

High Stakes

by Harish Kapadia

It is commonly believed that prior to the beginning of the conflict in 1984, the Siachen Glacier had been lying in quiet isolation. Given the inhospitable climate of this region, such a belief is understandable, but it is one that is far from true. The glacier has had visitors for a long time, both local and foreign.

In the valleys to the west of the glacier live the Baltis, who have an interesting story to tell about the Siachen Glacier, which they know as Saichar Ghainri. The story goes that there used to be a small Yarkandi village at the entrance of the Teram Shehr Glacier (*see map on pg 24*), where the Yarkandis met the Baltis for trade. (The Workman couple—*more on them below*—found the walls of such a settlement in 1912). It so happened that once some of the Yarkandis descended the Ghyari nala and abducted a Balti woman to their glacier village. Desiring revenge, the Baltis sought the help of a famous mullah. Telling them to place it on the Bilafond la (pass), the mullah gave them a *tawiz* (amulet) whose power would punish the Yarkandis. His instructions to the Balti villagers were to return via the Nubra valley after placing the *tawiz*. But the latter disregarded the mullah's instructions and returned the way they had come. Soon a great storm hit the Siachen Glacier and caused great destruction. It is believed the storm would have destroyed everything in the glacier had the mullah's directions been followed completely.

As it was, the destruction was not total and the wild roses that grow in plenty near the snout of the glacier and in the lower valleys were spared. It is these roses which give the Siachen Glacier its name: Siachen—the Place of Roses (in the Balti language, "*sia*" is "rose" and "*chen*" is "place of").

Beginning with W. Moorcroft, who passed near the glacier's snout in 1821, the existence, length and location of the Siachen Glacier was a matter of much speculation among Western explorers during the colonial period. In 1848, Henry Starchy became the first Westerner to discover "Saichar Ghainri" ("*ghainri*" is "glacier" in Balti); he ascended it for two miles from its snout in the Nubra valley. E.C. Ryall of the Survey of India sketched the lower part of the glacier in 1861, and ascribed to it a length of 16 miles.

During his famous second Karakoram journey in 1889, Sir Francis Younghusband (then Colonel Younghusband) approached the area from the Urdok Valley. He was seeking a crossing into the Subcontinent from Central Asia. Following a side valley of the Urdok Glacier, he reached the Turkestan la. Looking down at the Siachen Glacier from the north he felt this pass, and not Bilafond la as it was then believed, was the main axis of the Karakoram. In other words, Younghusband thought that the axis along the Turkestan la (along with the nearby Indira Col) was what separated South Asia from Central Asia.

Defining the actual axis thus meant that several square kilometres of territory would be added to British India at the expense of Chinese Turkestan (now Xinjiang province). Younghusband's explorer's instincts were correct, but since this was still uncharted terrain he could not be sure.

Younghusband's belief was confirmed in 1909 by T.G. Longstaff, who, along with Arthur Neve, and Lieutenant Slingsby, was the first to traverse this great glacier. At first, they crossed over the Bilafond la (or, Saltoro pass, as Longstaff called it then) and named the glacier in the east Teram Shehr (Destroyed City) in keeping with the legend of the mullah which was narrated to them by their Balti porters. The peaks there were named the Teram Kangri group. They then retreated by the same route and went down the valley and approached the Siachen Glacier via the Nubra valley. Longstaff climbed up from the Siachen snout in the south and observed the same peaks as he had identified from the Bilafond la. This was conclusive proof of the length of the Siachen Glacier and the actual location of the Turkestan la—an important discovery as it established the true dimensions of the Karakoram. What he wrote in his book *This My Voyage* is quoted often:

Younghusband was a true prophet. Col Burrard of the Survey had suspected the truth. The avalanche-swept pass, whose foot Younghusband had reached 20 years before, was on the main axis of the Karakoram range which thus lay miles farther north than had been believed. We had stolen some 500 sq miles from the Yarkand river systems of Chinese Turkestan, and joined it to the waters of the Indus and the Kingdom of Kashmir.

The next important explorers to visit the Siachen Glacier were the famous Workman couple. Fanny Bullock-Workman and William Hunter Workman were Americans who had a special interest in the exploration of the Karakoram, and they focused their attention on the Siachen Glacier in the years 1911 and 1912. Entering via the Bilafond la, the Workmans camped on the glacier with a large entourage of porters and two Alpine guides. This group spent more than two months on the glacier and they climbed many peaks and visited almost all the corners of the upper Siachen. Grant Peterkin, a surveyor attached to this expedition, surveyed the glacier thoroughly and named a few peaks, including Teram Kangri, Apsarasas and Ghent. Names like Sia la, Junction Peak, Hawk, Tawiz and a few others were given by this expedition. It was the Workman expedition which visited and named Indira Col (col=lowest point on a ridge) after the Hindu goddess, Laxmi, one of whose many names is Indira. (The general supposition that this col was christened after Indira Gandhi, prime minister when Indian troops captured the position in 1984, is erroneous.)

In 1929, Dr Ph. C. Visser of the Netherlands, on his fourth trip to the Karakoram, explored the two Terong glaciers and the Shelkar Chorten glacier which were unknown till then. In his group were Rudolf Wyss and Khan Sahib Afraz Gul of the Survey of India, who stayed in the Terong Valley and completed surveying and naming the main peaks in the lower part of this great glacier. In the same year, the Duke of Spoleto expedition (Italian) crossed the Karakoram by the Muztagh pass and reached the Turkestan la from the north. They descended from the Turkestan la after discovering the Staghar and Singhi glaciers.

The survey and exploration of the Siachen was completed a year later by another Italian, Giotto Dainelli. Recounting his journey upto the Teram Shehr glacier junction through the Nubra valley in the *Himalayan Journal*, Dainelle wrote:

...thus reaching the Siachen tongue with all my baggage, a caravan of seventy coolies and six and a half tons of food for the men, carried by an additional caravan of ponies and supplementary coolies. On the 9th of June—exactly two months after my departure from Florence—I was heading for my first depot up the glacier. I hope my English colleagues will appreciate this rapidity of execution, which I consider a record! (Compare this with present timings—one can reach the glacier's snout within three days from Delhi without taking even a single step on foot.)

Dainelli, with a Miss Kalau as his only companion, stayed at the Teram Shehr junction and carried out various geological surveys. He could not return by the same route due to flooding of the Nubra valley in the lower reaches, so he crossed over to the Rimo glacier in the east by a 6200 m pass which he named Col Italia.

World War II, and the turmoil of Indian Independence that followed, put an end to all activities in this area for a few decades. With the India-China War of 1962, the entire area became 'restricted'. Restricted even for Indian climbers, although it is known that some parties from Indian security agencies did visit Bilafond la.

The ambiguity about the exact delineation of the border is behind today's conflict. The 1949 India-Pakistan agreement demarcated the cease-fire line as extending up to the point known as NJ 9842 near the Shyok River, after which the line moved "thence north to the glaciers", leaving the boundary vague (*see preceding story for details*).

The one opportunity to do away with this uncertainty came during the 1972 Shimla talks. It can be safely said that there may not have been any fighting on the Siachen if, during those talks, Indira Gandhi had pressured the Pakistani Prime Minister Zulfikar Ali Bhutto to agree to demarcate the borders along the Saltoro Ridge, as is

the situation today. A desperate Bhutto had pleaded with the Indian prime minister that he be trusted to do this at a later date, as he did not want to antagonise his generals. "*Aap mujhpe bharosa kijiye* (Trust me)," he is reported to have said.

Even as the ambiguity about the line of control remained, however, between 1972 and 1983 Pakistan promoted and permitted many foreign expeditions on the Siachen Glacier. These expeditions, accompanied by Pakistani army liaison officers, generally crossed over the Gyong la, Bilafond la or Sia la to enter the glacier, and climbed many peaks on the

glacier. These climbs set the ground for Pakistan's claim to the glacier. It has to be noted here that, apart from the 'political statement' these expeditions made, the teams were able to make explorations and climbs of the highest order.

During this same period, the Indian army also sent three expeditions to the glacier. Two of these were led by well-known climber Col N. Kumar; these expeditions reached Indira Col and climbed several other peaks, including Saltoro Kangri and Teram Kangri. The fact that these expeditions (1978, 1980 and 1981) took place was made public only in 1983. The Indian government made an attempt to pass them off as mountaineering ventures but their actual intentions were pretty obvious.

However, maps soon began to be published in Europe showing the extended line of control joining the Karakoram Pass in the east following the Pakistani claim. These maps conceded the entire Siachen Glacier to Pakistan, and showed Pakistan and China sharing a long common border to the east of Siachen.

Then in 1984, Pakistan gave permission to a Japanese expedition to attempt Rimo, a peak located in a side valley east of the Siachen and overlooking parts of Aksai Chin. Such an expedition would have linked Pakistan-controlled Kashmir with China, along the historic trade route that leads to Chinese Turkestan over the Karakoram Pass. The Indian army decided to take action to prevent the expedition from proceeding, and thus began the Siachen imbroglio.

Soon after India occupied positions on the glacier, the first Indian mountaineering expedition arrived in the Siachen to counter the policy adopted by Pakistan in the past. The next year, in 1985, an Indo-British expedition (led by this writer with Dave Wilkinson) was given permission to climb Rimo peak, approaching it from the Nubra valley in India. Their success and the international publicity generated created awareness that the area was controlled by India. An American team followed in 1986 and reached the Indira Col.

(There was one more chance for peace over the Siachen Glacier when Gen Zia-ul Haq and Rajiv Gandhi agreed to a cease-fire. Tensions on the glacier eased but not so domestic political tensions, particularly in Pakistan. Benazir Bhutto, then in the opposition, marched the streets with bangles on a plate for Pakistani generals. "Wear these bangles if you cannot fight on the Siachen," she taunted. Unfortunately for peace in Siachen, Gen Zia was killed in a plane crash in 1988, Benazir came to power the next year and hostilities resumed on the glacier. One of her first official acts was to visit the Pakistani side near the Siachen Glacier. Peace has had no chance after that.)

Mountaineering on the main glacier ceased until 1996, when an Indian team from Bombay, again led by myself, arrived on the glacier with full clearance from the Indian government. The expedition first climbed in the Terong Valley but was not allowed to proceed to the upper glacier. Someone in the army hierarchy had decided not to allow the team to go further. This reflected rather poorly on the Indian army. However, after protests and a critical report, the situation was rectified within a year and it was decided to allow Indian mountaineers on the glacier.

In 1997, an Indian women's team (led by Bachendri Pal, the first Indian woman to climb Everest) traversed the glacier and stood on India Saddle, a point some seconds north

of Indira Col. And earlier this year, our Bombay team returned to the glacier to complete their unfinished venture. This expedition reached Indira Col West (5840 m), India Saddle (6000 m), Turkestan La (5810 m), and made the first ascent of a peak on the Teram Shehr Plateau, Bhujang (6560 m). The team also named some high peaks on the Teram Shehr Plateau, including one in honour of Khan Sahib Afraz Gul, the Indian surveyor mentioned above. Indian climbers had finally arrived on the glacier.

Rare rose

For the past 14 years, soldiers of the Indian Army have been in the Siachen. The army lives on the glacier under a severe resource crunch. Supplies are taken up by helicopter but there is always a shortage of air transport, sometimes even to bring down the injured. Under such circumstances it is hardly surprising that the glacier is under severe environmental strain.

Much of the garbage is put into crevasses or dumped on rocks and snow. In winter, all this is covered under a thick layer of snow and the entire area appears like a beautiful white sheet. But come summer, all the cans, drums and human waste come to the surface and litter is seen everywhere. The worst offenders are the tetrapacks in which fruit juices are delivered on the glacier. These aluminium packs, which cannot be burnt or destroyed, line the routes which are traversed by the army and are a major eye-sore. The army cannot burn the garbage on the glacier, and neither can it destroy it there, much less bring it down.

The weather pattern in the entire area of Ladakh and the East Karakoram is also changing; whether it has anything to do with the ongoing war in Siachen cannot be ascertained yet. The East Karakoram is no longer a rain shadow area and receives several inches of rainfall. The Siachen Glacier snout itself has receded by about 800 metres in the last 13 years. The glacier looked barren and without snow cover during our 1998 expedition. The Terong glaciers, particularly the North Terong Glacier seemed to be receding fast and most of the ice-penitents and lakes had disappeared during the last decade. Icefalls in the Safina Valley (which we had crossed in 1985) and the Shelkar Chorten Valley seemed more broken and difficult.

The rose plants, too, have suffered. Many were cut and their stems used as decorative pieces and even as tent-pegs. After I drew the army's attention to this destruction, the military authorities gave assurances that the rose plants would henceforth be declared a rare species and no harm would be done to them. When this happens it could set the stage for full environmental protection of the glacier.

Some serious thinking about the environmental concerns on the Siachen Glacier needs to be done. The war has taken a heavy toll of men and material on both sides. It is an impasse in which no side seems to be gaining. Soldiers face each other, both sides have artillery (though the rarefied atmosphere makes nonsense of ballistic data), millions of rupees are spent daily to maintain these forces where casualties due to the altitude and cold are nine times higher than those due to combat (an estimated USD 2 million is spent daily by the two armies on the glacier).

Perhaps the time has come to end such a stalemate. A possible solution was mooted in the *Himalayan Journal* in 1993 by Aamir Ali, an Indian living in Geneva: persuade India and Pakistan to withdraw their armies and establish an "International Park of the Rose". Such a park can be placed under the guardianship of the United Nations and the International Union of Alpine Associations, or, by including the territory held by Pakistan, it can be administered jointly by India and Pakistan as a transnational park. But this is a matter for the governments of India and Pakistan to consider. As a mountaineer and lover of this glacier I can only hope that steps are taken soon to conclude this never-ending war and save the beautiful Siachen.

The mullah, whose tawiz which destroyed the glacier in the first instance, had made another prediction: if, due to human folly, the storm did not cause total destruction of the glacier, another 'storm' may visit the glacier in a century to complete the job. This war seems to be fulfilling his prediction.

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Frozen Frontline

by Samina Ahmed and Varun Sahni

Since 13 April 1984, Indian and Pakistani troops have confronted each other, eyeball to eyeball, for control of the Siachen Glacier and its approaches in the eastern Karakoram mountain range, adjacent to the borders of India, Pakistan and China. The conflict has resulted in hundreds of casualties, caused more by adverse climatic conditions and harsh terrain than the occasional military skirmish.

This is by far the longest-running armed conflict between two regular armies in the 20th century. However, this is not a declared war. India and Pakistan continue to maintain full diplomatic relations with each other, and have many other ties, including economic and academic. Neither is this a conventional conflict: although both armies are conventionally armed, weather, altitude, and terrain make this uninhabitable region an unlikely zone of armed strife.

The Siachen Glacier is one of the most inhospitable and glaciated regions in the world. Sliding down a valley in the Karakoram Range, the glacier is 76 km long and varies in width between 2 and 8 km. It receives 6 to 7 m of the annual total of 10 m of snow in winter alone. Blizzards can reach speeds up to 150 knots (nearly 300 km per hour). The temperature routinely drops to 40 degrees Celsius below zero, and even lower with the wind chill factor. For these reasons, the Siachen Glacier has been called the "Third Pole".

This epithet, however, is misleading as it focuses solely on the adverse weather conditions and completely ignores the deleterious impact of altitude and terrain. The high altitude compounds the severity of the bitter climatic conditions. Base camp for Indian forces is 12,000 feet above sea level. The altitude of some Indian forward bases on the Saltoro Ridge ranges from Kumar (16,000 feet) and Bila Top (18,600 feet) to Pahalwan (20,000 feet) and Indira Col (22,000 feet). Because of the steep gradient of the Saltoro Range, the area is also prone to avalanches. These adverse conditions have direct consequences: since the war began, only 3 percent of the Indian casualties have been caused by hostile firing. The remaining 97 percent have fallen prey to the altitude, weather, and terrain.

Pakistani combat casualties are equally low because troops are dug in, artillery fire over mountain peaks is generally inaccurate (as winds are erratic and difficult to predict in such terrains), and infantry assaults are seldom made in the harsh climate and difficult terrain. As with the Indians, most Pakistani casualties occur because of the climate, terrain, and altitude. Pakistani positions are, for the most part, at altitudes lower than the Indian ones, ranging between 9000 and 15,000 feet, although some, such as Conway Saddle (17,200 feet), which controls ingress to the glacier, are much higher. On the other hand, glaciers at the Pakistani frontlines begin at 9440 feet and Pakistani troops are stationed on steep slopes, exposed to harsh weather.

The fight for the Siachen Glacier involves territory claimed by both states but controlled by neither until the mid-1980s. The origins of this armed conflict lie in the India-Pakistan dispute over the state of Jammu and Kashmir. In 1948, following an inconclusive war, the areas of the disputed state that fell under Pakistan comprised of the Northern Areas (Baltistan and Gilgit Agency) and Azad Jammu and Kashmir, while India controlled two-thirds of the territory including Jammu, Ladakh, and the valley of Kashmir.

A cease-fire line (CFL) was established as a result of the 1949 India-Pakistan agreement that concluded the war in Kashmir. The CFL ran along the international India-Pakistan border and then north and northeast until map grid-point NJ 9842, located near the Shyok River at the base of the Saltoro mountain range. Because no Indian or Pakistani troops were present in the geographically inhospitable northeastern areas beyond NJ 9842, the CFL was not delineated as far as the Chinese border. Both sides agreed, in the vague language that lies at the root of the Siachen dispute, that the CFL extended to the terminal point, NJ 9842, and "thence north to the glaciers".

After the 1965 India-Pakistan war, the Tashkent agreement resulted in troop withdrawals to positions along the 1949 CFL. No attempt was made to extend the

CFL further. Following Pakistan's defeat in the 1971 war, the Shimla Agreement of 1972 established a new Line of Control (LOC) as a result of the cease-fire of December 1971. The Siachen Glacier region, where no fighting had taken place, was left undelineated, and again nothing was done to clarify the position of the LOC beyond NJ 9842. The LOC was merely described as moving from Nerlin (inclusive to India), Brilman (inclusive to Pakistan), up to Chorbat La in the Turtok sector. "From there the line of control runs northeastwards to Thang (inclusive to India) thence eastwards joining the glaciers."

Since the Siachen Glacier region falls within the undelineated territory beyond the last defined section of the LOC, map grid-point NJ 9842, Indian and Pakistani territorial claims are based on their respective interpretations of the vague language contained in the 1949 and 1972 agreements. Pakistan draws a straight line in a northeasterly direction from NJ 9842 up to the Karakoram Pass, while India's line of claim moves north-northwest from NJ 9842 along the watershed line of the Salto Range, a southern offshoot of the Karakoram.

Eyeball to eyeball

Any attempt to analyse the Siachen dispute and identify potential opportunities and mechanisms for its resolution involves not only mapping the geographical dimension but also mapping the policy terrain of the two disputant states. A look at Indian and Pakistani perceptions is equally essential since these shape policies and preferences in both countries.

For India, the Siachen Glacier is the wedge of territory that separates "Pakistan-occupied Kashmir" from Aksai Chin, that part of Kashmir claimed and occupied by China. Siachen's geostrategic importance lies in the fact that its control would support India's defence of Ladakh, Jammu, and Kashmir against Pakistani and/or Chinese threats. It would prevent the outflanking of Indian forces in the Leh and Kargil sectors and connecting the Aksai Chin highway with the Karakoram pass. Control over Siachen would enable India to keep watch over the Karakoram Highway and the Khunjerab Pass, while fortifying its position in border negotiations with China.

Controlling the commanding heights is crucial for India. Its significance stems from basic infantry strategy: height confers a tactical advantage. Except at Gyong La, Indian forces occupy and control the commanding heights, and Pakistani military efforts since 1984 have been aimed at dislodging them from these positions. This strategy puts Pakistan at a distinct disadvantage as Pakistani forces have to carry the assault up steep terrain to the Indians, who have the much easier military task of sitting tight and defending their positions.

But as long as Pakistan does not commit its forces to an offensive against the Indian positions, it is the Indians who are at the disadvantage of being deployed at much higher altitudes. The Pakistani military has easier land access to its posts as roads and tracks have been brought up to Pakistan's lower base camps over the years. On the other hand, in order to block Pakistan's access to the Siachen Glacier, India has no option but to maintain its hazardous posts on the Salto Ridge, thereby exposing its forces to dangerous altitudes, weather, and terrain. India's strategy is also extremely expensive in financial terms: most of the Indian pickets and posts on the Salto Ridge are maintained by air. Personnel, weapons, ammunition, fuel, and food are usually flown in by helicopter, and occasionally para-dropped.

Despite India's declared position on the Siachen dispute, there are different perspectives, concerns, and objectives in the Indian policy community. Three are readily discernible: a) maintaining the deployment on Siachen at all costs, b) negotiating a military disengagement with Pakistan, and c) withdrawing Indian forces from the glacier, unilaterally if necessary.

The advocates of a negotiated or unilateral Indian withdrawal base their position on several arguments. They argue that the disputed region is uninhabitable, and therefore has no strategic value. Some believe that a Siachen settlement could be the first step in the resolution of the Kashmir dispute. Others argue that the Kashmir

and Siachen disputes can be unlinked, and that Siachen can be resolved without compromising on Kashmir. They hold that the Salto Range is a killing field and that the much higher altitude of the Indian posts exacerbates India's problems. There is also the opinion that the financial costs of India's Siachen operations represent a huge waste of much-needed resources. Most important of all is the feeling that the Siachen conflict is a cruel, costly, and unnecessary war that must be brought to an end.

Views like these are valid, but they do not represent the predominant Indian perspective on Siachen. Indeed, the very fact that the advocates of withdrawal are already convinced that a resolution of the conflict is desirable and possible makes them less important than that section of opinion that opposes withdrawal but would consider a compromise provided certain conditions are met.

Subtle distinctions are important among Indian analysts and policy-makers who oppose a withdrawal of Indian forces from their current deployment on the Salto Range. Some are convinced that India must hold on to Siachen at all costs. They argue that Pakistan is conducting a highly successful low-cost proxy war in Kashmir, at considerable cost to India. The only theatre in which India is able to pay Pakistan back in its own coin is on the Siachen Glacier itself, where India has a distinct tactical advantage. No matter what the cost, India must therefore stand firm. Any compromise on Siachen would relieve the pressure on Pakistan in the one place where it really hurts and would thus be tantamount to falling into a Pakistani trap.

Another hardline position is that India must not withdraw from Siachen because its occupation represents a major military victory for India. India won the race for the glacier, and now controls the commanding heights on the Salto Range. Over the last 14 years, Pakistan has tried innumerable times to displace the Indian forces, and has always had to withdraw with severe casualties. India has had to do nothing but sit tight and periodically repel a Pakistani assault. Any Indian withdrawal will leave Pakistan with an open door to the heights. Pakistan would gain in negotiation what it has been unable to obtain on the battlefield. Whatever the cost, India must therefore stand firm and maintain its current deployments.

The viewpoints articulated above may appear equally hawkish, with neither willing to countenance an Indian withdrawal from the Salto heights. However, a closer look reveals significant differences between them. No agreement with Pakistan that involves an Indian withdrawal would ever satisfy the policy makers and analysts for whom the real value of Siachen is that it is a bleeding ground for Pakistan. In contrast, a resolution can be devised to meet the principal concerns of Indian policy-makers and analysts opposed to a Pakistani occupation of the Salto heights and Siachen following an Indian withdrawal.

The latter group would back a negotiated Indian withdrawal provided it was convinced that India could, with adequate warning, forestall any Pakistani attempt to move into positions vacated by India.

The key to an agreement on the Indian side would lie in convincing as many hardliners as possible within the Indian policy-making community that an Indian withdrawal would not be tantamount to handing Siachen over to Pakistan. This implies that the Indian army would have a major say, virtually amounting to a veto, on any Siachen agreement. In terms of Indian policy-making, the Siachen issue is thus extremely unusual, because ordinarily military institutions in India are firmly subordinate to civilian authority. However, the memory of defeat at the hands of China in 1962 is very much alive in India, and no politician or bureaucrat is likely to interfere in matters of professional military judgment.

Eyeball...

In Pakistan's perceptions, the Siachen dispute is relevant to the dispute with India over Kashmir, albeit indirectly. Pakistan claims that the Siachen Glacier and its approaches fall within the Pakistani-controlled and administered territory of Jammu and Kashmir, more specifically in the Baltistan district in the Northern Areas. The

claim that Siachen is a part of Pakistan's Northern Areas is significant because Pakistan has, since independence, gradually incorporated the Northern Areas within the state, while maintaining that the Northern Areas were never under the direct jurisdiction of the state of Jammu and Kashmir in undivided India.

No steps have been taken, so far, to integrate the Northern Areas formally within Pakistan, but such a move cannot be ruled out in the future. The anomalous status of the Northern Areas provides Pakistan with the justification, when the need arises, to separate the Siachen conflict from the larger dispute over Kashmir. Siachen is thus portrayed as a regional issue by Pakistani officials as opposed to Kashmir, which, it is stressed, is an international issue.

Although the dispute over the Siachen region is recognised as a by-product of Partition, because the area was left undelineated, all Pakistani governments have claimed permanent administrative control over this "subdistrict" of Baltistan. They also claim that Pakistani administrative control has international recognition. For example, international mountaineering expeditions to the vicinity of the Siachen Glacier have obtained permission from Pakistani authorities since the 1950s. Cartographic international recognition for Pakistani territorial claims is also cited, including several international atlases that show the Siachen Glacier as lying well within the Pakistani-controlled portions of the LOC.

Pakistan admits, however, that its claims to administrative control did not translate into actual physical presence. No permanent posts were established due to the inhospitable terrain and harsh climatic conditions. Pakistan was willing to accept the territory as no-man's land until India deployed its forces in the Siachen area in 1984. By Pakistani perceptions, this violated the spirit of the Shimla agreement, which specified neither side would resort to the use of force to resolve bilateral disputes.

The primary objective of Pakistan's strategy has been to drive the cost of occupation high enough to force India to make concessions in any future settlement on Siachen. The declared policy in Pakistan is equally consistent. As the Siachen Glacier and its approaches are located within Baltistan, Pakistan will not accept the status quo on Siachen since it views India's military presence on the glacier and its environs as illegal.

However, Pakistani policy-makers have demonstrated a certain flexibility on the Siachen issue, unlike in the India-Pakistani dialogue on the larger dispute of Jammu and Kashmir. Pakistan's refusal to negotiate its basic demand for a plebiscite on Kashmir contrasts sharply with its willingness to consider measures ranging from redeployment to demilitarisation regarding the Siachen dispute—a recognition that the Siachen dispute involves territory of little strategic value, but which drains funds, manpower, and military hardware.

It is clear that a unilateral Pakistani withdrawal can be ruled out because Indian forces control most of the glacier's territory, including the high ground on two of its three major passes. There are three policy options before Pakistani decision-makers: a) to continue the armed conflict, b) to sign an agreement limited to conflict containment, or c) to reach a comprehensive and permanent settlement with India. The adoption of any of these options depends on the perceptions, preferences, and bargaining power of various sections of Pakistan's policy-making community.

Hardline elements, including influential segments within Pakistan's military establishment and civil bureaucracy, favour a continuation of the conflict because India is perceived as the aggressor. For this segment of Pakistani opinion, a negotiated settlement is regarded as an unnecessary concession. The military stalemate is seen as favouring Pakistan because neither side can claim to have ousted the other from the disputed territory. A more important motive for continuing the conflict is the desire to avenge the initial Pakistani military reverses by seeing India bleed through its comparatively higher human and financial costs.

More moderate elements within the political leadership as well as in the civil-military bureaucracies favour a negotiated settlement. But even among them, there are concerns, based on a history of mistrust, that India would attempt to use a settlement to legitimise its claim over the disputed area. Any agreement that alters the territorial status of the Siachen region to Pakistan's disadvantage would thus be opposed. This explains Pakistan's rejection of Indian proposals for authentication of actual ground positions prior to a withdrawal or the delineation of the Line of Control

beyond NJ 9842 along existing ground positions in the Siachen region. There would, moreover, be considerable internal opposition to any settlement without adequate safeguards—‘political and technological’—ensuring that the disputed region does not become vulnerable to Indian encroachments in the future.

...to eyeball

Continuous negotiations have been held to contain and resolve the conflict ever since the outbreak of hostilities. As early as 1984 and 1985, flag meetings were held, with little success, between Indian and Pakistani sector commanders. Since January 1986, several high-level talks have been held between Indian and Pakistani defence and foreign secretaries as well as senior military personnel.

In 1989, an understanding to resolve the dispute was reached. According to the joint statement at the end of the defence secretary-level talks, “There was agreement by both sides to work towards a comprehensive settlement, based on redeployment of forces to reduce the chances of conflict, avoidance of the use of force and the determination of future positions on the ground so as to conform with the Shimla Agreement and to ensure durable peace in the Siachen area.”

The two countries also came close to a resolution in November 1992. At the sixth meeting of the series, an India-Pakistan agreement was reportedly reached that envisaged the mutual withdrawal of troops from key passes to new positions, and the creation of a “zone of complete disengagement” through troop disengagement and redeployment. The delineation of this area of “peace and tranquillity” would be “without prejudice” to the known position of either side. The agreement also reportedly included pledges by both states to refrain from reoccupying vacated positions.

No new positions would be occupied in the designated zone nor would any “activity”—“civilian or military”—be allowed within the designated zone. Time schedules for disengagement and redeployment were to be worked out to the “mutual satisfaction” of both sides, followed by the formation of a joint commission that would be responsible for “delineation of the Line of Control beyond NJ 9842”. Until the area was formally delineated, monitoring mechanisms would be devised to prevent the occurrence of violations. Apparently, either side could resort to “any means”, including the use of force, in the event of a violation of these commitments.

The two countries, however, not only failed to implement these tentative agreements, but one or the other side denied that any tangible agreement had been reached on either occasion. The difficulty in reaching or implementing any mutually agreeable proposal was due to a number of factors, ranging from domestic political constraints to differences over the determination of redeployment positions, the demarcation of the proposed demilitarised zone, and ensuring the inviolability of such a zone. The significance of the understandings reached in 1989 and 1992 cannot, however, be understated since they identify potential areas of agreement and discord in any future agreement of the Siachen dispute.

With the resumption of the India-Pakistani dialogue in 1997, the Siachen dispute is once again on the formal agenda of ongoing talks (*see facing page*). While the outcome of these negotiations depends on complex, intertwined, external and internal determinants, a future understanding of the dispute could take any of the following shapes: a) an accord to de-escalate hostilities, b) an understanding to disengage military forces, or c) an agreement to demilitarise the area.

This taxonomy does not imply that the three types of potential agreements would necessarily be reached in sequence or even in isolation from one another. Each type of agreement and its conflict management or conflict resolution features will depend on several broad principles or pre-conditions. Thus, levels of mutual trust and confidence and/or mutuality of interests will determine both the nature and the parameters of any potential agreement. Another important precondition is the degree of political will on the part of authoritative decision-makers to reach a peaceful,

negotiated settlement of the dispute, including their demonstrated ability or desire to avoid intractable issues.

De-escalation. The primary objective of an accord to de-escalate would be to reduce the chances of conflict, while ending active hostilities in the Siachen Glacier region. Such an agreement would include several conflict-management mechanisms. The features of the accord could specifically include restrictions on any quantitative increases in weaponry, and an agreement to refrain from aggressive behaviour such as offensives to occupy new territory or to dislodge rival troops. The agreement could also prohibit either side from fortifying its presence in the disputed region by inducting new military units.

Disengagement. An agreement on military disengagement could incorporate many of the clauses of an agreement specifically aimed at de-escalating hostilities, including confidence-building measures such as prior notification of overflights and flag meetings between Indian and Pakistani sector commanders. Such an accord would, however, move from conflict management to conflict resolution since it would demonstrate the willingness of both parties to find a more comprehensive solution to the dispute. It could also serve as a continuum from cease-fire to demilitarisation should the political will exist.

Relocating troops to minimise the chance of conflict implies both a gradual reduction of forces in forward positions and an incremental dismantling of forward pickets and observation posts. Forces would then be redeployed and repositioned in agreed upon areas. Other measures could include a limitation on overflights. While artillery batteries at the various posts and positions could remain in place, an agreement for military disengagement could envisage gradually downgrading weapons systems, including removing sophisticated military systems such as surface-to-air missiles.

Demilitarisation. The demilitarisation option is the most comprehensive solution for the Siachen dispute. It would require, as essential preconditions, an immediate cessation of hostilities and the prevention of any potential re-occurrence of armed conflict. The creation of a demilitarised zone would cause the complete withdrawal of all military presence on and in the environs of the glacier. Such a withdrawal would be accompanied by the destruction of bases, pickets, and observation posts, the removal of all military hardware from the disputed area, and a prohibition on aerial patrolling and reconnaissance by either side.

The agreement would also include a commitment on both sides to refrain from reoccupying vacated positions. Another confidence building measure could be the use of hotlines between force commanders as well as senior personnel at military headquarters, including Directors-General of Military Operations. Above all, an appropriate regime of monitoring technologies and verification procedures would be identified and instituted to ensure the viability of the accord.

Hostile climate

After years of hostilities, neither India nor Pakistan are any closer to achieving their stated objective of acquiring control over the disputed territory through the use of force. Policy-makers in both states have begun to examine the possibilities of a negotiated agreement, partly as a result of the military stalemate and partly because of the mounting costs of the conflict in terms of lives and money. The Siachen dispute covers territory of little strategic importance for either state, while it serves as yet another irritant in the uneasy relationship between India and Pakistan.

A peacefully negotiated settlement of the Siachen conflict appears especially logical since the glacier's inhospitable terrain will continue to deter Indian and Pakistani attempts at acquiring military predominance. At the same time, an agreement on Siachen will not impinge, either militarily or politically, on the position of either side in the resolution of their other, more major differences. A settlement of the dispute would, however, reduce bilateral tensions, thereby improving the climate for

future steps towards peace. Specifically in the context of the Siachen dispute, even a policy option that merely reduces hostilities would serve as a first step towards the conclusion of a more comprehensive agreement.

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Siachen Science Club

by Kent L. Biringier

With only slight adjustments in the cease-fire line after subsequent wars, the division of Kashmir has continued for five decades. And since 1984, the state's Siachen Glacier region has become a 20,000-foot high battleground between India and Pakistan.

There are differing views on the military significance of the Siachen Glacier, but the dispute has an undeniably strong political significance. However, as India and Pakistan have worked to reach agreement on many issues over the years, Siachen has been discussed as a potential location for cooperation by the two sides through disengagement of troops from the region. In 1989 and again in 1993, a settlement on the issue was nearly reached. The high cost in financial and human terms of continuing this confrontation make it an excellent candidate for cooperation while minimising strategic or military disadvantage.

Many factors will influence a resolution of the Siachen conflict. While political will is the predominant factor, it will be affected by other issues too. The desire to reduce human suffering and to save money are two other important factors that justify resolution. Mechanisms which provide assurance that the terms of an agreement are met will be required in order to support political will. These mechanisms may include monitoring systems, inspection regimes, and cooperative projects, all of which can help ensure compliance with whatever agreement is made.

The concept introduced here is to substitute a scientific presence in the Siachen region for the military one. The goal of establishing a "Siachen Science Centre" would be to satisfy the requirement for a national presence in the area that would help ensure that the terms of a military disengagement agreement are met, while advancing the cause of science in many fields. The project could be conducted cooperatively by Indians and Pakistanis but with the possible participation of other regional and international participants and sponsors.

The Siachen Science Centre would consist of a scientific research facility within a designated zone in the Karakoram Range. It would consist of a base camp with the potential for outlying field sites where scientific instruments could be placed. Creating smaller-scale outposts in the vicinity of the base station is also possible. The centre would be staffed by scientists, engineers, and technicians conducting research, along with necessary support staff, which could be of bilateral, regional or multinational mix.

The location high in the Karakoram Range in the western part of the Himalayan Mountains offers many advantages as a base for conducting scientific research. Depending on the location of the facility, it has the potential to be the highest altitude manned research station in the world. That fact, coupled with its isolated location, unique geology, and geographical position, would make it a special location for research.

Astronomy: The high altitude of the Siachen Glacier would enhance astronomical research high above much of the earth's atmosphere. The remoteness of the location, far away from sources of light pollution, is an advantage for astronomy.

Geology: The potential to increase geological knowledge about this region is great. A more detailed understanding of rock origins as well as plate tectonic movements could be developed through systematic study of local rock outcroppings. Palaeontology studies of fossil records in the area could further define the geologic history of the area.

Atmospheric Sciences: Atmospheric science would benefit from a more comprehensive study of weather patterns in the complex terrain of the Himalaya. A series of meteorological stations could enable more accurate weather forecasting. A study of atmospheric and ice-bound pollution could also provide useful information on global as well as regional pollution concerns.

Glaciology: Glaciology studies can provide insight into climatic variations throughout history. Snowfall and glacial melt provide the source of rivers such as the Indus. Therefore, hydrologic studies may provide insight into relationships among snowfall, glacial activity, and river flows in critical water resources.

Life Sciences: Biological and botanical studies of life in this high, harsh environment would also add to the collective body of scientific knowledge.

Physiology: Controlled physiological studies of the effects of high altitude on humans are possible in this high-altitude laboratory. This could lead to improved methods for preventing high altitude sicknesses and for treating those who suffer from them.

Psychology and Behavioural Sciences: Investigating the effects of a multinational group working together for prolonged periods in this hostile climatic environment would be a valuable study.

In addition, engineering knowledge could be gained from the deployment and operation of such a science centre. Lessons will be learned in the design, deployment, and operation of the severe climate shelters needed. Many of the communications and logistical issues associated with supplying and maintaining a remote installation would provide a chance to add to knowledge and demonstrate cooperation on these subjects.

The centre can also serve as a test bed for characterising and operating monitoring systems in a severe environment. One can even envision a Siachen Worldwide Website that could include information from the glacier. The Australian Antarctic Division has such a capability on their Internet site, in which photographs and current weather conditions at their Mawson Station in the Antarctic can be viewed.

There are nearly endless possibilities for research and monitoring opportunities in such a centre. The topics listed above are only intended to be representative of those that may be of interest to South Asian countries. Establishment of such a centre could include a research board that could accept proposals for those wishing to pursue scientific or technical projects in the glacier environment.

While the concept of cooperative scientific research may be new for South Asia, there are many precedents for different features of this proposal. There is an extensive history of people working together in confined spaces in hostile environments. These include remote outposts such as lighthouses, radar sites, and military outposts (including the Siachen itself). Commercial enterprises, such as mineral and oil exploration, often include the establishment of remote outposts to develop and operate mines or oil fields. Cold weather oil production stations, such as the one in Prudhoe Bay, Alaska, present another precedent from which to draw experience in designing, building, and operating the needed equipment and facilities. Other candidate programmes from which to gain knowledge useful in establishing a Siachen Science Centre include naval submarine programmes and the US and Russian space station and space shuttle programmes. However, the most applicable precedents for establishing a South Asian centre in the Siachen area are scientific stations and outposts in the Arctic and the Antarctic.

International efforts for cooperative Arctic research include examples of land-based stations, ship-based research, ice-based monitors, and remote-transmitting buoy networks. The land-based stations are established in particular countries but have scholars and advisory boards that represent international participation. One example is the Arctic Centre in Finland, which has an advisory board

of 13 members representing nine countries. A decision to deploy national research stations at Siachen could be addressed in a similar fashion.

Another cooperative example is that of the International Arctic Buoy Programme that maintains a network of automatic data buoys in the Arctic Basin to monitor pressure, temperature, and ice motion. The programme is funded and managed by eight countries, and over 24 international research institutes participate in data collection and assessment. The Siachen area could provide a similar opportunity to engage a variety of international participants in a similar cooperative research programme.

Particularly pertinent to the Siachen issue is the precedent of the Antarctic Treaty of 1959. The treaty set aside the entire continent for peaceful scientific use only and outlined the requirements for successful coexistence on the continent.

Since its entry into force in 1961, 39 countries, including the seven original claimants to portions of the continent, have become signatories to the treaty. Under the terms of the Treaty, all claims are held in abeyance for the term of the Treaty and no new territorial claims can be submitted. India is one of the state parties to the Treaty having signed it in 1983. The Indian Department of Ocean Development coordinates and executes the national Antarctic programme and maintains stations including one at Maitri Antarctica (70⁰45'S, 11⁰44'E) which is operated throughout the year. The Pakistanis, although not signatories to the Antarctic Treaty, maintain the Jinnah Station in Antarctica through their National Institute of Oceanography.

The Antarctic Treaty bans any military activity in the defined area and prohibits nuclear testing. It limits national programmes to those of scientific research and ensures the free exchange of information and scientists among countries. Inspection rights are granted to the facilities and operations of other countries with a presence on the continent. Provisions are made to have an open skies regime, enabling aerial observation at any time over any and all areas of the Antarctic by any of the Contracting Parties that have the right to designate observers. Regular consultative meetings of the signatory states are held and disputes are resolved by peaceful negotiation including use of the International Court of Justice.

Currently 25 nations maintain a full-time presence on the continent. As of today, the treaty has been in force for 37 years and represents one of the great accomplishments of international cooperation. Research in the Antarctic is pursued in many of the scientific disciplines suggested for the Siachen Science Centre. In the case of astronomy, for example, the Advanced Telescope Project (ATP) and South Pole Infrared Explorer (SPIREX) project collect information on the astronomical qualities of the region and study faint stars and galaxies.

While not a perfect model for South Asia, there are many features of the Antarctic Treaty that might be considered for application in Siachen. Some of these include demilitarisation of the area of concern, dedication of the area to scientific research, establishment of research centre(s) that share information and are open to joint inspection, deferring resolution of territorial claims, and resolving disputes through peaceful means.

Resolution of the Siachen Glacier dispute will require both political will and the monitoring and confidence building measures necessary to ensure compliance with agreements reached. The political will to address issues of conflict in South Asia is growing as India and Pakistan begin the second half of their first century of independence. The governments of India and Pakistan appear interested in establishing increased dialogue and cooperation. The conflict over the Siachen Glacier now appears to be a good candidate for such cooperation. A Siachen Science Centre may offer one piece of the solution.

A

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THE ANTARCTIC TREATY

A model for Siachen?

Article I

Antarctica shall be used for peaceful purposes only. There shall be prohibited, *inter alia*, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military manoeuvres, as well as the testing of any types of weapons. The present Treaty shall not prevent the use of military personnel or equipment for scientific research or for any other peaceful purpose.

Article IV

1. Nothing contained in the present Treaty shall be interpreted as:
a renunciation by any Contracting Party of previously asserted rights of or claims to territorial sovereignty in Antarctica;

a renunciation or diminution by any Contracting Party of any basis of claim to territorial sovereignty in Antarctica which it may have whether as a result of its activities or those of its nationals in Antarctica, or otherwise;

recognition or non-recognition of any other State's right of or claim or basis of claim to territorial sovereignty in Antarctica.

2. *No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force.* (emphasis added)

Article VII

In order to promote the objectives and ensure the observance of the provisions of the present Treaty, each Contracting Party whose representatives are entitled to participate in the meetings referred to in Article IX of the Treaty shall have the right to designate observers to carry out any inspection provided for by the present Article. Observers shall be nationals of the Contracting Parties which designate them. The names of observers shall be communicated to every other Contracting Party having the right to designate observers, and like notice shall be given of the termination of their appointment.

Each observer designated in accordance with the provisions of paragraph 1 of this Article shall have complete freedom of access at any time to any or all areas of Antarctica.

All areas of Antarctica, including all stations, installations, and equipment within those areas, and all ships and aircraft at points of discharging or embarking cargoes or personnel in Antarctica, shall be open at all times to inspection by any observers designated in accordance with paragraph 1 of this article.

Aerial observation may be carried out at any time over any or all areas of Antarctica by any of the Contracting Parties having the right to designate observers.

Each Contracting Party shall, at the time when the present Treaty enters into force for it Reports from the observers referred to in Article VII of the present Treaty shall be transmitted to the representatives of the Contracting Parties participating in the meetings referred to in paragraph 1 of the present Article.

Article X

Each of the Contracting Parties undertakes to exert appropriate efforts consistent with the Charter of the United Nations, to the end that no one engages in any activity in Antarctica contrary to the principles or purposes of the present Treaty. This facilitates the exercise of their functions under the present Treaty, and without prejudice to the respective positions of the Contracting Parties relating to jurisdiction over all other persons in Antarctica, observers designated under paragraph 1 of Article VII and scientific personnel exchanged under subparagraph 1 (b) of Article III of the Treaty [relating to exchange of scientific personnel between expeditions and stations], and members of the staffs accompanying any such persons, shall be subject only to the jurisdiction of the Contracting Party of which they are nationals in respect of all acts or omissions occurring while they are in Antarctica for the purpose of exercising their functions.

Without prejudice to the provisions of paragraph 1 of this Article, and pending the adoption of measures in pursuance of subparagraph 1 (e) of Article IX, the Contracting Parties concerned in any case of dispute with regard to the exercise of jurisdiction in Antarctica shall immediately consult together with a view to reaching a mutually acceptable solution.

Article IX

1. Representatives of the Contracting Parties named in the preamble to the present Treaty shall meet at the City of Canberra within two months after the date of entry into force of the Treaty, and thereafter at suitable intervals and places, for the purpose of exchanging information, consulting together on matters of common interest pertaining to Antarctica, and formulating and considering, and recommending to their Governments, measures in furtherance of the principles and objectives of the Treaty, including measures regarding: use of Antarctica for peaceful purposes only; facilitation of scientific research in Antarctica; facilitation of international scientific cooperation in Antarctica; facilitation of the exercise of the rights of inspection provided for in Article VII of the Treaty; questions relating to the exercise of jurisdiction in Antarctica; preservation and conservation of living resources in Antarctica.

3. Reports from the observers referred to in Article VII of the present Treaty shall be transmitted to the representatives of the Contracting Parties participating in the meetings referred to in paragraph 1 of the present Article. [para 2 omitted]

Article X

Each of the Contracting Parties undertakes to exert appropriate efforts consistent with the Charter of the United Nations, to the end that no one engages in any activity in Antarctica contrary to the principles or purposes of the present Treaty. This article reinforces the underlying intent that all efforts be made to meet the spirit as well as letter of the Treaty.

Article XI

1. If any dispute arises between two or more of the Contracting Parties concerning the interpretation or application of the present Treaty, those Contracting Parties shall consult among themselves with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.

2. Any dispute of this character not so resolved shall, with the consent, in each case, of all parties to the dispute, be referred to the International Court of Justice for settlement; but failure to reach agreement or reference to the International Court shall not absolve parties to the dispute from the responsibility of continuing to seek to resolve it by any of the various peaceful means referred to in paragraph 1 of this Article.

A

Appendix—The Antarctic Treaty and Its Application to Siachen

This appendix provides the text of the 14 articles that make up the Antarctic Treaty. The text of each treaty article is followed by a brief description on the possible applicability of the treaty provisions to the Siachen dispute in South Asia.

Article I

- 1. Antarctica shall be used for peaceful purposes only. There shall be prohibited, inter alia, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any types of weapons.*
- 2. The present treaty shall not prevent the use of military personnel or equipment for scientific research or for any other peaceful purpose.*

These provisions would be consistent with the desired military withdrawal and demilitarization of the Siachen region. However, they would also permit the use of personnel and equipment from earlier military activities to be available to support establishment and operation of a peaceful and cooperative scientific center in the area.

Article II

Freedom of scientific investigation in Antarctica and cooperation toward that end, as applied during the International Geophysical Year, shall continue, subject to the provisions of the present Treaty.

This is the theme of the Siachen Science Center concept: that scientific investigation be the basis for cooperation in the area. The Antarctic Treaty built upon a year of joint scientific research by 12 nations in 1957-1958 (International Geophysical Year) in which studies of the Earth and its cosmic environment were conducted.

Article III

1. *In order to promote international cooperation in scientific investigation in Antarctica, as provided for in Article II of the present Treaty, the Contracting Parties agree that, to the greatest extent feasible and practicable*
 - (a) *information regarding plans for scientific programs in Antarctica shall be exchanged to permit maximum economy and efficiency of operations;*
 - (b) *scientific personnel shall be exchanged in Antarctica between expeditions and stations;*
 - (c) *scientific observations and results from Antarctica shall be exchanged and made freely available.*
2. *In implementing this Article, every encouragement shall be given to the establishment of co-operative working relations with those Specialized Agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica.*

Sharing information is the key element of the cooperative monitoring concept. The Antarctic treaty envisioned different national research stations that would share information and collaborate. The Siachen Science Center concept could involve either separate national stations or a single jointly administered India/Pakistan station. The option for an even more diverse multinational station is also possible. Political decisions will determine which flags fly at such a center. It is likely that the center would establish relationships with UN and other international scientific and monitoring organizations as provided for in this Treaty Article.

Article IV

1. *Nothing contained in the present Treaty shall be interpreted as:*
 - (a) *a renunciation by any Contracting Party of previously asserted rights of or claims to territorial sovereignty in Antarctica;*
 - (b) *a renunciation or diminution by any Contracting Party of any basis of claim to territorial sovereignty in Antarctica which it may have whether as a result of its activities or those of its nationals in Antarctica, or otherwise;*
 - (c) *recognition or non-recognition of any other State's right of or claim or basis of claim to territorial sovereignty in Antarctica.*
2. *No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force.*

Prior to establishment of the Antarctic treaty, seven nations had territorial claims on parts of the continent. To establish the continent as a place for exclusive scientific cooperation, it was necessary to address questions of territorial claims. (See Figure 7.) The treaty, in Article IV, has adopted an interesting model of setting aside the

issue of territorial claims by deferring them indefinitely, not renouncing, denying or supporting any claims. While this was done for the entire continent, in the case of Siachen a portion of the disputed area agreeable to both sides could be set aside for scientific research. This in no way takes away current claims but allows progress in diffusing tensions without first resolving the issue of territorial claims.

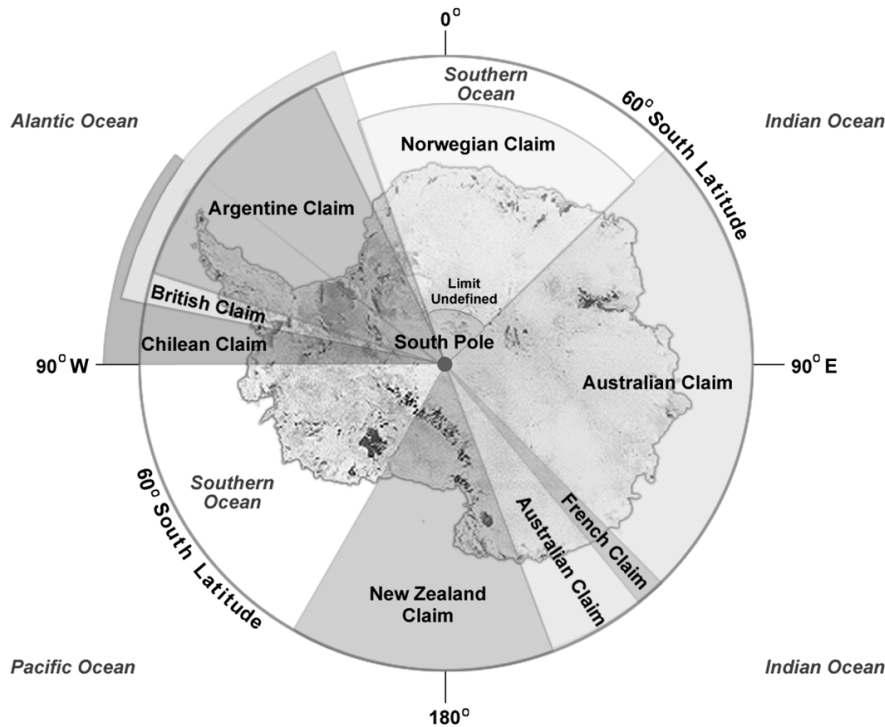


Figure 1. Antarctic Territorial Claims

The nature of territorial disputes is complex both legally and politically. The histories of the Siachen area and Antarctica are very different. Therefore, the specific legal and political precedent for addressing territorial claims in the Antarctic Treaty may not apply to the Siachen dispute. However, the concepts introduced in the Antarctic treaty might offer new insight into addressing the territorial concerns associated with the Siachen dispute.

Article V

1. *Any nuclear explosions in Antarctica and the disposal there of radioactive waste material shall be prohibited.*
2. *In the event of the conclusion of international agreements concerning the use of nuclear energy, including nuclear explosions and the disposal of radioactive waste material, to which all of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX are parties the rules established under such agreements shall apply in Antarctica.*

The nuclear issue is a sensitive one in South Asia because of concerns about nuclear proliferation. Therefore, attempts to tie nuclear issues to the Siachen dispute are likely to be counterproductive. However, if the parties did agree to prohibit nuclear testing and radioactive waste disposal in the limited area of Siachen, a positive step in nuclear cooperation between India and Pakistan could be achieved. The political willingness to agree to such provisions by India and Pakistan is feasible because neither of these activities is planned or appropriate in this high mountain region. In 1988 India and Pakistan formalized the Agreement of Prohibition of Attack

on Nuclear Installations and Facilities. The Agreement was ratified in 1991 and lists of nuclear installations covered by the agreement were exchanged in 1992.

Article VI

The provisions of the present Treaty shall apply to the area south of 60 deg South Latitude, including all ice shelves, but nothing in the present Treaty shall prejudice or in any way affect the rights, or the exercise of the rights, of any State under international law with regard to the high seas within that area.

An article such as this would be required to specify the exact area covered by the treaty. Clearly issues of laws of the seas do not apply in Siachen.

Article VII

1. *In order to promote the objectives and ensure the observance of the provisions of the present Treaty, each Contracting Party whose representatives are entitled to participate in the meetings referred to in Article IX of the Treaty shall have the right to designate observers to carry out any inspection provided for by the present Article. Observers shall be nationals of the Contracting Parties which designate them. The names of observers shall be communicated to every other Contracting Party having the right to designate observers, and like notice shall be given of the termination of their appointment.*
2. *Each observer designated in accordance with the provisions of paragraph 1 of this Article shall have complete freedom of access at any time to any or all areas of Antarctica.*
3. *All areas of Antarctica, including all stations, installations, and equipment within those areas, and all ships and aircraft at points of discharging or embarking cargoes or personnel in Antarctica, shall be open at all times to inspection by any observers designated in accordance with paragraph 1 of this article.*
4. *Aerial observation may be carried out at any time over any or all areas of Antarctica by any of the Contracting Parties having the right to designate observers.*
5. *Each Contracting Party shall, at the time when the present Treaty enters into force for it, inform the other Contracting Parties, and thereafter shall give them notice in advance, of*
 - (a) *all expeditions to and within Antarctica, on the part of its ships or nationals, and all expeditions to Antarctica organized in or proceeding from its territory;*
 - (b) *all stations in Antarctica occupied by its nationals; and*
 - (c) *any military personnel or equipment intended to be introduced by it into Antarctica subject to the conditions prescribed in paragraph 2 of Article I of the present Treaty.*

The ability to allow inspections of facilities on Siachen and to have provision for some aerial monitoring also help provide assurance that the activity on the glacier is limited to scientific research. Specific provisions would need to be developed on the nature and operations of inspections and overflights. Since the science center concept could be implemented bilaterally, as well as regionally or internationally, the details of inspections and overflights would be worked out in accordance with the parties who would be subject to the provisions of the agreement.

Article VIII

1. *In order to facilitate the exercise of their functions under the present Treaty, and without prejudice to the respective positions of the Contracting Parties relating to jurisdiction over all other persons in Antarctica, observers designated under*

paragraph 1 of Article VII and scientific personnel exchanged under subparagraph 1 (b) of Article III of the Treaty, and members of the staffs accompanying any such persons, shall be subject only to the jurisdiction of the Contracting Party of which they are nationals in respect of all acts or omissions occurring while they are in Antarctica for the purpose of exercising their functions.

2. *Without prejudice to the provisions of paragraph 1 of this Article, and pending the adoption of measures in pursuance of subparagraph 1 (e) of Article IX, the Contracting Parties concerned in any case of dispute with regard to the exercise of jurisdiction in Antarctica shall immediately consult together with a view to reaching a mutually acceptable solution.*

Determining jurisdiction for all acts or omissions of the staff of a Siachen Science Center as well as mechanisms for addressing disputes will also be important in establishing this agreement among member states.

Article IX

1. *Representatives of the Contracting Parties named in the preamble to the present Treaty shall meet at the City of Canberra within two months after the date of entry into force of the Treaty, and thereafter at suitable intervals and places, for the purpose of exchanging information, consulting together on matters of common interest pertaining to Antarctica, and formulating and considering, and recommending to their Governments, measures in furtherance of the principles and objectives of the Treaty, including measures regarding:
(a) use of Antarctica for peaceful purposes only;
(b) facilitation of scientific research in Antarctica;
(c) facilitation of international scientific cooperation in Antarctica;
(d) facilitation of the exercise of the rights of inspection provided for in Article VII of the Treaty;
(e) questions relating to the exercise of jurisdiction in Antarctica;
(f) preservation and conservation of living resources in Antarctica.*
2. *Each Contracting Party which has become a party to the present Treaty by accession under Article XIII shall be entitled to appoint representatives to participate in the meetings referred to in paragraph 1 of the present Article, during such time as that Contracting Party demonstrates its interest in Antarctica by conducting substantial scientific research activity there, such as the establishment of a scientific station or the dispatch of a scientific expedition.*
3. *Reports from the observers referred to in Article VII of the present Treaty shall be transmitted to the representatives of the Contracting Parties participating in the meetings referred to in paragraph 1 of the present Article.*
4. *The measures referred to in paragraph 1 of this Article shall become effective when approved by all the Contracting Parties whose representatives were entitled to participate in the meetings held to consider those measures.*
5. *Any or all of the rights established in the present Treaty may be exercised as from the date of entry into force of the Treaty whether or not any measures facilitating the exercise of such rights have been proposed, considered or approved as provided in this Article.*

The need to set up an organization to administer control of the Siachen Science Center is reflected in this article. This organization, which would include representatives of signatory countries, could decide policy; select research experiments; collect, share and publish information jointly; and address other issues associated with funding and operating the center.

Article X

Each of the Contracting Parties undertakes to exert appropriate efforts consistent with the Charter of the United Nations, to the end that no one engages in any activity in Antarctica contrary to the principles or purposes of the present Treaty.

This article reinforces the underlying intent that all efforts be made to meet the spirit as well as letter of the treaty.

Article XI

- 1. If any dispute arises between two or more of the Contracting Parties concerning the interpretation or application of the present Treaty, those Contracting Parties shall consult among themselves with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.*
- 2. Any dispute of this character not so resolved shall, with the consent, in each case, of all parties to the dispute, be referred to the International Court of Justice for settlement; but failure to reach agreement or reference to the International Court shall not absolve parties to the dispute from the responsibility of continuing to seek to resolve it by any of the various peaceful means referred to in paragraph 1 of this Article.*

This article provides for peaceful and appropriate legal resolution of disputes arising from the agreement. It further commits the signatories to continue seeking peaceful resolution of all disputes. Provisions such as these would build confidence that a Siachen resolution was intended to keep the peace despite disagreements that might arise.

Article XII

- 1. (a) The present Treaty may be modified or amended at any time by unanimous agreement of the Contracting Parties whose representatives are entitled to participate in the meeting provided for under Article IX. Any such modification or amendment shall enter into force when the depositary Government has received notice from all such contracting Parties that they have ratified it.*
(b) Such modification or amendment shall thereafter enter into force as to any other Contracting Party when notice of ratification by it has been received by the depositary Government. Any such Contracting Party from which no notice of ratification is received within a period of two years from the date of entry into force of the modification or amendment in accordance with the provisions of subparagraph 1 (a) of this Article shall be deemed to have withdrawn from the present Treaty on the date of the expiration of such period.
- 2. (a) If after the expiration of thirty years from the date of entry into force of the present Treaty, any of the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX so requests by a communication addressed to the depositary Government, a Conference of all the Contracting Parties shall be held as soon as practicable to review the operation of the Treaty.*
(b) Any modification or amendment to the present Treaty which is approved at such a Conference by a majority of the Contracting Parties there represented, including a majority of those whose representatives are entitled to participate in the meetings provided for under Article IX, shall be communicated by the depositary Government to all the Contracting Parties immediately after the termination of the Conference and shall enter into force in accordance with the provisions of paragraph 1 of the present Article.

(c) If any such modification or amendment has not entered into force in accordance with the provisions of subparagraph 1 (a) of this Article within a period of two years after the date of its communication to all the Contracting Parties, any Contracting Party may at any time after the expiration of that period give notice to the depositary Government of its withdrawal from the present Treaty, and such withdrawal shall take effect two years after the receipt of the notice by the depositary Government.

As with all treaties, this article specifies the conditions for amendment, withdrawal, and duration of the treaty. The specific requirements for these provisions would need to be established during negotiation of a Siachen agreement.

Article XIII

- 1. The present Treaty shall be subject to ratification by the signatory States. It shall be open for accession by any State which is a Member of the United Nations, or by any other State which may be invited to accede to the Treaty with the consent of all the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX of the Treaty.*
- 2. Ratification of or accession to the present Treaty shall be effected by each State in accordance with its constitutional processes.*
- 3. Instruments of ratification and instruments of accession shall be deposited with the Government of the United States of America, hereby designated as the depositary Government.*
- 4. The depositary Government shall inform all signatory and acceding States of the date of each deposit of an instrument of ratification or accession, and the date of entry into force of the Treaty and of any modification or amendment thereto.*
- 5. Upon the deposit of instruments of ratification by all the signatory States, the present Treaty shall enter into force for these States and for States which have deposited instruments of accession. Thereafter the Treaty shall enter into force for any acceding State upon the deposit of its instruments of accession.*
- 6. The present Treaty shall be registered by the depositary Government pursuant to Article 102 of the Charter of the United Nations.*

This article addresses the process of treaty ratification.

Article XIV

The present Treaty, done in the English, French, Russian and Spanish languages, each version being equally authentic, shall be deposited in the archives of the Government of the United States of America, which shall transmit duly certified copies thereof to the Governments of the signatory and acceding States.

In Witness Whereof, the undersigned Plenipotentiaries, duly authorized, have signed the present Treaty.

Done at Washington this first day of December, one thousand nine hundred and fifty-nine.

Finally, the treaty languages and deposit location for signatory and acceding States are specified as they would need to be in a formal Siachen agreement.