

## 1958: An Exceptional Season

From time-to-time there are noteworthy climbing seasons within the Karakoram-Himalaya (K-H); many unfortunately stand out because of tragedy. The following list cites some prime examples.

Year	Mountain	Event
1934	Nanga Parbat	A week-long blizzard kills 10 climbers.
1937	Nanga Parbat	Ice avalanche buries 15 on the Rakhoit Glacier.
1986	K2	A period of very stormy weather occurred when a number of climbers were near the summit. The net result was 13 fatalities.
1996	Mt. Everest	Eight fatalities during blizzard conditions- highly publicized event.
2014	Mt. Everest	16 Sherpas killed in avalanche that swept down onto the Khumbu Glacier.

However, it's not all bad news. The climbing season of 1958 is noteworthy for the unparalleled success mountaineers enjoyed on some of the finest peaks in the K-H. Within a short span of time five first ascents were made within the Karakoram. The peaks that succumbed to boot prints were: Gasherbrum I, Gasherbrum IV, Chogolisa NE, Rakaposhi and Haramosh. The first three named peaks lie within a triangle centered on the upper Baltoro Glacier; and were climbed by three different national expeditions. Rakaposhi, some 18 miles (29 km) north-northeast of Gilgit, hence a part of the western Karakoram, was climbed by a British expedition. Due south of Rakaposhi and some 26 miles (42 km) east-southeast of Gilgit lies the imposing shape of Haramosh; a striking peak as seen from the ground or air. The first to trod its airy summit were the Austrians.

One important reason that these five peaks were climbed in 1958 was the excellent weather that mountaineers enjoyed over the first half of the summer. It was certainly not storm free by anyone's accounting, however, compared to most summers, the weather, especially early on, was climber friendly. All of this success however, was not without its own cost, as will become apparent.

### Gasherbrum I: (Hidden Peak) 26,469 ft, 8068 m

G-I as it is known, is the tallest of seven peaks that form the Gasherbrum group located off of the upper Baltoro Glacier in the eastern Karakoram (note: often only six peaks are attributed to the Gasherbrum group, however, the Alpine Club Himalayan Index lists seven, even then some of the peaks have multiple summits). These seven mountains are spread out in the form of a horseshoe opened on the southern end, with G-III and G-IV form the apex in the north. The middle of the horseshoe is filled by the South Gasherbrum Glacier (SGG) which is a tributary of the Abruzzi Glacier which itself flows into the upper Baltoro Glacier. Eighteen miles (29 km) to the northwest of G-I is the hulk of K2 while Sia Kangri is six miles (10 km) to the southeast. The international border between Pakistan and China (Tibet) runs from G-I up to G-IV and north to Broad Peak. Access to the Gasherbrum peaks is almost always via the west, that is from the Baltoro; although they can certainly be approached from the Urdok Glacier system if the Chinese grant permission. The meaning of 'Gasherbrum', like most Balti names is far from definitive; several suggestions are 'shining wall' (Dyhrenfurth 1955) and 'beautiful mountain' (AJ 1958)

The trek up the Baltoro Glacier to the foot of G-I is on the order of 33 miles (53 km); historically expeditions typically took from 6 to 10 days to make the journey depending on the weather and the whims of the Balti porters. The upper half of the SGG is known for being a daunting trek/climb due to its extremely broken nature which culminate in three extensive icefalls. Fortunately for climbers headed to G-I, much or all of the SGG's nasty terrain can be avoided,

depending on what climbing route is selected. Southern and western routes avoid the SGG all-together. Northern routes may involve some time spent on the broken ice.

The first group of mountaineers to explore G-I were members of the 1934 International Himalaya Expedition (IHE) led by G. Dyhrenfurth. However, three much earlier expeditions had ventured into the general area: Conway in 1892, Duke of Abruzzi in 1909, and the Duke of Speleto in 1929. It should be noted that many of the names of the various geographic features along the Baltoro Glacier and its tributaries, were named by William Conway. He gave G-I the name of 'Hidden Peak' because it is tucked behind G-V and G-VI when viewed from the upper Baltoro Glacier.

The IHE conducted a thorough reconnaissance of the western and southern approaches to G-I; they ventured up a route starting on the Abruzzi Glacier, along the Urdok Ridge to an elevation around 20,300 ft (6187 m), to what was for a time called the IHE Spur. They were not equipped for a full assault of an 8000 m peak hence turned their mountaineering ambitions to Sia Kangri and Baltoro Kangri. ['kangri' means 'snow mountain']

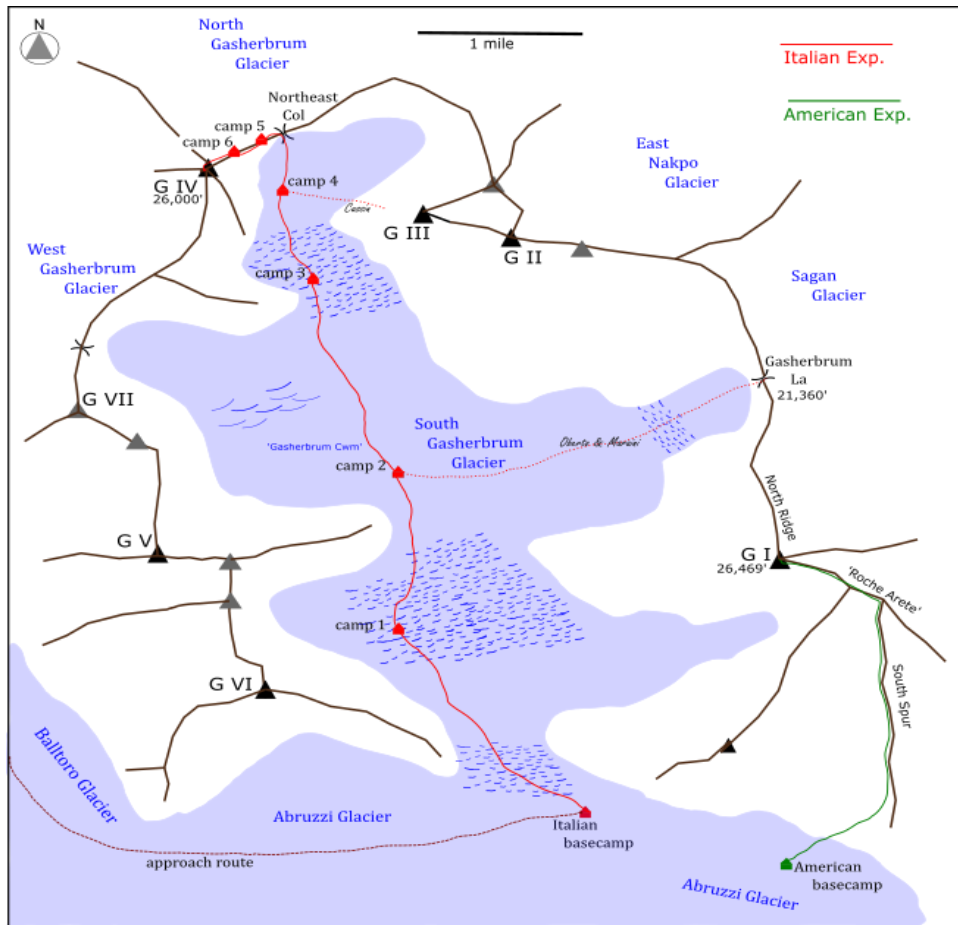
The French were the next to focus on G-I and they did in a big way during the summer of 1936; they amassed some 14 tons of gear that had to be manhandled to their basecamp (16,250 ft, 4953 m). This was one of the largest Karakoram-Himalayan expeditions ever to be assembled, there are various estimates on the number of porters it took to get all of their gear up the ice: the low is around 670 and a high of 800. In any case when they came to grips with the mountain, they worked their way up the South Spur ultimately reaching 23,200 ft (7071 m) before an extensive period of stormy weather settled in over the Karakoram. The attempt was called off in late June.

World War II and the aftermath thwarted mountaineering in the K-H for many years. When mountaineering did resume in the late 1940's, climbers went after the highly sought-after 8000 m peaks with a vengeance. It was not until 1958 that the next attempt was made on G-I. This effort was called the American G-I Expedition and it was

led by Pete Schoening, a mountaineer who had spent a considerable amount of time on K2. The team consisted of seven additional Americans and two Pakistanis, both captains in the army. In contrast to the French, this group was only capable of accumulating three and half tons of gear; part of that however consisted of supplemental oxygen which by the 1950's had become standard on most expeditions attempting peaks in the high 7000 m range or above.

The Americans established basecamp (BC) on June 10<sup>th</sup> on the Abruzzi Glacier and immediately set out on their own reconnaissance. After dutifully studying the mountain from the north, west and south, they narrowed their choices to two possible routes; the North Ridge and the Southeast Ridge. Like good democratic Americans, they voted on which route to exploit, the Southeast Ridge won by a single vote. This ridge was first explored by Roche and Ertle during the IHE, hence it was sometimes referred to as the Roche Arete.

Camp 1 was installed further up the Abruzzi Glacier in the vicinity of 18,500 ft (5639 m), and sometime later moved off the rotting ice to an adjacent moraine. The route now commenced ascending the SE Ridge; Camp 2 was established on a narrow bit of snow ~ 21,000 ft (6400 m). Above this camp the ridge narrowed, with double cornices in some locations. In addition, there were intermittent snowstorms; the net result was a slow but deliberate pace set by the lead climbers. Eventually some 5,000 ft (1525 m) of rope was fixed along this part of the ridge: that is from below Camp 2 up to Camp 3. The latter camp was placed on what they called the Snow Dome at 22,000 ft (6705 m), which was just a wide hump on the ridge. Above the ridge the route was more of long plod up a snow plateau than a technical climb, however, it was now late June and the team was worried that a steady push of monsoon moisture from the south might ruin any attempts for a summit bid. Hence, they decided to push upward as rapidly as possible for the duration. However, they still had to finish traversing the ridge, as Camp 3 was sited on the ridge some distance below the start of the snow plateau.



Camp 4 was located on the lower edge of the snow plateau at ~22,500 ft (6858 m). Shortly thereafter the mountain was hit by a three-day long storm that forced the lead climbers to remain at Camp 4. After the storm had dissipated a team of five wallowed up the snow plateau in deep soft snow. At this juncture the climbers started to use supplemental oxygen. Camp 5 was placed at ~23,500 ft (7163 m) on the upper plateau with Kauffman and Shoening taking up residence while Swift, Clinch and Nevison returned to Camp 4.

The two lead climbers left Camp 5 at five AM July 5<sup>th</sup> in their attempt to reach the summit; success was in doubt because it was a

long trek from their present position; some 3,000 ft (914 m) of elevation to gain, and of course, more soft snow to contend with. They reached the col that separates the main summit from the south summit around 9 AM, above, above the slope steepened. This was actually good news, as now they transitioned from deep snow to rock covered by a thin layer of snow or ice. They worked this line until they reached a couloir below the summit ridge which provides direct access to the top. The two men reach the summit of G-I around 3 PM. Fortunately the weather was good, so they stayed on the summit for close to an hour. The descent to Camp 5 was uneventfully but lengthy.

After some discussion the next day, the team decided to forego any additional summit attempts; camps were dismantled and everyone returned to BC. The only casualty was Kauffman who suffered some minor frostbite. The expedition returned to Skardu exactly two months after it had departed; G-I had been climbed in short order.

While the American team had been getting ready to make their summit push, additional expeditions were making their way up the Baltoro Glacier. A Japanese team was headed for Chogolisa while an Italian expedition had been granted permission to try its luck on the beautiful but steep G-IV.

### **Chogolisa NE: 25,111 ft, 7654 m**

On a clear day, a person looking southeast from the Baltoro Glacier at Concordia, will view some 11 miles (17 km) away, the bulk that is Baltoro Kangri; to the right the slightly taller Chogolisa. Both of these mountains have multiple satellite peaks. Baltoro Kangri was called 'Golden Throne' by the by the Conway expedition and Chogolisa was referred to as 'Bride Peak' by the Duke of Abruzzi expedition. The Duke and team made an attempt on Chogolisa in the summer of 1909, they were ultimately defeated by the weather, but not after a tenuous struggle against the cold and snowstorms. Their highest

point gained was approximately 24,600 ft (7500 m) on the Southeast Ridge, at least that is the elevation that they estimated to be. Upon close inspection Chogolisa actually consists of two distinct summits, the southwest summit (25,157 ft, 7668 m) is slightly higher than the northeast summit by 46 ft (14 m). The distance between the two summits is on the order of 550 yards (515 m).

The Japanese plan of attack was to follow the Duke's route as both the north and eastern faces of Chogolisa consist of steep slopes of ice and rock, routes that were not being attempted at that time (the north face has subsequently been climbed). Basecamp was established on July 8<sup>th</sup> at just over 16,000 ft (4880 m) on the very southern edge of the Baltoro Glacier, adjacent to the NW ridge which extends down from Baltoro Kangri. The Japanese were getting established in their BC just as the American GI team was returning to their own BC after reaching the summit of G-I.

Looking south from their BC the Japanese team saw their first challenge, finding a route through the chaotic mess of ice known as the North Chogolisa Glacier (NCG). Once they had worked their way up the lower NCG they would gain access to the SE Ridge and the large low-angle plateau lying to the south, the latter is essentially the upper section of the NCG. They hoped to follow the line up the SE Ridge skirting a feature known as the Ice Dome on the south, before making the final push to the summit along the ridge. That was the preconceived plan which was based on what they could glean from the 1909 expedition and the previous summers' attempt by the Austrians; Buhl and Diemberger. The two Austrians nearly made it to the summit but a storm moved in at the critical juncture when they were high on the SE Ridge. In the face of the storm, they decided to call off the attempt and head back to camp. On the decent in low visibility Buhl walked over a cornice on the ridge.

The Japanese team consisted of 12 climbers under the leadership of Professor Takeo Kuwabara, they were all members of the Academic Club of Kyoto. A number of the team were academics from Kyoto University and there were several who had prior

Himalayan experience. They had like most contemporaneous expeditions, brought along a supply of supplemental oxygen to be used high on the mountain. The first task was finding a route through the icefall; this consumed eight days. Camp 1 was installed on a flat area located on the western of the icefall, Camp 2 was just above the icefall at ~19,350 ft (5898 m), a little below Kondus Saddle. This low spot on the ridge overlooks the upper Kondus Glacier system to the south. The team had hoped to angle the route from the top of the icefall over towards the base of the SE Ridge, but it was not possible. Just because they had cleared the icefall does not mean that it was clear sailing from here on out. The team found that the snow at Camp 2 and above was considerably deeper and softer than they had hoped for. In addition, the high-altitude porters were not up to the task. What this meant was that the team would have to perform a lot of the load carrying to the higher camps, these is where a team of 12 paid dividends.

Although the Japanese were worried about the arrival of monsoon moisture, and hence wanted to move as rapidly as possible, conditions forced them into a much slower pace. They pushed upwards, reaching the base of the SE Ridge where they installed Camp 3 (~21,000 ft, 6400 m). The climbing of the lower section of the ridge went well, Camp 4 was established near southeast side of the Ice Dome. It should be explained that the Ice Dome from the Baltoro side appears as a substantial hump on the SE Ridge. On the south, that is from the very upper reaches of the NCG, a 50° slope of snow/ice leads up to its top; in reality the Ice Dome is essentially a two-dimensional feature.

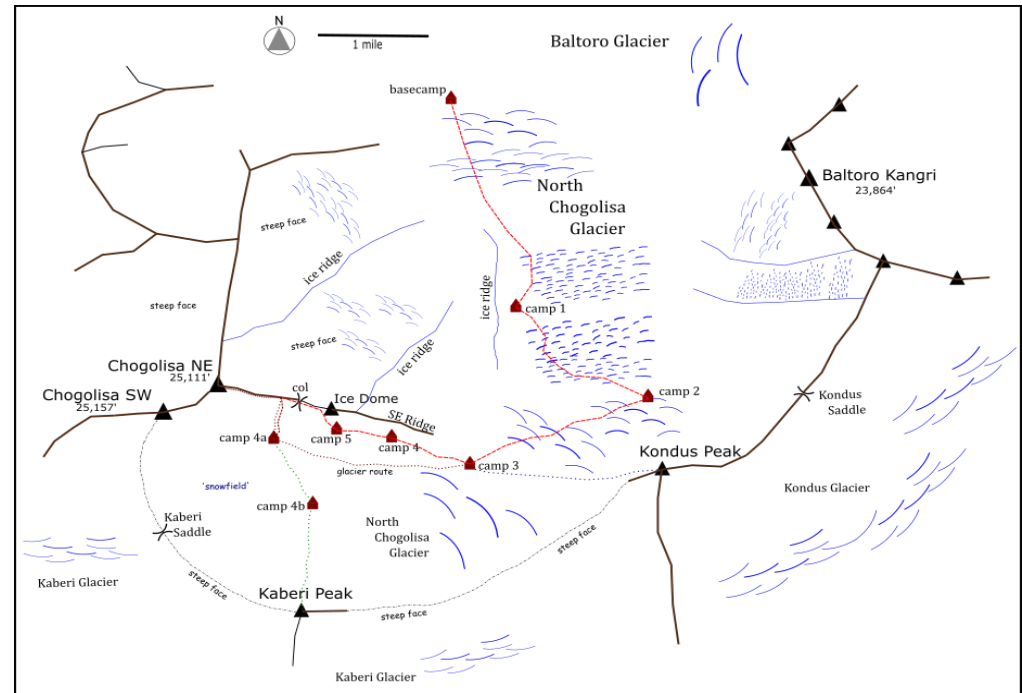
Near Camp 4 climbers spotted a tent that was half buried. Snow had also managed to work its way inside, nevertheless they found a sleeping bag, two notebooks, some food, stove and roll of film. This had been Herman Buhl's last camp before his death the previous summer. The Japanese took the film and notebooks and eventually gave them to the Italian expedition whose BC was near the

Japanese BC. The Italians took the mementos back to Europe and passed them onto Buhl's widow in Austria.

The next part of the plan was to locate Camp 5 on or near the col on the SE Ridge that separates the Ice Dome from the summit; however, the soft snow, lack of help from the porters and the intermittent stormy weather forced the camp to be sited on the southern flank of the ice dome (23,000 ft, 7010 m). Although was not as high and as far along the ridge as they had wished, on July 31, Fujihara and Hirai departed Camp 5 around 4 AM in an attempt to reach the summit. At least the weather was ideal for the climb. In the morning hours they were able to skirt around the Ice Dome and work their way onto the SE Ridge above the col. The ridge was highly corniced on the Baltoro side. From here on out their pace was reduced to a crawl. They had to downclimb into the col and then start to make their way back up the ridge. Time simple ran out for the two men; it was around 4 PM when they decided to return to camp. They left their supplemental oxygen units at this high point in hopes of retrieving them on a second attempt.

Climbing along the ridge had been precarious and hence slow, so the two men decided to take an alternate descent route. As it turns out they descend onto the sloping plateau that forms the highest part of the NCG (they referred to it as the 'snowfield'), skirting very wide of the Ice Dome. This route evidently took them quite some distance below Camp 5 as well as Camp 4, so the two climbers headed for Camp 3 (they started to call this the glacier route). They arrived at Camp 3 at 9 PM, it had been a long and disappointing day.

After a day's rest for Fujihara and Hirai, a party of five Japanese supported by five porters, the latter having recovered from early illnesses and altitude sickness, climbed back up the glacier route and established a new camp which they dubbed Camp 4a. It was located to the southwest of the Ice Dome at ~22,000 ft (6705 m). Once again, the climbers had hoped to site the camp considerably higher but the porters had reached their limit and would not budge



any higher. Fujihara and Hirai took up residence at Camp 4a while the other three climbers; Yamaguchi, Nakashima, and Takamura set up another camp (4b) half way between the Ice Dome and Kaberi Peak, the latter is a prominent feature to the south.

The summiteers left Camp 4a early in the morning of August 4<sup>th</sup> and were able to make good time to the col and then on to where they had left their oxygen units. Above the pace slackened due to the steepness of the ridge and the soft snow; in fact, they were almost down to a crawl but persistence paid dividends, they reach the top of the ridge around 4 pm. Prior to reaching the top of the ridge, their supply of oxygen had run out; nevertheless, they were not going to turn around at this juncture.

The only obstacle between them and the northeast summit was a 130 ft (40 m) tall rock pinnacle. They climbed this rock without delay and were on the summit by 5 PM. The weather had been postcard perfect all day long for the attempt. They stayed on the top, which they note was not wide enough for both of them to stand on,

for about 30 minutes. It does not appear that they gave any consideration or notice that the southwest summit might be a bit higher. With a height differential of 46 ft (14 m) it would be hard to judge which was higher, but one wonders if they even thought about it. The expedition narrative was written by the leader and hence we don't know the two men's state of mind or intentions. They descended the same route that they had ascended, reaching Camp 4a with the aid of a bright moon at 10:30 PM.

While Fujihara and Hirai had been on their bid for the summit, the remainder of the team had not been idle. Two men based at Camp 3 climbed a small summit located to the southwest of Kondus Saddle which they named Kondus Peak (22,175 ft, 6760 m). Meanwhile, the support team who had established Camp 4b ventured south across the upper NCG and summited 22,965 ft (7000 m) high Kaberi Peak. The night of August 6 the most powerful snowstorm that the expedition experienced hit the mountain. Fortunately, all the climbers were back in their respective camps by this time. The storm lasted for two days after which the team started to dismantle their camps; there was no further consideration of a second summit attempt.

#### **Gasherbrum IV:** 26,000 ft, 7925 m

Even prior to 1958 the Italians had considerable history in the Karakoram. The Duke of Abruzzi Expedition of 1909 which made an attempt on K2 and Chogolisa, De Filippi's Expedition of 1913-1914 which explored the Rimo Glacier system, and the Duke of Spoleto Expedition of 1929 which also spent a considerable amount of time on the Baltoro Glacier and in the Shaksgam Basin. Their most recent exploit had been the first ascent of K2 in 1954.

The Italian G-IV expedition entailed eight climbers led by the 49-year-old Riccardo Cassin. Cassin would become a legend in the mountaineering world, in fact G-IV was one of his early international expeditions. Despite being middle aged, he was just beginning to hit his stride; three years after this expedition he led the team that made

the first ascent of a difficult line on Denali that now bears his name: the Cassin Ridge. Another heavy hitter on the team was Walter Bonatti. At age 25 Bonatti already had an impressive mountaineering resume; this included a very strong performance the previous summer on K2. Although he did not summit, his efforts made the expedition a success. He did climb to 26,000 ft (7925 m) and survived a bivy high on the mountain with a Balti porter when they were benighted on a dangerous slope in-between camps.

Besides the two Italian stars the team consisted of six climbers with various amounts of alpine experience- a number were guides and ski instructors. The climbers and their 450 porters lugged some seven tons of gear up the Baltoro Glacier in mid-June. Fosco Maraini wrote the official account of the expedition which appeared in the *Alpine Journal* (1959, vol.64). In that article he states that they took some 800 ice and rock pitons, in addition, "...500 metal elements for ladders, 60 wooden wedges, 250 wooden knobs for ropes." One wonders what the purpose of the wedges and knobs were! With regard to all of this gear, Maraini writes "Nothing was to be left to the vagaries of geology, chance or weather, on that 'superb peak'!"

Gasherbrum IV had no previous attempts prior to this expedition, which in and of itself is a bit surprising considering that it is highly visible from the Baltoro Glacier. However, there were two reasons why it had not attracted any attention until the summer of 1958. First, with an elevation of 7925 m, it is just a bit shy of the magic 8000 m and hence it had less marketability than the taller peaks. Secondly, the part of the mountain that is visible from the Baltoro Glacier is the Western Face, also known as the Shining Wall. Bruce Normand who made an attempt on G-IV from the east side in 2018, describes the Shining Wall as ..." rising unbroken for 2500 m (8200 ft) directly to the summit." In other words, this mountain might be a little lower than some of its neighbors, but it is a very difficult proposition. It has no 'standard' or easy routes.

By June 22<sup>nd</sup> the team had installed its basecamp on the Abruzzi Glacier ~17,500 ft (5335 m), not far from the American BC.

The first order of business was to find a route through the first of three icefalls on the South Gasherbrum Glacier (SGG). There was a significant amount of soft snow to deal with enroute to Camp 1 (18,300 ft, 5580 m), which was established on the western margin of the second icefall. Between the second and third icefall is a large plateau, what the Italians labeled the Gasherbrum Cwm. It is surrounded by the Gasherbrums, and as Maraini notes ...“a spot of extraordinary beauty.” This is where Camp 2 was sited, not far from the base of the G-V. A short time after the camp had been established, Cassin and Oberto, the latter being a mountain guide, were nearly killed by an avalanche that came down the east face of G-V and deposited its load near the camp.

The next order of business was to push the route through the third and highest icefall. This jumble of unstable seracs was where the ice was forced between the narrowing walls of the valley, G-III was to the east and G-IV to the west with less than a mile (1.5 km) separating the two summits. It took the team over a week to climb this icefall, which required an elevation gain of about 2,000 ft (610 m). Since the route through the labyrinth of pinnacles and leaning towers of ice was anything but straight, another camp had to be established; in this case within the icefall. Camp 3 (20,700 ft, 6310 m) was about two-thirds the way up the icefall; climbers tried to spend as few nights here as possible. Although no seracs collapsed on the camp, it was a mental strain on climbers to be lying in a tent all night just wondering when something might topple over and end their careers.

At the top of the icefall was a nearly continuous wall of ice about 200 ft (60 m) high from which seracs would occasionally calve off from. Fixed ropes were added in the last section before the icefall transitioned into smoother ice above. In fact, the highest part of the SGG was a hanging valley free from the dangers of the unstable ice that constituted most of the glacier. This little Shangri-La was not depicted on any map at that time; the result was that the divide for the watershed and hence the international boundary, was actually a mile further north. At the end of this valley ~23,300 ft (7100 m) was a

col, which the team dubbed the Northeast Col because it was not depicted on their map. The col separates the SGG from its cousin; the North Gasherbrum Glacier. The latter flows north for several miles parallel to the base of Broad Peak before making a sharp turn to the east, and on towards the Shaksgam River. The north side of the col is very steep; although probably climbable, there does not appear to be any record of anyone attempting it.

Camp 4 (23,000 ft, 7010 m) was sited within the hanging valley and became the expeditions advanced basecamp. After the grueling struggle through three icefalls, the Italians looked fondly on this camp as an oasis of tranquility. It had taken 15 days to work their way up the SGG, but it was now time to focus their energy on the Northeast Ridge. Of the ridge Maraini writes: “It looked terrifying. It rose abruptly for nearly 3,000 ft (915 m), a series of the steepest, thinnest ridges of snow and ice, with heavy overhanging cornices, interrupted by precipitous buttresses of tawny rocks.” The grind of the route through the SGG was only a warm up for the ridge. It would be another slow process, much of the route would have to be fixed, which meant that a lot of loose snow had to be removed so the team could find secure placements for their anchors. They had anticipated as much while in Italy, hence the supply of 800 pitons that had been manhandle up the Baltoro and SGG.

In order to facility this work on the ridge, Camp 5 was established on a small hump of snow on the lower ridge, it was only 600 ft (180 m) higher than Camp 4, but some considerable distance. Bonatti and Mauri were out in the lead with support from Cassin, Dr. Zeni, DE Francesch and Gobbi. Although progress was slow, the weather was perfect- generally blue skies and light winds. In fact, many members of the expedition complained that it was too hot. The only serious problem was a breakdown in transportation. Not enough food and gear was being carried up the SGG to sustain the thrust. Maraini does not explain why this occurred, possibly too many climbers at Camp 4 and not enough to supplement and or motivate the porters through the tortuous SGG.

After six days of effort on the ridge Bonatti and Mauri decided to make a bid for the summit (July 14). Details of this attempt are lacking, but the net result was that the two men turned around somewhere in the vicinity of 25,300 ft (7710 m). This date also corresponded to a change in the weather, sunny days gave way to periodic snowstorms. The lead climbers spent two days at Camp 5 waiting out the first storm, meanwhile, Cassin decided to recall everyone to BC for some R&R as well as to regroup.

The second push commenced on July 24 but not before it was decided to install another camp as high on the ridge as possible. Gobbi carefully worked out the logistics of men and material to be sent up the SGG, is included some bottles of O<sub>2</sub>. Over the next ten days the plan was executed accordingly, fortunately monsoon moisture only arrived as short impulses, there were no major storms. Camp 6 was placed at 24,600 ft (7500 m) on a small snow ledge. Bonatti and Mauri took up residence while Gobbi and De Francesch, who had helped establish the new camp, returned to Camp 5.

The stage was now set for the second bid for the summit. The morning of August 6<sup>th</sup> was clear but cold as Bonatti and Mauri headed back up the ridge. They made quick progress to their previous high point. Beyond they encountered a narrowing ridge, there was a stretch they nicknamed the Black Blade due to the presence of black boulders. There were gendarmes to circumvent and then up a chimney to the lower of the two summits. Between it and the main summit was a level ridge that contained more dreaded gendarmes. They traversed the ridge by keeping primarily to the west, which overlooks the Baltoro Glacier some 9,000 ft (2745 m) below (they would be looking down the Shining Wall). The final obstacle between the climbers and the first ascent of G-IV was a smooth limestone tower. It took four rope lengths of difficult rock climbing to reach the top; they drove their highest piton in only 20 ft (6 m) below the summit. This was not only the first ascent if had been done without supplemental oxygen, the summit pair decided to forego its use some days before.

It was 12:30 PM when the men had reached the summit, they spent an undisclosed amount of time on its tiny real-estate, just long enough to eat a snack and take the obligatory photos. The wind was increasing and clouds were building as they began their descent. As it turns out the descent was more difficult than the ascent, in part due to the aforementioned winds; in addition, as the clouds shrouded the mountain the visibility decreased as well. The fixed ropes lower down were a major asset. Bonatti and Mauri made Camp 6 late that afternoon. During the night the storm intensified, the climbers feared that the strong winds would blow their tent off the mountain. Although the tent remained affixed to the ridge, next morning the wind had not abated and it was snowing hard.

Departing a 6 AM Bonatti and Mauri spent nearly six hours enroute to Camp 5- visibility was nil; waiting for them were the support team of Gobbi, De Francesch and Dr. Zeni. This group of five pushed on through the storm, finally reaching Camp 1 on the evening of the August 8<sup>th</sup>. The following day the storm cleared and the entire contingent of Italians returned to BC. As it turns out while the summit team was making its attempt, other members of the expedition were not idle. Cassin for example, who was alone at Camp 4 during this period made a reconnaissance of the West Face of G-III, he made it up to ~24,000 ft (7315 m). He commented that the slope was considerably steeper than it looked from lower down. He also noted that this route could be climbed with one camp sited on the lower face. Further down the SGG, Oberto and Maraini left Camp 2 and ventured eastward up a side glacier that is nestled between G-I and G-II. At the top of this body of ice is the so-called Gasherbrum La (~21,360 ft, 6510 m), it's not really a pass, at least not a practical one. It is a 3,700 ft (1130 m) sheer drop down the east side to the Sagan Glacier which is a tributary of the much larger Urdok Glacier.

G-IV had been a tough climb for the Italians. Even though high-altitude mountaineering has evolved considerably from the 1950's, G-IV still remains an elusive peak to climb. The route along the Northeast Ridge has not been repeated. The second attempt on



the mountain was not until 1978; but then word got out and there were a host of expeditions in the 1980's and 1990's. Despite its new found popularity, G-IV denied its summit to but only a handful. In 1986 the Northwest Ridge was climbed making for the second ascent. The Central Rib on the Shining Wall was undertaken by a Korean team in 1997. The Northwest Ridge route was repeated in 1999 and again in 2008.

The most noteworthy attempt (interpret as epic<sup>2</sup>) took place in 1985 when a Pole (Kurtyka) and an Austrian (Schauer) teamed up to climb the Shinning Wall. The climb occurred over 11 days and was of the highest level of difficulty, the rock is nearly featureless and hence it is difficult or impossible to place protection. Despite the difficult climb the two men had completed the wall in six days and were just feet below the shorter North Summit when they were slammed by horrendous weather. They were out of fuel and food and their bebies were extremely uncomfortable. At one point they went four days without any food and three without a drink. In view of these factors the climbers descend the North Ridge without trying to get to the true summit; although, as a consolation, they were the first to climb the Shining Wall.

**Rakaposhi:** 25,550 ft, 7788 m

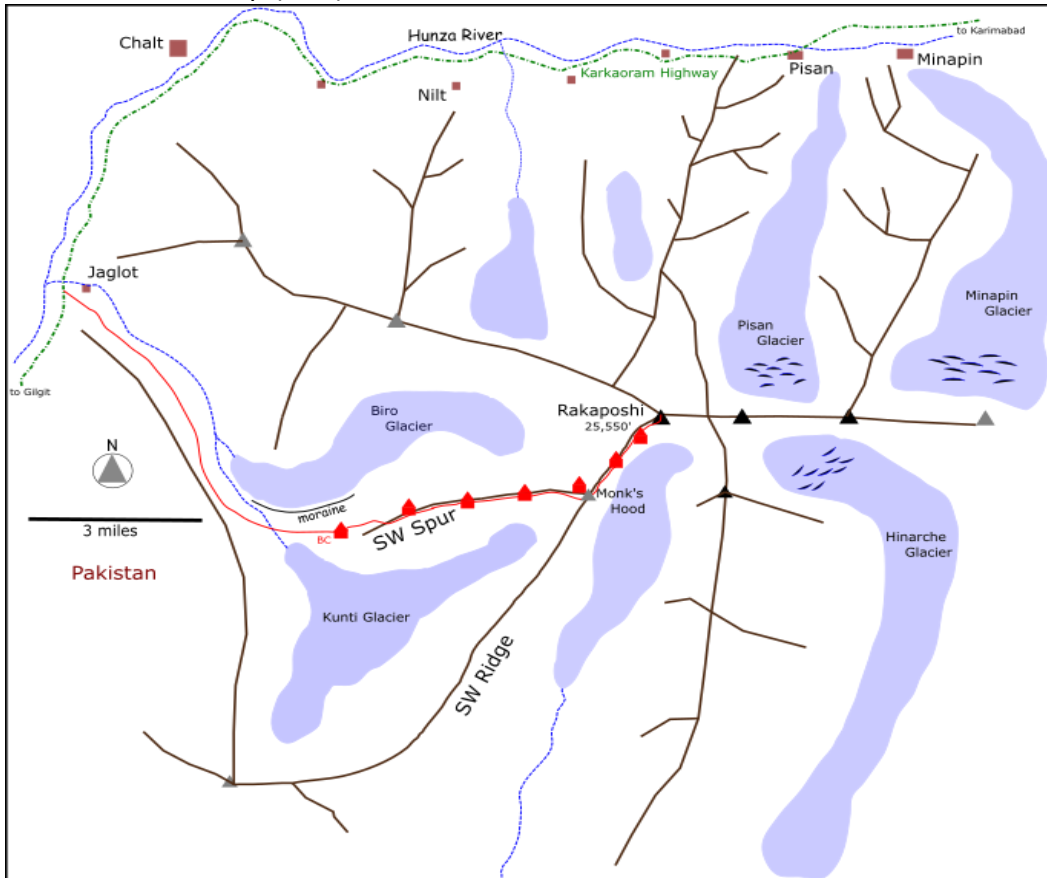
Anyone who has ever traveled up the Hunza Valley will be familiar with the bulk of Rakaposhi that looms over the western end of that valley. Highly visible from the important tourist mecca of Karimabad some 16 miles (26 km) to the northwest; the most impressive view however is from the stretch of the Karakoram Highway that passes along the northern base of the mountain. I recall in the summer of 1986 getting out of the van near the village of Ghulmet and cranking by neck back to get a view of the north side. This is one of the greatest mountain views you can experience from the comfort of a vehicle. It is seven miles (11 km) from the highway to the summit with a height differential on the order of 19,200 ft (5850 m).

Prior to the summer of 1958 there had been four attempts on the mountain; this is surprisingly few consider the ease of access and high visibility of the peak. Most of these efforts began on the west side with attempts to push up the Southwest Spur or West Ridge. Harold Tilman was a member of the 1947 four-man German-British expedition that tried both aforementioned routes without getting above 19,000 ft (5790 m). The most recent attempt before 1958 had occurred two years before and was led by Brit, Tony Banks; this team climbed the Southwest Spur and over a prominent feature known as the Monk's Hood. The Hunza porters were not up to the task of load carrying at high altitude, so the climbers shouldered all of the loads above 19,000 ft (5790 m). But in the end the expedition ran out of steam at 23,500 ft. (7160 m).

The team that attempted Rakaposhi in 1958 went by the title of: British-Pakistani Forces Himalayan Expedition, 1958. It should be explained that the term 'forces' in the title refers to the fact that the members were all military men in service with either the Pakistani Army or various branches of the British military. There were seven Brits and three Pakistanis, one of which was a surveyor. Mike Banks was back as leader of this effort. The plan was to try the Southwest Spur route, but unlike 1956, established their highest camp in the vicinity of 24,000 ft (7315 m). In addition, they would fix ropes on the technical spots on the lower half of the route so the camps could be well stocked by the porters and climbers. This was a bit of insurance against protracted storms. In this vein they ended up using about 4,000 ft (1220 m) of rope along the ridge. Once they were well established on top of the Monk's Hood (21,000ft, 6400 m), they would make a rush for the summit.

The team trekked into what would become the site of their basecamp (14,000 ft, 4270 m) on May 22. During the first several weeks of the climb there were intermittent snowstorms followed by several days of clear skies. Avalanches were a threat; one large event below Camp 1 nearly took out two Pakistani army captains and six Hunza porters, they were carried some 1,500 ft (460 m) down the

gully, but luckily no one was injured. The build-up of the lower camps proceeded as planned. The slopes up the Monk's Hood were adorned with fixed ropes; fortunately for the expedition, a contingent of porters were will to make carries to the top of this feature. Camp 4 was established on top of the Monk's Hood and became their advanced basecamp (ABC).



In describing the route between Camp 4 and the summit, Bank's says that there were "...three large steps, each of them about 1,500 ft (460 m);" Camp 5 was located at 23,000 ft (7010 m) and Camp 6 was on top of the last step in the chain, around 24,000 ft (7315 m). Banks and Tom Patey were the two selected to make the first summit bid. On the morning of June 25<sup>th</sup>, they were ready to

make the attempt, however, there was a bit of an issue; before they went outside the tent they could hear wind driven snow being slammed into the sides of the canvas. Not exactly ideal conditions to proceed to over 25,000 ft (7620 m). Nevertheless, they decided to give it a go anyway.

They donned all of their clothing, which for Banks included a down climbing suit, and proceeded up the slope. It was slow going- the deep snow and wind took their toll. Banks estimates that they were on a 300 ft (90 m) per hour pace, fortunately, they only had a little under 1,600 ft (490 m) to ascend. They plodded onward and upward. In the early afternoon they came to a section of the ridge which "...curled up to the summit." They were getting close; at 1:45 PM they stood on top Rakaposhi in the midst of swirling clouds of snow. They could see parts of Hunza below through the rift in the clouds. The two men did not linger on the summit in such conditions, Patey was worried about frostbite on his hands. They returned to their high camp without difficulty.

The next morning the storm was as intense as it had been the previous day; the climbers started the descent from Camp 6 anyway. At one point they were disoriented due to the low visibility, however, just about then the clouds lifted and they were able to establish their position. A few hours later the summit duo were reunited with their teammates and Camp 4. Two days later the entire team was safely back at BC; where they celebrated their success with a banquet.

Since the success of the Brits the mountain has been climbed a number of times, but it is certainly not a popular climb. The next attempt was in 1964 by an Irish expedition; their high point was around 20,000 ft (6095 m). The Germans tried their luck on the North Ridge in 1971 but did not make it very high. They were back on the North Ridge in 1973; as it turned out they gave-up around ~21,300 ft (6492 m). 1979 was a popular summer on the mountain with three expeditions. The Southwest and Northwest

Ridges were climbed, and the Japanese were able to surmount the numerous difficulties on the North Ridge and reach the top. Most of the climbing over the decades has been on the north or west, with little activity in the south or east.

**Haramosh:** 24,307 ft, 7409 m

Lying eight miles (13 km) from the Gilgit-Skardu Road, Haramosh is certainly not a remote peak. However, like Rakaposhi, prior to the summer of 1958 there had been only three attempts. The first was in 1947 by a Swiss team. They tried their luck on the Northeast Ridge but failed to summit. The German's made an attempt in 1955, followed in 1957 by a small British effort. The Brits also tried to work their way along the NE Ridge, in the end, two of the four climbers died in the attempt.

The 1958 expedition consisted of eight members all from Austria. However, only five were climbers, the other three were scientist (geographer, ethnographer, zoologist) who conducted studies in the general area but did not take part in the climb. Of the climbers there were all laymen who enjoyed mountaineering as a sport. Once the team had arrived in Gilgit they were able to higher six high-altitude porters from Hunza. The plan was to approach the mountain from the west, trek up the valley occupied by the Mani Glacier to its head. Above the Mani Glacier on the east is a steep rock and snow ridge, the lowest point on this ridge is the Haramosh La. To the east-northeast of the pass lies nine-mile long Haramosh Glacier which flows into the massive Chogo Lungma Glacier. From the pass the team would then proceed south and then east to the flank of Mani Peak, above which they would be able to gain access to the East Ridge, which leads to the summit.

The Austrians were in the field earlier than most expeditions; they started their trek from the Gilgit-Skardu road on April 27<sup>th</sup>. The expedition picked up 125 local porters and 12 donkeys to transport their gear. Two days in from the road, in the village of Iskere, trouble began; in this case from an unlikely source. The local clairvoyant

(‘witch-doctor’ according to Roiss who wrote the expedition narrative), had had a communication from the next world regarding the expedition: in short, the local demons and spirits were annoyed; as a result, two Austrians, three high-altitude porters (from Hunza) would die and all of the local porters would be cursed! The Austrians thought nothing of the gibberish of this clairvoyant, however, the porters, all of them, took it seriously. Virtually all but a handful of porters refused to continue with the expedition. Even the high-altitude porters were spooked by the clairvoyant, but stayed with the program, at least for the time being.

As a result of the defection of the porters, ferrying the loads the remaining distance to basecamp was the teams’ number one priority. An intermediate camp (Forest Camp) was established adjacent to a small but picturesque lake (Kutwal Sar, ~10,900 ft, 3322 m), situation on the western margin of the Mani Glacier. However, the team wanted their basecamp to be located at the foot of the slopes that lead up to Haramosh La, several miles further up the valley. Although not very far from Forest Camp, the chosen site required three hours of trekking further up the valley. At this early date there was still considerable snow on the ground and the route along the margin of the glacier was menaced by avalanches from the adjacent slope to the west. It took 14 additional days to carrying all the gear to the site chosen as basecamp (11,150 ft, 3400 m). By now it was May 16<sup>th</sup>, amazingly it had taken 20 days to cover 16 miles (26 km) from the road!

By this juncture one would hope that the climbers could put the past behind them and start the mountaineering program minus the drama, it was not to be. Misfortune continued. As the team ferried loads up the steep slope to Haramosh La (16,830 ft, 5130 m) Dr. Hammerschlag slipped and then slid 100 ft (30 m) down a couloir. He emerged with several broken ribs. The ramifications of this incident were much larger than one might imagine at face value. The doctor was out of commission as a climber for some time, but in the wider scope of things it certainly appeared to the high-altitude

porters, that the clairvoyants' proclamations were coming true. They refused to budge even with the prodding of the Pakistani liaison officer, who the men from Hunza now began to despise.

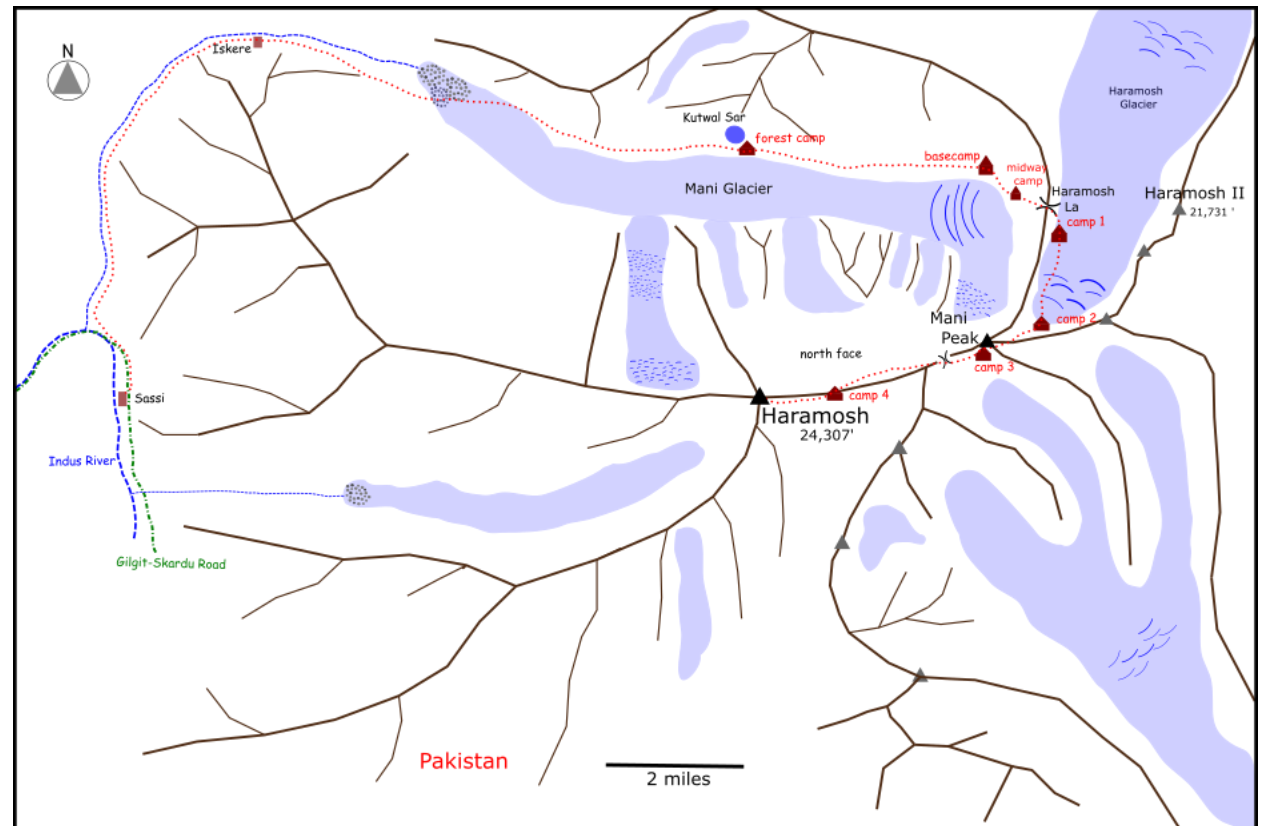
The only solution was to release the high-altitude porters and attempt to secure a new batch, hopefully, men who were willing to work. This however would take time. One of the scientists, a Dr. Mandl and the liaison officer, Jameel-ur-Rahman, proceeded to Hunza and were eventually able to recruit six new men. In the end the new high-altitude porters were pretty useless, more of a hindrance than a help; complaining of sickness when possible, stealing from basecamp stores, etc.

Meanwhile Roiss and Mandl were able to reach Haramosh La on June 15<sup>th</sup> and established Camp 1. Initially they were living in a snow cave due to the strong winds that raked the site, but later, tents were erected. The two lead climbers spent the next week attempting to work their way through the icefall that constitutes the upper Haramosh Glacier. They hoped to gain the slopes of Mani Peak (actually there are four 'summits' the highest is 21,928 ft, 6684 m), which in turn would give access to the East Ridge of Haramosh. It was not until June 24<sup>th</sup> that they were able to find the route through the icefall and onto the eastern slopes of Mani Peak; where Camp 2 (18,370 ft, 5600 m) was erected.

The next section of the route skirted the flanks of Mani Peak on the south. There were two attempts to traverse this section that failed due to the steepness and icy conditions of the slope. In addition, it was a considerable distance from Camp 2 to the flank, which did not allow a lot of time for the lead climbers to deal with the slope, what they began to call the 'ice wall',

before heading back to camp. Hence, it was decided to site a temporary Camp 3 at the start of this troublesome slope. It took three days to fix ropes up the ice wall. Regarding the conditions, Roiss says; "The ice was fantastically tough water-ice, almost vertical." The final obstacle that had to be dealt with was a large cornice, they ended up tunneling through it so they could stand atop Mani Peak II.

Now that the ice wall had been climbed, they decided to relocate Camp 3. It was moved from the base of the wall to a depression situated between the four Mani Peaks. This site provided protection from strong, winds but on sunny days it turned into an oven. From the top of Mani Peak IV they were able to look up the East Ridge to the summit of Haramosh. It was a long way to the top; over 3,000 ft (915 m) of elevation gain over a distance of three and



half miles. There were a number of 'steps' that would have to be negotiated as well, which meant that there would be some sections of the descent which would require the summit team to climb back up. Hence the 3,000 ft height differential between Camp 3 and the summit was a gross underestimation due to the roller-coaster nature of the ridge.

Plans were made for the summit push; they hoped to make it a three-day affair from Camp 3. To accomplish this the lead climbers would take a tent and other essentials in order to establish a temporary camp along the ridge, enough food and gear to spend two nights. They would attempt the summit on day two and then spend a second night at the ridge camp. The plan was sound but the weather did not cooperate. The night before Roiss and Mandl were to leave on their summit attempt, the winds increased and it started to snow. The next morning, they not only called off the summit attempt but decided to descend to Camp 2 and wait out the storm. When they arrived at Camp 2, the entrance to the snowcaves were buried so they proceeded to Camp 1 where the remainder of the expedition personnel were in residence. They waited for an improvement in the weather... and they waited; in the end they spent two weeks not so patiently waiting for the storm to lose its fury. During that time they were able to tune into Radio Pakistan and All-India Radio weather updates; there were gleamers of hope during those two weeks, but the summit of Haramosh seemed to be fading.

And then...the sun came out again, it was July 31<sup>st</sup> and it was the first time they had seen the sun in 16 days. They did not waste any time in reorganizing an effort to push back up the route; 3 AM the next morning it was all hands-on deck, the five Austrians, the five remaining porters and even the liaison officer departed Camp 1. The snow was deep, very deep, it took eight hours for this large contingent of men to reach Camp 2, or at least the site of Camp 2. The snowcaves were no longer inhabitable, so they pitched three tents instead. The next morning the team, minus the liaison officer and two porters, who were suffering from the altitude, continued on

to Camp 3. They made Camp 3 that afternoon; however, there was work to be done; they had to dig the camp out from feet of fresh snow, this was followed by the chore of hauling, by rope, nine loads up the 700 ft (213 m) wall of ice. This as the reader can imagine, was exhausting work at 21,000 ft (6400 m).

The following morning four Austrians departed Camp 3 to commence the much-anticipated climb along the East Ridge. Two members, Dr. Hammerschlag and Pauer however, were not feeling well, but agreed to support the team by carrying loads as far as they could. Dr. Hammerschlag made it to the crest of Mani IV before turning back. This left Pauer, Mandl and Roiss, the last two men being out in front for most of the expedition. It was a long descent of some 1,800 ft (550 m) from where they were standing to the col on the North Ridge. They would have to climb this on the return journey. The route along the ridge turned out to be exactly what they had envisioned from afar. A series of steps- ups and down, interspersed with a few narrow sections which were of course highly corniced. They erected a tent in the second of two cols on the ridge that afternoon and called it Camp 4.

The trio were on the move at 1 AM next morning, Pauer's health had fortunately improved. Regarding the route Roiss wrote: "The cold positively hurt. We had to lose about 700 ft (213 m) in height along an ice trough which led to the base of Haramosh's summit-structure." By 5 AM they had arrived at the base of the summit pyramid; however, all the while they had been traversing the ridge, they had gained little in elevation, the summit was still over 3,000 ft (914 m) above them. The three climbers plodded up...and up. The wind increased, clouds encased the surrounding peaks, and yet they found the inner drive to keep plodding. Fortunately, the final stretch to the summit was not technical, basically a long high-altitude trek. Another positive was that the higher they climbed the firmer the snow became. Regarding this final push Roiss comments: "At times we dared only to crawl forward, for fear of being blown away into the abyss. It wasn't only the gale, though, which made us crawl; we were

utterly exhausted.” Nevertheless, the trio arrived at the summit at 2 PM, it had been a 13-hour effort to get here from their highest camp.

They spent 15 minutes on the summit, at one point the clouds which had been swirling around them, briefly dissipated, allowing the men to snap a few photographs of their surroundings. They left a small wooden cross as a memorial to the two British climbers who had died on the mountain the previous summer. They also deposited a small metal canister containing the particulars of their own expedition.

As they started to descend the storm intensified; snow, wind and low visibility. At times they were able to distinguish their ascending tracks, but for most of the decent they could not see more than a few yards. Around 6 PM they had reached the great plateau that connected the East Ridge to the summit pyramid. They now had to climb an agonizing 700 ft (213 m) up to the tent. “It was sheer agony. We could no longer stand, but crawled forward on our knees or bellies; frequently we just lay there, utterly exhausted.” But all three climbers did make it to the tent sometime around 8 PM; it had been a 19-hour ordeal and now all they could think about doing was rehydrating. “We drank endless cups of tea and fruit-juice, we drank until our stomachs ached, but our thirst was unquenchable.”

When they awoke early the next morning the storm was just as intense as it had been the previous evening. The trio, understandably wanted to lazy around and gain more strength before renewing the descent. However, they realized that they better continue the descent before the accumulation of snow got even deeper; in their weaken state they knew that even now it would be a test of stamina and mental fortitude.

They were back on their feet by 5 AM. Like the ascent-descent the previous day, the descent from Camp 4 was long, very long. They had to ascend a number of rock sections which afterwards required a lengthy rest. Around 11 AM they were in the col at the base of Mani Peak IV, they knew that they were not far from Camp 3. The reader may recall that two days previous they had to descend 1,800 ft (550

m) from the summit of Mani Peak IV; this meant that now they had to ascend that same elevation. Camp 3 was situated in a basin some 700 ft (213 m) below the summit. The trio crawled the last section up to Mani Peak IV and then just laid in the snow.

They also crawled down the slope to Camp 3; when they arrived, they found that the camp was uninhabited. They dove into a tent and started to rehydrate, food however was out of the question, they could not stomach it. “Our night at Camp III was as uncomfortable as it could be”, wrote Roiss. To add to their misery, they had to go outside several times during that night to clear snow off of the tent. The next morning there was no change in the status of the storm. They packed up as much gear from the camp as they could carry, for this did appear to be the last time anyone from the expedition would be at this site. They each carried two rucksacks, the second one slung over their chests as they made the ascent to Mani Peak II. The ropes down the ice wall were buried, so they had to spend time clearing away the snow. They repelled in whiteout conditions, tittering in the wind. All three men arrived at the base of the wall intact; they decided to leave some of rucksacks here, hopefully to be retrieved at a later date.

From this juncture the route to Camp 2 was along the East Ridge of Mani Peak; they spent hours on this section, they had to continually stop and waiting for a rift in the clouds in order to get their bearing. When they got to the site of Camp 2, not only was there no one there, but the camp had disappeared. So, it was on to Camp 1 down at Haramosh La. When they got down close to where they though the camp was located, they could not find it in the midst of the storm and dwindling light. They crossed and recrossed their tracks, it looked like they were going to have to bivy that night after all. But at last, they spotted the tents and were once again reunited with the rest of the expedition.

The storm persisted for two more days, meanwhile the summit team occupied the time by sleeping, rehydrating, and eating. On August 9<sup>th</sup> and again on the 10<sup>th</sup> a number of expedition personnel

attempted to ascend to Camp 2 and retrieve what gear was there, but the weather prevented them from reaching the camp. It was not until the 18<sup>th</sup> that they were able to clear Camp 2 and retrieve the loads which had been dropped at the base of the ice wall. The Austrians were back in Gilgit on the 25<sup>th</sup>. The expedition had been in the field from April 27<sup>th</sup> through August 23<sup>rd</sup>: a total of 119 days!

Reading this account, I was struck with the fact that the team consisted of five men, none of which were 'professional' mountaineers, or had any prior big mountain experience. In addition, since the porters were useless, they had to literally carried their own weight to the summit. It was a wise decision to make Camp 1 into a forward sited 'basecamp' where they amassed all of their supplies, even if all 40 loads had to be carried up the steep 4,600 ft (1400 m) slope to Haramosh La. Their determination in the face of multiple adversities, is complementary.

The next effort to climb Haramosh did not occur until 1978 when a team ventured up the West Ridge. Another team came back in 1988 and were able to find a line up the Southwest Face. Looking back over the intervening decades it is readily apparent that Haramosh is not a frequently climbed peak, probably due to the fact that there are just too many neighboring peaks that entice mountaineers.

**Minapin:** (Diran) 23,808 ft, 7257 m

Located eight and half miles east of the summit of Rakaposhi lies a peak historical known as Minapin, but which is today called Diran. The two mountains are connected by a high ridge, no lower than 18,000 ft (5486 m) that runs on an east-west axis. A German-Austrian expedition in 1954 made a reconnaissance up the Minapin Glacier on the north, but it was not until the 1958 British expedition that an attempt was made to reach the summit.

There was still a significant amount of snow lying on the ground below 12,000 ft (3660 m) when the small expedition of five

Brits commenced its assault during the first half of May. Nevertheless, after a strike by the porters, and the recruitment of 50 new ones, the team proceeded in establishing the lower camps. Basecamp was at 12,250 ft (3735 m) on the Minapin Glacier, Camp 1 on the upper glacier (~15,000 ft, 4575 m). There was some discussion at this juncture of trying their luck on the North Ridge but the team dismissed it as being too dangerous and difficult; much of the ridge was festooned with cornices, and the couloirs leading up to the ridge were avalanche prone. Hence, they determined to put their effort into a line up the North Face which would give them access to the West Ridge which in turn could be followed to the summit.

The lead climbers pushed up onto the face and dug a snowcave which was christened as Camp 2 (~17,000 ft, 5180 m). Despite the intermittent snowstorms, the climb was proceeding quite well. By the third week of June Ted Warr and Dr. Chris Hoyte, after negotiating a steep field of crevasses that form the headwall of the Minapin Glacier, had reached a low spot on the West Ridge (they call it a col), where they erected a tent for Camp 3 (19,200 ft, 5850 m). From here the route was a fairly non-technical trek up the ridge, although, due to the distance, another intervening camp was needed. Henceforth Camp 4 (21,500 ft, 6555 m) was established on July 6<sup>th</sup>, two-thirds the way along the ridge; it looked as though Minapin was about to receive its first ascent. July 7<sup>th</sup> was to be summit day for Dr. Hoyte and Warr. They started the final push in strong winds but otherwise clear blue skies. Evidently the team had no radios so no one at the lower camps that evening knew whether or not the lead climbers had reached the summit.

The following day, which was sunny and calm, Sharpley and Kemp who had been at Camp 3, carried additional supplies to Camp 4 arriving about noon. They noticed that the tent had not been occupied and when they looked up the ridge, there was no sign of their comrades. On the 9<sup>th</sup> it was obvious that something serious had occurred to Warr and Dr. Hoyte, so Sharpley and Kemp followed the tracks of Warr and Dr. Hoyte up the ridge from Camp 4 until the

snow became unstable. They could only conclude that the summit team had met with disaster, most likely sometime on the 7<sup>th</sup>. There were no indications of what might have happened to them, they simply disappeared. The remaining Brits aborted the climb.

Thus were the fortunes of six expeditions in the summer of 1958. Success came at a high price.

<u>Mountain</u>	<u>Date of first ascent (1958)</u>
Rakaposhi	June 25
Gasherbrum I	July 5
Chogolisa NE	August 4
Haramosh	August 4
Gasherbrum IV	August 6

#### **Weather Analyses-** For what it is worth!

Since the Japanese, Italian and Austrian expeditions were on their respective mountains over much of the same period of time, and do to the fact that the three mountains are relatively close to each other, it is constructive to compare the weather from one mountain to the next as report in each report. This is especially true during periods of stormy weather. The Austrians for example, report stormy weather from July 16-30 where they were confined to Camp 1 on the Haramosh La. They were hit by another storm on August 4-9, during their summit push. There is a period from August 11-17 which from the narrative by Roiss appears also to be stormy, but not conclusive. So, how do these dates correspond with Japanese and Italian accounts?

The Italians over on G-IV some 99 miles (160 km) to the east-southeast of Haramosh note a stormy period from July 14-23, during this time everyone returned to BC. They also record the storm of August 6-8 when they were making their own summit push, but do not mention the storm starting until the afternoon of the 6<sup>th</sup> not the afternoon of the 4<sup>th</sup> as report by the Austrians. In fact, the Italians

report that it was clear but cold on August 4<sup>th</sup> and 5<sup>th</sup>. In addition, the Italians do not mention anything regarding the weather during the second week of August at which time they were at BC and starting their outbound trek. The Japanese report intermittent storms during the second half of July and the start of the most intense storm they witnessed on the evening of August 6. This event lasted for two days. They also do not report any significant weather in mid-August. However, they were also on their outbound trek so the writer of their report may have glossed over any weather.

There is considerable agreement on weather events amongst these three expeditions. The only discrepancy is the August 4 through 6<sup>th</sup> timeframe; it was very stormy on Haramosh but over on the southeastern Baltoro, clear and cold until the afternoon of the 6<sup>th</sup>. Weather operates on various scales, and in a mountainous environment weather is often at its extreme. I was able to reference some upper atmospheric data for those dates (NCEP Reanalysis dataset) and from that found that a disturbance in the westerly flow moved over the Karakoram on August 4<sup>th</sup>- windspeeds would have increased significantly. This system was couple with an influx of monsoon moisture from the south-southeast which then produced the blizzards recorded by the various expeditions. The only surprising fact is that it commenced on the afternoon of the 4<sup>th</sup> on Haramosh but took nearly 48 hours to develop over the Baltoro peaks only 99 miles (160 km) away. But such is the nature of mountain weather!

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