. The web site was designed by the team's webmaster, Cpl Dave Fullstone who incredibly maintained and updated the site from his post in Naples! The web site was developed and designed by liaison with WO1 Mick Jenkins, with a need to ensure that the information was in line with current Army policy on 'internet communications'. The Directorate of Corporate Communications (Army) (DCC(A)), gave final authority for the site to go 'live' in late July 00, and further authority and agreement of site content was given by HQ Defence Geographic and Intelligence Imagery Agency (DGIA). DCC then agreed to have a 'link' on the Home page of the Army site (a bonus) which ensured a very high 'hit' rate from it's extensive audience.

11. Content. A key aspect of the aim of the web site was to 'go one further' than Chile and provide video images (as well as digital still images) for audiences to view on the site. Such technology and bandwidth had only recently become available in 1999 (in portable use for remote areas), and Norsk Data were instrumental in the provision of the necessary equipment. Telenor, Norsk Data's, parent company in Norway, are world leader's in satellite communications, and they provided the high speed data conduit and groundstation required to transport our data via satellite. Daily text reports were sent alongside the images to allow the audience to follow our dramas and progress as it happened.

12. Success. The site went 'live' on Fri 30 Jun 00, just 3 days before the expedition began in earnest – this proved to be a good choice of date as the site was inundated over the weekend ensuring that we 'captured' many viewers, and kept them 'online' during the very early stages of the expedition. (Viewers would have 'left' the site if we had gone 'live' any earlier). The hit rate proved to be very high during the first week and continued throughout with viewers from all over the globe. The link to the army site proved invaluable in attracting 'new' viewers and many service people continually monitored our progress. The site was also updated weekly on the DGIA Intranet and again proved popular with excellent feedback.

13. Problems. The web site, as a means of communication, proved extremely successful with a vast amount of complimentary feedback from those watching our progress. As with anything new, the project did have it's 'technical problems' which we have learned from:

a. Power. Power and it's contingency was vital. The data and image communication from the expedition area failed for about 7 days due to the car battery being unusable. The computer was therefore unable to be powered which reduced the effectiveness of daily updates and 'currency' on the site. This did not overly 'hinder' the site as satellite telephone updates were given in 'speech' mode (as apposed to data and digital pictures) to keep viewers updated.

b. Data Size. The sheer size of the MPEG video scenes provided a transfer problem which reduced the amount of video clips uploaded onto the site. Whilst the ISDN satellite transfer worked well (about 8 mins for a 20 sec clip), the 4 or 5 Mb size of data was unable to download to the webmaster's server which was restricted to 3Mb. The use of direct transfer using FTP software would have averted this problem but the team were not familiar with it's use. Accordingly, future expeditions will aim to upload info direct to the site from the expedition area, as apposed to using a web master located elsewhere.

SUMMARY

14. The constant development and revision of the communications plan, with it's inherent contingency plans, provided the expedition with a solid means of safety and updated the world on the expedition's progress. The plan worked well and the web site was a particular success. The feedback from viewers and the guest book proved that the effort was worthwhile and will be continued on future expeditions.

15. 'Apogee-Expeditions.com' will now maintain it's web site and use it as another means of communicating the results of our geographic and cultural collection plan. The site can now be developed to give valuable access to our GIS and mapping projects and will hopefully benefit future researchers and explorers with an interest in the fascinating Dzhungarskiy range.

16. The communication plan will now concentrate on the post expedition PR articles and will also include the final production of an edited video film.

MG JENKINS
WO1 (RSM)
Expedition Communications

Welcome to the Apogee Expeditions' Home Page

"Geographic Exploration, Surveying in the worlds Adventure and Scientific mountain wilderness regions"

News Page now with video downloads

DGIA

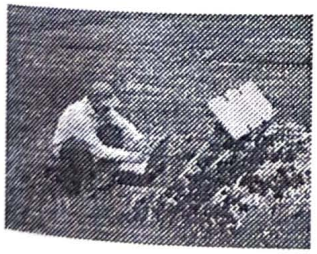
"The Apogee Expeditions began life in 1993 as Military Survey Expeditions within the Corps of Royal Engineers. The title of Military Survey is referred to on this web site in an historical context, but viewers should note that this small branch of the Royal Engineers, has been recently restructured to become part of the Defence Geographic and Imagery Intelligence Agency. The Apogee Expeditions will continue to live on as RE Survey within the DGIA"

Visitors Guest Book - Please Sign In

View Guest Book

Click here to submit feedback

KAZAKH APOGEE - "LATEST ONLINE NEWS AS IT HAPPENS" 03 July to 05 Aug 2000



The news page will be used to update the media, sponsors and supporters with LIVE video pictures and diary entries direct from the expedition area in Kazakhstan. The team will transmit their developments and progress using state of the art satellite telephone technology loaned by Norsk Data, using a TELENOR Thrane 64 kbps high speed data link phone.

The 'Apogee Expeditions' have been Sponsored by Norsk Data for 8 years

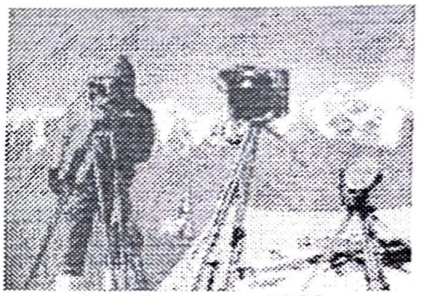
There are very few remaining 'blanks on the map' as the world embarks on the new millennium. Military Surveyors of the British Army have historically sought out the worlds 'uncharted regions' to explore and map such areas, in many cases to aid colonial expansion, but also to serve mans hunger for geographic discovery."

R.E. SURVEY 'APOGEE' EXPEDITION

KAZAKHSTAN 2000

Today's modern Military Surveyors, a small part of the Corps of Royal Engineers, have continued in their forefathers quest for exploration by mounting global scientific and adventurous expeditions to benefit geographic discovery.

Mount Copiapo 6100m and the joint nation Chilean/British team of surveyors



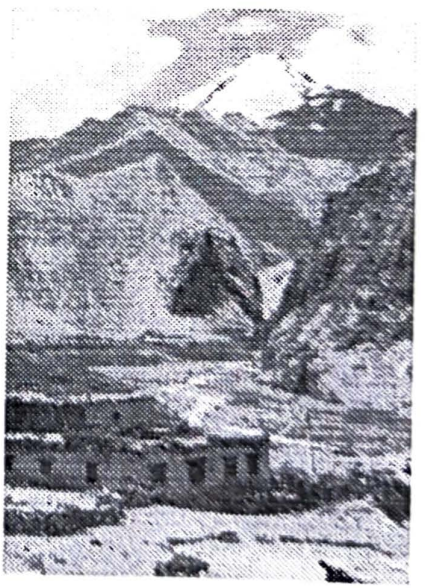
Nepal surveys 1980

The "Apogee expeditions" are a series of mountaineering and exploration expeditions designed to rekindle the adventurous and scientific spirit of early Military Surveyors, whilst developing the characteristics required of a soldier to survive in harsh environments. Previous expeditions have taken place in remote areas of Ecuador, India, Chile and Africa and all have produced geographic information in the form of image maps or geographic data of the mountain ranges. Each has had it's own unique dramas and adventure that has served to develop the skills required of a modern day soldier.

KAZAKH APOGEE 2000 is the Millennium expeditions to the remote Dzhungarskiy mountains - view the planning, aims and progress so far

The British Army supports exploratory adventure.....view the Army Site

ARMY



Kangyissay mountain massif surveyed in Northern Ladakh, Indian Himalayas 1995

Kazakh Apogee 2000

Home Page
The Apogee Expeditions
The 2000 Team
Latest News
Map Page

DGIA

"Mountaineering Exploration and Adventure in the rarely visited mountain range of Kazakhstan"

Sponsored by

NORSK DATA ND

With support from: ESRI, NRSC, NERA & TELENOR

Telenor

Patrons:
Patron Geographer : Lord Jellicoe KBE, MC, DSO, FRS
Patron Military Engineer : General Roy Wood FRGS

Endorsed by:
The Royal Geographical Society
The British Mountaineering Council
The Joint Service Expedition Trust
The Mount Everest Foundation

Project endorsed by
the Royal Geographical Society
(with The Institute of British Geographers)

Learn and discover some of the secrets of the central asian country of Kazakhstan by visiting www.kz/firsteng.html

The Millennium Apogee expedition will take a team of 11 Royal Engineer soldiers and a Regimental Nursing Officer to the relatively unexplored Dzungarskiy mountain range on the border of Kazakhstan and China. The team includes a mixture of experienced climbers and novices who will be introduced to the challenges and hardships of exploratory mountaineering.

View our online dramas and live pictures whilst on the expedition during 03 July - 07 Aug 2000

Kazakh Apogee 2000 - Background

There are very few areas remaining in the world that can be truly labelled "unexplored", but the little known 360 Km long 'Dzhungarskiy' range straddling the Kazakh and Chinese border in central Asia, is still virtually untouched.

This huge remote 'Alpine style' range is indeed a quiet backwater which seems to have been by-passed over the centuries. Ghengis Khan marched straight past, through it's better known geographical relation the 'Dzhungarskiy Gap', whilst more recently Soviet Climbers ignored it in favour of the higher, more creditable peaks of the 'Tien Shan' just to the south and east. Other than one western expedition in 1998 and a rumoured ascent of it's higest peak, TienShansky 4622m, the Dzhungarskiy Alatau has remained unexplored territory with a wealth of Alpine peaks to be climbed.

The expedition will be the true essence of exploratory mountaineering encapsulating our forefathers spirit of adventure. With no guidebooks or routes to follow, little prior information of what to expect and only the simplest of outline maps, this will be geographical discovery at it's best - taking everything at face value, remaining self sustained in a remote environment and following our instinct....!

Expedition Aims

1. To carry out exploratory mid-altitude snow and ice mountaineering with the objective of making 'first ascents'.

2. To introduce 'novice' soldiers to the rigours, hardship and challenge of remote mountaineering to help develop their leadership skills.

3. To collect geographic and cultural information to benefit future climbers and explorers visiting the range.

The Plan

The team will travel to Almaty in southern Kazakhstan by air from London before organising the logistics required to get the team into the heart of the remote range. A 2 day jeep journey will follow taking the team from the comfort of Almaty northwards across the barren desert wastes to the foothills of the Dzhungarskiy where a team of mules will continue the journey.

The range is well defended by steep cirques and torrid rivers which will demand an arduous 4 day trek high into the inner sanctum of the glaciated range, where a base camp will be established. Satellite communications and solar energy will allow the team to transmit digital pictures, data and diaries from the base camp onto the web site.

During a 17 day period, the expedition will split into 4 man teams to traverse, explore and climb untrodden peaks on each occasion establishing advance camps whilst communicating to base by radio. Geographical and environmental studies will also take place to record many of the unknown aspects of the range and a detailed environmental plan will be adhered to so as to limit our impact on the region.

The 2000 Team

R.E. SURVEY 'APOGEE' EXPEDITION
KAZAKHSTAN 2000

Home Page

The Apogee Expeditions

Kazakh Apogee 2000

Latest News

Map Page

DGIA

The 2000 Team

Expedition Leader
Stuart Batey Age 38
Scottish
Terrain Analyst

Stuart was previously the Deputy leader on Indian Apogee and is an accomplished mountaineer with experience of the Alps, Pyrenees, Scottish winter climbing and the Himalayas. He has been planning the expedition for 2 years now at the same time as holding down a terrain analyst instructors job in the Royal School of Military Survey, studying for his OU degree, and bringing up a young family of 3...!

Logistic Co-ordinator
Mick Jenkins Age 38
Welsh
Surveyor

Mick is the veteran leader of each of the previous Apogee expeditions who has undertaken all forms of climbing since he was 16. He is an experienced climber having taken part in expeditions in the Alps, Pyrenees, Andes, Africa, Borneo, the Himalayas and North America. He has now turned his skills to logistic planning and will be content to see all the camps fully equipped, whilst painting mountain scenes at base camp...!

Climbing Leader
Carl Burke Age 34
English
Geodetic Surveyor

Carl is a very experienced and capable climbing leader who hits the hills the Scottish hills on a regular basis throughout the year. He was the climbing leader in Chile, has experience of the Alps and Himalayas and continually upgrades his winter qualifications making him a knowledgeable leader. Carl is also a trained geodetic surveyor.

Deputy Leader
Frank McCorriston Age 36
Scottish
Terrain Analyst

Frank is an avid Scottish mountaineering fan whose regular experience of winter climbing conditions and remote expeditions makes him an ideal choice as one of the climbing leaders. He has climbed in the Alps, Andes, Himalayas and Pyrenees and is a keen environmentalist of wilderness areas.

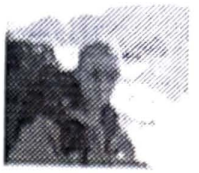
Scientific co-ordinator
Alan Gransden Age 29
English
Terrain Analyst

Alan has had his 30th birthday on the trip and is now feeling his age, he is probably as fit as anyone here but has been greatly effected by this leap out of his 20's. He is our technical wizard and has done some superb work for the trip on ArcView (software)and data collection. He is a novice mountaineer on his first Apogee Expedition and is raring to get up one of theses snow clad peaks.

John Owen Team Climbing Leader Age 31

John has led a number of Services mountaineering expeditions to Kenya, the Canadian Yukon, Bolivia, Nepal as well as organising many trips to the Alps and to areas within the UK and Europe. This will be his first Apogee Expedition in the three years that he has been a member of Military Survey and he is particularly looking forward to visiting a region that has seen so few visitors.

Alan Beeton Research Age 28



Alan is missing his football and cannot wait to get home for the next football season. He is our resident Diarist and Nightclub visitor (when given the chance) and will no doubt be revisiting the Almaty hotspots on our return. Alan is probably the most well travelled member of the team as he spends every spare moment pulling on his backpack and touring the world. This is his second Apogee Expedition after India in 1995 and his fitness and Scottish humour make him an invaluable team member.

Catherine Clare Regimental Nursing Officer Age 33

Catherine is our team Medic and to date has had to deal with smelly feet and various minor ailments. This is her first ever expedition and she is getting used to life in a tent amongst his harsh environment. She loves the rain and would like it to continue for ever (perhaps thats not true and she is actually dreaming of her beach holiday to come). She is currently a Regimental Nursing Officer at Frimley Park Hospital and is well qualified to look after the team. Her biggest job so far has been the suturing of a rucksack.

Carl Morrish age 26

Carl is a very cheerful and outgoing Scouser who has shown a great interest in Water Colour painting during his time in the hills. He has impressed himself and everyone else with his artistic abilities and will be giving an exhibition of his paintings at the Expedition Presentation. This is his first expedition and he is a very willing participant in all activities (he is espescially good at making fires).

Andrew Grubb age 25

Grubby, as he effectionatley known has a great deal of energy but thinks he may be loosing some of his fitness on this trip as he is not running his usual 15 miles per day. He is exceptionally fit and a great asset to the team. We have however discovered how to tire him out by letting him lead accross a soft snowfield, every step sinking up to his waist. He developed a technique of sorts which involved a great deal of thrashing about, leaving a nice path for the rest to follow, much to their delight. He is a great character, every expedition should have a Grubby.

John Warry age 24

John is the youngest member of the team and has celebrated his 24th birthday on the trip. He is a complete novice and on his first expedition but is showing outstanding climbing potential, displayed already by an ascent to 4,450m. He never stops smiling and is a very happy man, we suspect however he is missing his Mum's cooking although he makes every effort to hide this.

Darren Weller age 28

Darran is our team geologist who is more than happy to be off on his own tapping rocks and measuring glacial flow rates. He is acquiring the nickname 'Red Daz' as the team are convinced he has Russian origins. Look carefully at his prominent Slavik cheekbones and hooded eyes for confirmation. This is his first expedition and he is a very willing and able team member.

Denis Alexeevich Alimpev age 21

Assistant Base Camp Manager. Denis is a very fit young (21) Kazakh of Russian origin who organised the porters bringing our original kit up to this base camp. He carried a load of 40Kg when the porters only carried 20kg. On one particular day Denis made three 7km round trips (4 hour uphill journeys), up to this basecamp carrying loads of this weight (and not all were in fancy comfortable Western rucksacks). Today Denis swam the river which was in flood, and freezing in temperature. We are glad to have him on our side. His ambition is to climb Everest which we think he will achieve. He also happens to be a Kazak Greco/Roman wrestling champion.....!

Aivar Muratovich Dusenov - Exped Translator Age 30

Aivar has been with us since day one and helped a great deal with the food shopping as well as finding the best of all sorts of oddities like Car Batteries. He is an extremely amiable guy and wants to talk all the time. He spent two years in the Russian Army when he was young, posted to the Finnish border where it rained a lot (just like here). After a few vodkas he will admit to serving in Bosnia with a Muslim faction around Mostar (we think as a volunteer). He says Kazakh Muslims and Bosnian Muslims get on well together as they generally like to have a few vodkas. He has been a key member of the expedition to date and we could not have had the success we have without him.

Leonid

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