

# Regatta Kamchatka Volcanoes Expedition

Supported by the British Mountaineering Council & Mount Everest Foundation

Patron: Chris Bonington CBE FRGS

## Preliminary Report

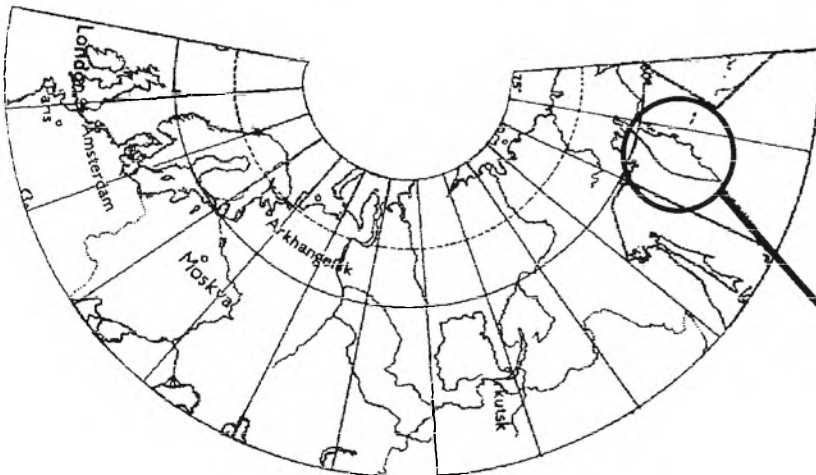
### Summary

The Expedition visited the Kamchatka peninsula on the Pacific coast of Siberia between July 16th and August 14th 1994. Members climbed Avacha volcano near Petro-Pavlovsk before moving to the Kliuchevskaya massif. Despite the worst summer storms in ten years, the Expedition made what is believed to be the first British ascent of the highest point of Kliuchevskaya, the highest peak in Siberia and NE Asia, and the highest active volcano in Europe and Asia. The expedition also made the first British ascent of Ushkovsky volcano.

<b>British Members:</b>	John Town	Director of Planning	University of Bradford
	Richard Wojtaszewski	FE Lecturer	Normanton Freeston High School
	Alyson Starling	FE Lecturer	Oldham VI Form College
	Huw Davies	FE Lecturer	Oxford College of Further Education

<b>Russian Members:</b>	Institute of Volcanology, Petro-Pavlovsk:			
	Slava Murav'ev	Glaciologist	Artur Bilichenko	Assistant
	Viktor Vavilionok	Assistant	Ivan Benedikt	Assistant
	Vadim	Volcanologist	Denis	Student
	Nikolai Gregorievich	Driver	Slava Bogatov	Driver
Katya	Cook			
	Tatiana Kadomtseva	Glaciologist	Inst. of Geography, Moscow State University	

### Expedition Diary



Day 1: 16th July

Depart Heathrow 12.15  
 Arrive Moscow 19.00  
 Depart Moscow 22.30

Day 2: 17th July

Arrive Petro-Pavlovsk 16.20

**Petro-Pavlovsk - capital city of Kamchatka - twelve hours ahead of UK**

Day 3: 18th July Lorry ride to Avacha Base (950m)

Day 4: 19th July Ascent of Avacha volcano (2,900m)

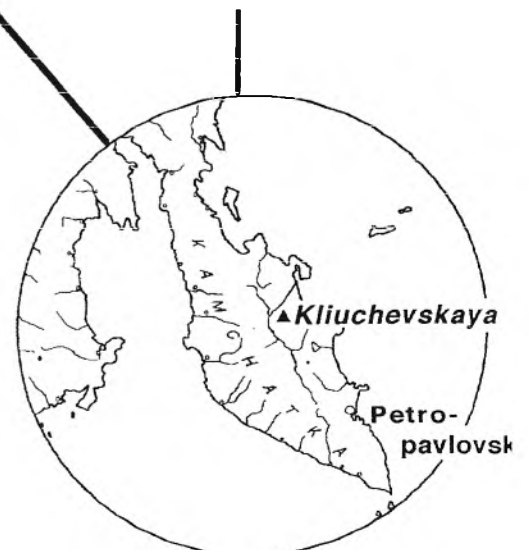
Avacha, just outside Petro-Pavlovsk, was not the ideal training climb - a stiff 6,000ft pull while still jetlagged less than 48 hours after arriving. The crater at the top was stunning, filled to the rim with black steaming lava and venting huge amounts of steam and sulphur dioxide. We wore masks to breathe.

Day 5: 20th July Rest Day

Day 6: 21st July Place Camp at c1500m on Koryaksky volcano (3,200m)

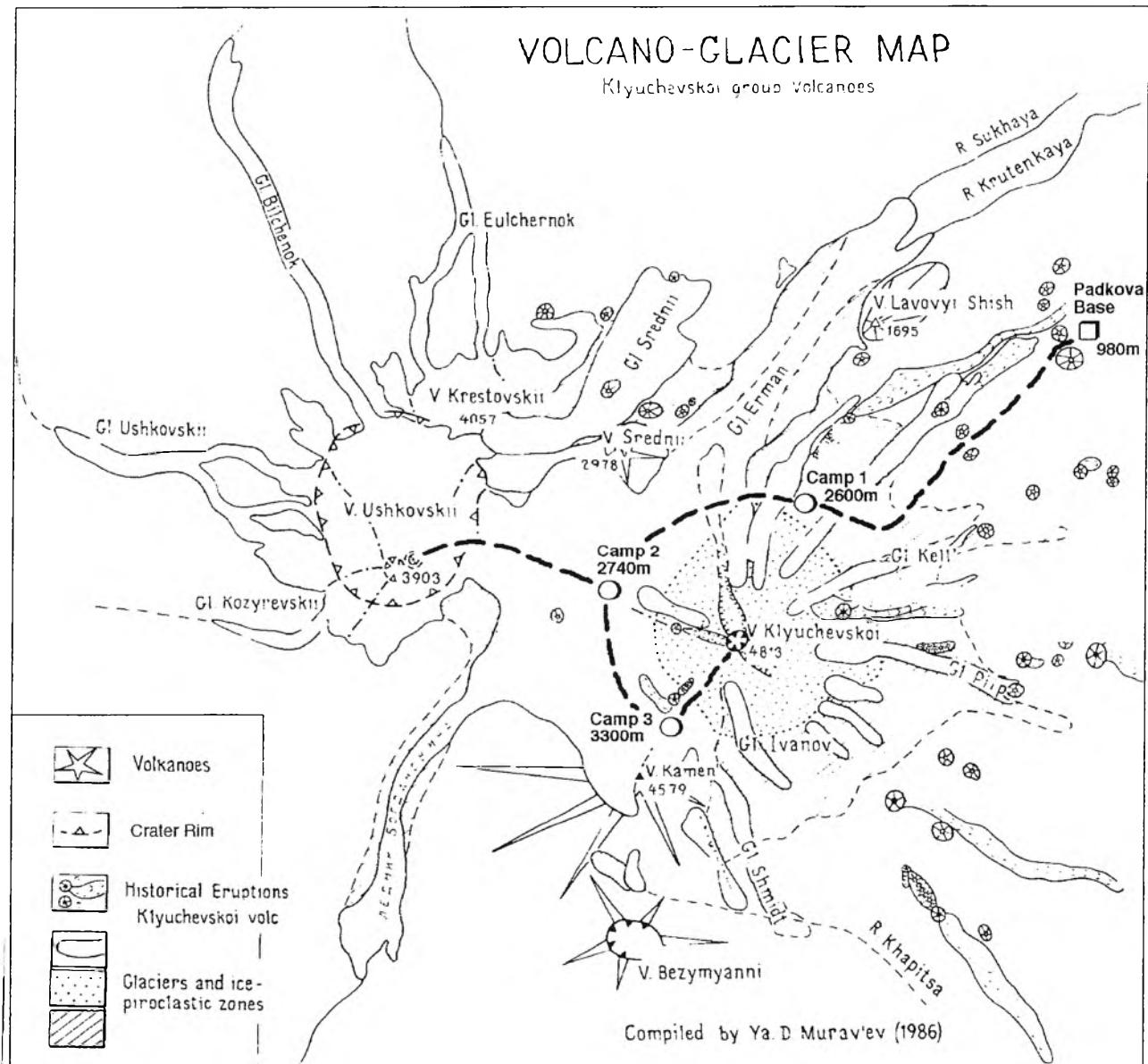
Day 7: 22nd July Retreat from Koryaksky

One tent was destroyed in high winds and a bivouac constructed from the remains collapsed in the early hours, forcing Rick and Huw into a night descent. Continued bad weather forced John and the remaining Russians to descend the next morning.



- Day 8: 23rd July Return to Petro-Pavlovsk  
 Day 9: 24th July Rest Day - visit to Pacific Coast
- Day 10: 25th July Lorry ride Petro-Pavlovsk - Milkovo (180 miles)  
 Day 11: 26th July Lorry ride Milkovo - Kozyrevsk (100 miles)  
 Day 12: 27th July Lorry ride Kozyrevsk - Kliuchy - Padkova Base Camp (100 miles)

Our two Russian lorries managed to lose one another on the 25th/26th, each waiting for the other in locations a hundred miles apart. We ate our evening meals well after midnight on three consecutive days. The Expedition's base at Padkovo was disappointingly low at 980m.



- Day 13: 28th July Padkovo Base, Kliuchevskaya volcano.  
 Day 14: 29th July Padkovo Base  
 Day 15: 30th July Padkovo Base  
 Day 16: 31st July Padkovo Base  
 Day 17: 1st August Lorry to Tsirkovaya cone (1300m), climb to Camp 1 (2600m)

Bad weather, rain, snow and low cloud for four days, prevented us from establishing higher camps, though Huw, Rick and the Russians made two carries to make gear caches at 2500m. On 1st August, despite continued mist and snow, most of the expedition moved up the mountain to establish a camp at 2600m at the E edge of the glacier crossing.

- Day 18: 2nd August Camp 1 (2600m) bad weather  
 Day 19: 3rd August Traverse to Camp 2 (2,720m) on Ice Plateau/'Pereval'  
 Ascent of Ushkovsky volcano (3,900m)

One day of good weather enabled us to complete our anti-clockwise traverse of the mountain from Padkovo to the Ice Plateau W of Kliuchevskaya and Kamen. At 2pm that day we then began the ascent of Ushkovsky, cramponing up 45 -50 degree glacier ice and hard nevé. The group reached the first crater at between 6 and 7.30 pm and congregated on the highest point of the second crater at 8.30 pm. This first British ascent was completed by all of the UK team together with Slava Murav'ev, Tatiana Kadomtseva and Artur Belichenko. The descent was completed in darkness at 12.30 am.

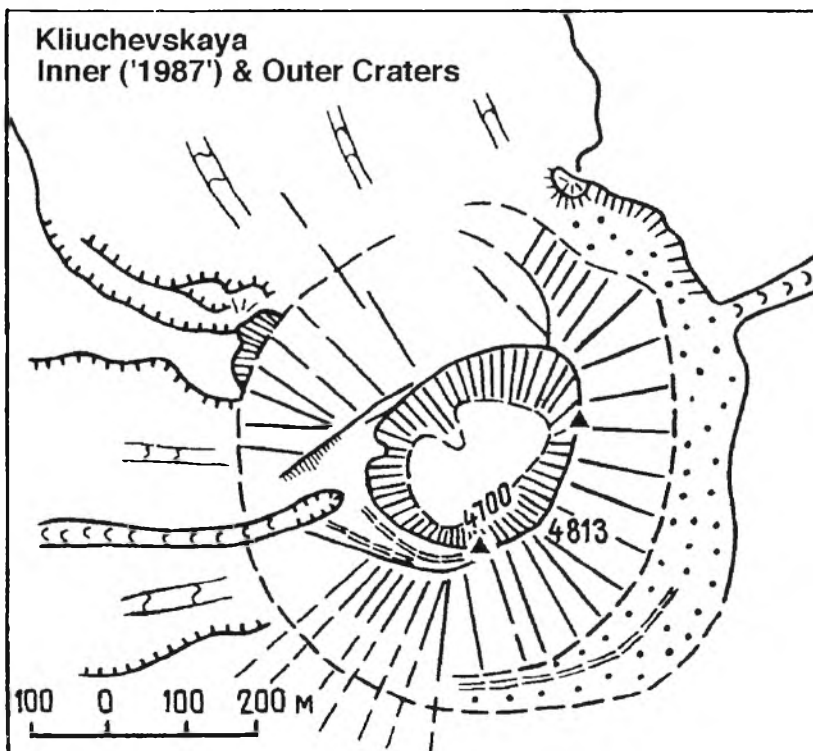
Day 20: 4th August	Camp 2: Rest day - bad weather - arrival of front from south
Day 21: 5th August	Move up to Camp 3 on Kamen/Kl. Col (3300m) - Storm
Day 22: 6th August	Camp 3: Storm
Day 23: 7th August	Camp 3: Storm abates about mid-day



Kamen and Kliuchevskaya from the south east. Camp 3 on col hidden between the peaks.

Time was starting to run out and we established Camp 3 in worsening weather which rapidly turned into a 48 hour blizzard with two feet of new snow. During this time Alyson's head cold turned into a chest problem and she and Rick wisely descended as soon as the weather cleared on the 7th.

Day 24: 8th August Ascent of Kliuchevskaya



John, Huw, Tania Kardomtseva, Slava Muraviev, Artur Bilichenko and Viktor Vivilionuk set off from the col at 8 am up the S slopes of Kliuchevskaya. It was not necessary to rope up and the climbing consisted of cramponing up 40 to 45 degree hard packed neve, overlaid in places with drifted powder, with some optional easy mixed ground. There was no stonefall which was a great relief. The 'thermal zone' at the top consisted of steep gravel, which was atrocious when hot but cramponable when frozen. Artur, Huw and Slava reached the top at 1 pm, John at 2 pm and Viktor and Tania at about 3 pm. The summit area presented a somewhat daunting picture, with jumbled chaotic features and steam rolling out of a whole series of rents in the ground. The highest point was on the inner rim, which dropped away into the inner crater. This was perhaps 60m deep and 100m across. While the rim stank with hydrogen sulphide from a score of angry fumaroles, the bottom of the crater was silent and snow covered.

Huw and John wore filter masks to avoid occasional choking lungfulls of gas and to move around freely. We started to descend some time after 4 pm and were back at camp between 6.00 and 7.30 pm.

Artur Bilichenko had accompanied the British climber Rowan Laxton on his ascent of the mountain in June. According to him, the pair had reached the outer crater rim but had not gone on to climb the highest point on the inner rim. We therefore appear to be the first British climbers to reach the summit.

Day 25: 9th August	Descent to Camp 2 in white-out conditions			
Day 26: 10th August	High winds partially collapse tent - Descent to Padkova Base			
Day 27: 11th August	Lorry ride Padkova Base Camp - Kliuchy - 'Km 47' Spa			
Day 28: 12th August	Lorry ride 'Km 47' Spa - Petro-Pavlovsk			
Day 29: 13th August	Depart Petro-Pavlovsk	21.05	Arrive Moscow	21.05
Day 30: 14th August	Depart Moscow	10.50	Arrive Heathrow	11.45

Getting down proved every bit as difficult as getting up. Rick, Alyson, Katya and Ivan were led into difficulties by Vadim, who got hopelessly lost in the glacier belt (nicknamed the 'Devil's Garden'). The weather was just good enough for the others to get down, but not before it had rendered a second tent uninhabitable. Four days later, including one of 36 hours, we were home.

### Many thanks to:

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Chris Smith MP	Dr Simon Inger
Don Granger OBE	(Alpine Club - Leeds University)
Rowan Laxton	Dave Rothery (Open University)
Sergei Zharinov (Alpha Tour Kamchatka)	Clive Oppenheimer (University of Cambridge)
Judy Armstrong	Lori Glaze (NASA/JPL Pasadena)
Valentina Vinogradova (Petro-Pavlovsk)	Shiona Dawson
Zoya Anderson (London)	Steve & Carol Town
Lynn Smith (Manchester Metro. University)	Sue Coffey
Penny Sweazy (Oldham VI Form College)	(Public Relations, Bradford University)
Alex & Mieczyslaw Kaszyk	John Williams
(Oldham VI Form College)	(Safety Officer, Bradford University)
Suzie Grant (Exodus Expeditions)	RGS Expedition Advisory Service
Betty & Angela at Aeroflot	Pink Pineapple
Chris Powell (John Gau Productions)	ARCO Limited
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last but not least: Kodak Limited  
Cotswold Camping

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Report produced on an Apple Macintosh Powerbook 180 using Word 5 and Superpaint 3. Scans by Laser Art, Bradford.

**REGATTA BRITISH KAMCHATKA VOLCANOES EXPEDITION**

**EXPENDITURE**

	per person	Total
Air fares London - Petro-Pavlovsk	£ 1,040	£ 4,160
Kamchatka: Accomn & Transport	£ 1,682	£ 6,730
Food/Fuel		£ 300
Materials & Film		£ 400
Insurance	£ 82	£ 328
Visas	£ 40	£ 160
Office		£ 1,100
Contingency		£ 200

**£ 13,378**

**INCOME**

Members contributions	£ 5,844
RISOL Ltd (Main Sponsor)	£ 4,200
Emmandjay Trust	£ 1,000
Manchester Geographical Society	£ 1,500
Mount Everest Foundation	£ 500
British Mountaineering Council	£ 200
Other	£ 130

**£ 13,374**

**24-May-94**

**ALASKA VOLCANO OBSERVATORY**  
**KAMCHATKAN VOLCANIC ACTIVITY**  
**MT. KLYUCHEVSKOI VOLCANO**  
**56°11' N, 160°39' E**

**KAMCHATKAN VOLCANIC ACTIVITY (No 30)**  
**July 14, 1994, 14:00 KDT**

The following Release was received by e-mail from KVERT (Kamchatkan Volcanic Eruptions Response Team). All times are Kamchatkan Daylight Time (21 hours ahead of ADT)

The seismic stations continue to register weak intermediate depth earthquakes (15-46 events a day) under the volcano. The duration of volcanic tremor was 8-22 hours a day. Weak fumarolic activity from the central crater was observed during the week.

**INFORMATION RELEASE (No. 32)**  
**KAMCHATKAN VOLCANIC ACTIVITY**  
**August 2, 1994, 17:00 KDT (0400 GMT)**

Weak intermediate depth earthquakes (15-149 events a day) continue beneath the volcano and volcanic tremor was recorded for 1-20 hours per day. The volcano was obscured by clouds the past several days.

**INFORMATION RELEASE No. 33**  
**KAMCHATKAN VOLCANIC ACTIVITY**  
**August 11, 1994, 12:30 KDT (2330 UMT)**

Weak intermediate depth (10-30 km) earthquakes (9-27 events a day) continue beneath the volcano and volcanic tremor was recorded for an average of 5-10 hours a day. The volcano was obscured by clouds the past several days.

**INFORMATION RELEASE No. 34**  
**KAMCHATKAN VOLCANIC ACTIVITY**  
**August 18, 1994, 16:10 KDT (0310 UMT)**

Weak intermediate depth (10-30 km) earthquakes (10-37 events a day) continue beneath the volcano and volcanic tremor was recorded for an average of 3-4.5 hours a day. A party of British climbers visited the top of the volcano in early August and reported no unusual activity inside the crater.

**INFORMATION RELEASE No. 35**  
**KAMCHATKAN VOLCANIC ACTIVITY**  
**September 2, 1994, 17:10 KDT (0410 UMT)**

Weak intermediate depth (10-30 km) earthquakes (8-36 events a day) continue beneath the volcano and volcanic tremor was recorded for an average of 5-17 hours a day. The usual fumarolic activity was observed in the central crater.

INFORMATION RELEASE No. 36  
KAMCHATKAN VOLCANIC ACTIVITY  
September 8, 1994, 16:10 KDT (0310 UMT)

Weak intermediate depth (10-30 km) earthquakes (1-4 events a day) continue beneath the volcano and volcanic tremor was recorded for an average of 19-22 hours a day. The usual fumarolic activity was observed in the central crater.

INFORMATION RELEASE No. 37  
KAMCHATKAN VOLCANIC ACTIVITY  
September 12, 1994, 14:10 KDT (0110 UMT)

On September 8, an eruption began from the central crater at about 04:00 KDT according to seismic data. Lava was observed fountaining up to 200-300 meters above the crater from two separate vents. Gas and ash outbursts to 1 km were recorded every 10 minutes.

On September 12, the eruption strengthened. Gas and ash bursts were rising up to 1.5 km above the crater, and the ash plume reached an estimated 3 km above the 4.7 km-high-volcano to an altitude of 7.7-8 km (~25,000 asl). The plume extended to the NE for more than 50 km and ashfall was reported in Klyuchi city 25 km NNE of the volcano. A one-kilometer-long lava flow was observed on the SE slope of the volcano; mudflows were also observed. Volcanic tremor is continuous and is being recorded as far as 65 km from the volcano.

INFORMATION RELEASE No. 38  
KAMCHATKAN VOLCANIC ACTIVITY  
September 14, 1994, 11:50 KDT (2250 UMT)

On September 13, the volcano was obscured by clouds. Today gas and ash explosions were rising to 600-800 m above the crater with an ash column extending to 2 km above the crater (6700 m asl). The ash plume was carried east 50 km or more by strong winds. A new lava flow 1.5 km long was observed on the northwest slope of the volcano issuing from two vents about 200 m below the crater rim. This flow is in addition to the lava flow on the southwest flank of the volcano (erroneously listed as being on the southeast flank in IR 37, Sept. 12). Lava fountains were observed last night extending to 200 m above the crater rim.

Volcanic tremor is continuous with a maximum amplitude of 6.3 microns and is recorded at distances of 11 km from the volcano.

INFORMATION RELEASE No. 39  
KAMCHATKAN VOLCANIC ACTIVITY  
September 19, 1994, 15:050 KDT (0200 UMT)

During September 15-19, gas and ash bursts were rising up to 500-700 m above the crater. The eruption column reached a height of 1.5-2.0 km above the crater (~20,000 ft asl) and extended downwind to the southeast for more than 50 km. The lava flows on the northwest and southwest flanks that are extruding from the two vents 200 m below the crater rim have now moved down to 2800 m asl. Phreatic explosions are occurring at the contact of the northwest lava flow and the glacier. Lava fountains were observed in the central crater reaching a height of 300-500 m.

Volcanic tremor is continuous with a maximum amplitude of 6.1 microns and is recorded at distances of 11 km from the volcano.

INFORMATION RELEASE No. 40  
KAMCHATKAN VOLCANIC ACTIVITY  
September 24, 1994, 11:30 KDT (2230 UMT)

During September 20-23, gas and ash bursts were rising up to 800-1000 m above the crater. The eruption column reached a height of 1.5-2.0 km above the crater (~20,000 ft asl) and extended downwind to the southeast for more than 100 km. The lava flows on the northwest and southwest flanks continue to be active. Lava fountains were observed in the central crater reaching a height of 500-700 m.

Volcanic tremor is continuous with a maximum amplitude of 8.2 microns and is recorded at distances of 11 km from the volcano.

INFORMATION RELEASE No. 42  
KAMCHATKAN VOLCANIC ACTIVITY  
October 1, 1994, 11:00 KST (2200 UMT)

On the afternoon of September 30, eruptive activity increased with ash bursts observed rising to 10,000' above the crater and an ash column rising to an estimated elevation of 32,000-35,000' ASL. This ash plume extended to the southeast for more than 60 miles. [Note: AVO passed on the information on ash column height and plume length to the FAA and National Weather Service at 1:50 AM this morning, September 30 Anchorage time after receiving a phone call from KVERT]. Lava flows were observed on the northwest and southwest slopes of the volcano extending down to about 10,000' ASL. Mudflows were noted on the north slope of the volcano. Continuous volcanic tremor was being recorded with a maximum amplitude of 8.4 microns registered at a distance of 11 km from the volcano.

Today, October 1, the eruption entered a paroxysmal stage at 0600 with burst of lava rising to 15,000' above the crater rim. The ash column elevation was estimated at 50,000-65,000' ASL and extended to the southeast for more than 60 miles. Phreatic explosions were occurring along the margin of the flank lava flows with steam clouds reaching to thousands of feet. Avalanches of incandescent blocks were observed coming from the crater down the north slope of the volcano.

INFORMATION RELEASE No. 43  
KAMCHATKAN VOLCANIC ACTIVITY  
October 2, 1994, 11:15 KST (2315 UMT)

Summary of activity for past 36 hours

October 1 09:00-11:00. Ash and lava bursts produce a dark, ash-laden plume rising to a height of 50,000-60,000' ASL and moving in an ESE direction.

14:00 Dark ash plume to 50,000' ASL.

15:00 Lava and ash explosions still occur at the central crater with the ash column reaching to 40,000-46,000' ASL. Plume is moving ESE at an altitude of 33,000-36,000' ASL.

15:00-17:00 KVERT member E.ZHDANOVA flew around the volcano by helicopter. Two lava flows were



observed on the N and NW slopes of the volcano and lava was still fountaining to 3,000' above the crater rim. The eruption appeared to reach its maximum intensity between 6:00 and 16:30 KST.

19:00 Ash plume was now at a maximum altitude of 30,000-35,000' ASL and drifting E for more than 60 miles. Volcanic tremor was continuous with a maximum amplitude of 8.4 mkm.

October 2 09:20 A dark ash plume rising to an estimated 28,000-29,000' ASL and drifting E.

11:00(2300UMT) Dark ash plume rising to 20,000-23,000' ASL and drifting NNE.

KVERT CONTINUES TO MONITOR VOLCANOES CLOSELY

PLEASE CONTACT THOMAS P. MILLER IF YOU HAVE QUESTIONS OR COMMENTS.

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