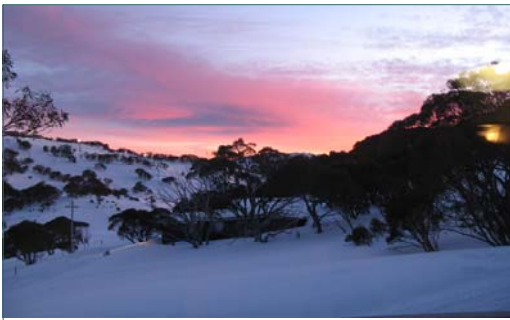




# UAC NEWSLETTER



**September 2008**



## **Obituary: Bill Russell - 13 February 1939 - 6 December 2007**

### **Inside this issue:**

UAC Website info	2
Guthega - Share for Sale	2
Various Bits and Pieces	
What's on in Perisher Blue	2
Snowmaking at Perisher Blue	3-5

A Civil Engineer, Bill joined UAC in 1964 at a time when he was the then Main Roads Department's Work's Engineer at Jindabyne, responsible for the reconstruction of the Kosciuszko Road. Newly married to Pam, they lived initially at the Creel at Waste Point, then Berridale and finally in New Jindabyne. A naturally gifted sportsman, he became interested in skiing and became acquainted with the UAC through links to Albert Streber. He developed into a very neat and competent downhill skier and got to know many of the local alpine characters such as John Abbottsmith, who built our sledge, and Ken Breakespeare.

On returning to Sydney, he took an active interest in the Club, being Secretary from 1969-74 and Chairman in 1974-75. In 1987, convinced that the then directions of the Club were not the most appropriate, and that improvement works should be undertaken as far as practicable by the members as was the original building, he rejoined the Board as Chairman. He saw through improvements to the weatherboard section, involving deletion of the old dormitories and female bathroom and replacing these with the ski room, drying room, bedrooms 1-3, Its and the kitchen (including Big Toot).

He retired in 1993. Bill was personally involved in many aspects including installation of the heater/dryer for the drying room, the foundations for the kitchen cupboards and sinks as well as the tiling. On a number of occasions, after leaving Sydney early on a Saturday morning he was waiting for the Yard Marshall at the timber supply company in Queanbeyan to open up to obtain supplies for work on that weekend. For his efforts, along with Phil Dale, he was the first to be honoured with Life Membership of UAC. He was also proud to be an honorary member of the Feral Ski Klubb. He enjoyed hut life and the opportunity it gave to get to know many club members.

Bill and Pam turned to cross-country skiing. Beginning with outings from the hut, then day trips including many to the Main Range, he and some other members undertook extensive touring and camping both in tents and in the old shepherds' huts in the Main Range and Jagungal areas. He even spent a night in a snow cave. He rounded off his skiing career by completing the 'Mecca' of ski touring – the trip from Kiandra to Kosciuszko – on his second attempt.

In recent times, his interest moved away from skiing, but not from the Club, as he continued to be a Summer Member and active in work parties until his untimely death last December.

Bill was a good Club member and an all round great fellow, sadly missed by all his family and many friends.



From the Editor:

When sending out the Newsletters to members, I've had a few email addresses bounce back for various reasons.

If you know of somebody who isn't receiving the Newsletter, please get them to send their new email address to me: [1jayne@optusnet.com.au](mailto:1jayne@optusnet.com.au)

- Jayne Cunningham

As anybody who's been down to Perisher Blue this year will testify, the skiing has been sensational. Don't forget to check the UAC Website for any vacancies coming up. [www.uac.net.au](http://www.uac.net.au)

*Also on the website, check out the excellent flyer on Environmental Awareness material supplied by the National Parks and Wildlife Service.*

**There is a share for sale with the Australian Ski Club with lodges at Guthega and Jindabyne. If anyone is interested they should contact Phil Hart on 9524 2352 or 0411 872 416.**

## What's on in Perisher Blue

### TeleFest @ Perisher Blue: Sept. 6-7

Two days of freeheel action at Perisher Blue! Join other telemark skiers from all over Australia in clinics, demos and other fun for two days. See [www.wildernesssports.com.au](http://www.wildernesssports.com.au) to learn more.

### Steve Crazy Telemark Freeride Camps @ Perisher Blue: Sept. 6 & 7

Improve your freeheel skills over this two-day telemark camp. With professional freeheel instructors, this is the perfect opportunity to brush up on your skills or master new techniques in an all-freeheel environment. See [www.wildernesssports.com.au](http://www.wildernesssports.com.au) for further details.

### Subaru Australian Interschool Championships: Sept .10-14

Australia's best primary and secondary students will vie to become Australia's best in skiing and snowboarding disciplines.

### Subaru Australian Cross Country Championships: Sept .10

### APSI Spring Sessions: 19-20th September

Elective training for APSI members.

'Come to Perisher Blue & find out about snowsports instruction & the accreditation system in Australia '  
for more details - email: [alpine@apsi.net.au](mailto:alpine@apsi.net.au)

## Resort Information

### Snowmaking at Perisher Blue

Waking up to the hum of the snowmaking machines during the winter at Perisher Blue is a welcome sign that there will be fresh snow on the ground from the season's start to finish.

Perisher Blue invests heavily in snowmaking to ensure guests are provided with the best possible conditions all winter. In 2008, \$9.75 million has been spent (in addition to the \$3.6 million investment in 2007) on improving and expanding the resort's snowmaking system. The 2008 upgrade will deliver a new sustainable water supply, an upgraded pump station and 34 new automated snow guns in addition to the resort's 154 existing snow guns.

Techno Alpin has supplied the latest in automated snowmaking technology that will be up to nine times more energy efficient than existing systems and will improve snow reliability and quality.



Perisher Blue's snowmaking now covers 43.9 hectares (an additional 3.5 hectares in 2008) across the resort. 188 snow guns pump snow out across Front Valley, from Mid Station of the Forester Quad Express through Yabby Flat and Goats Gully to Front Valley (new in 2008) and Tube Town at Perisher: the base of the slopes, rope tow and Captain Cook J-bar at Smiggin Holes; Early Starter, Road Run/Boot Hill, Zali's, Snowsports School, Road Run to Roller Coaster and Excelsator (including Upper Excelsator) runs at Blue Cow.

Extensive work over the summer months is also carried out to create terrain that requires less snow to produce a safe and acceptable cover of snow for skiing and boarding. Examples of this work include summer grooming of the slopes, such as the removal of rocks and the erection of snow fences to help build up snow that can then be spread across the resort to locations which need additional cover.

### Future plans to increase snowmaking at Perisher Blue

Perisher Blue plans to increase snowmaking coverage to 110 hectares, aiming to have all the trails linking the four ski areas covered from the season's start to finish. All new snowmaking at Perisher Blue will be automated to ensure that all snowmaking opportunities are maximised and that the snowmaking operation is as efficient as it can be. Perisher Blue also plans to automate its existing snowmaking over time. The result - skiers and boarders will be able to ski to and from each of the four areas all season long!

### How does snowmaking work?

To understand snowmaking, it is first necessary to understand what exactly snow is!

#### What is snow?

By definition, snow is 'crystallized ice particles having the physical integrity and the strength to maintain their shape'. Normally created by Mother Nature, but when Mother Nature does not deliver and snow is needed for ski resorts, that's when the snowmakers step in to ensure visitors to the resort are able to enjoy on-snow activities.

Natural snow forms when water vapour in a cloud formation condenses into a raindrop. Given cold atmospheric conditions the raindrop freezes and forms an ice crystal with six tiny arms (called dendrites). This is the classic snowflake. On the other hand, man-made snow forms a compact six-sided structure more like an ice cube.

#### How does snowmaking make snow?

Simply put, snowmaking replicates nature by converting water into snow.

Snowmaking requires a significant level of infrastructure including water storages, pump stations compressors, pipes, electricity supply, hydrants and weather stations. Snowmaking machines (commonly referred to as 'snow guns'), make snow by breaking water into small particles, cooling the water by causing the particles to move through cold air, nucleating (the creation of small ice crystals) the particles and distributing the resulting snow on the ground.

The efficiency of snowmaking is largely driven by weather conditions. Low temperature and low humidity increase snowmaking efficiency, so in Australia, snowmaking is practicable mainly during the early to middle part of the season (typically mid-May to mid-August).

Efficiency of snowmaking is enhanced by snowmaking additives, which are added to the stream of water to promote the nucleation of the snow. Scientific research both here and overseas shows the additives cause no environmental concern. The National Parks and Wildlife authorise additive use.

### Water

Snowmaking 'borrows' water from the catchment and eventually returns it. The majority of the water used for Perisher Blue's snowmaking comes from a Snowy Hydro aqueduct. About 93% of the water used for the snowmaking is returned to the streams in the spring thaw starting in September. In many ways snowmaking stores water for the winter and returns it to the streams in the spring.

### What is required for snowmaking?

An extensive system of steel piping is required to supply the snowmaking operation with compressed air and high pressure water through separate pipes to the snowmaking hydrants on the slopes. A pumphouse at the end of the system produces the compressed air and has high pressure pumps to supply the water.

Perisher Blue has two plant rooms, one at Perisher's Front Valley and one at the base of the Terminal Quad Chair at Blue Cow.

### Front Valley

Front Valley has two large centrifugal compressors supplying a total of 340m<sup>3</sup> of compressed air per minute. During the compression process a substantial amount of heat is produced and this hot compressed air is then cooled to a usable temperature by piping it through a cooling tower. From the cooling tower the air then passes through air dryers. The dryers remove moisture by passing air through cylinders containing desiccant pellets that separate the moisture from the air. This moisture is then drained off.

Water is supplied from a pumpstation at North Perisher that fills a storage tank adjacent to the Front Valley plant room. Both air and water are then fed into the dual underground reticulation system onto Front Valley.

### Blue Cow

The Blue Cow plant room has two centrifugal compressors supplying 340m<sup>3</sup> of compressed air and four screw compressors supplying 168m<sup>3</sup> of compressed air, providing a total of 508m<sup>3</sup> of compressed air per minute. As in the Front Valley plant room, the air is then cooled and dried.

Water for Blue Cow is pumped from a Snowy Hydro aqueduct near the bottom of the Ridge Chair.

### Smiggin Holes

Smiggin Holes uses fan guns. A submersible pump in a submerged tank pumps water for use by the snow guns.

### Snow Guns

Perisher Blue uses two types of snow guns: air-water guns and fan guns.

Air-water guns use a jet of compressed air from a central compressor to break up a stream of water into fine particles and propel these into the atmosphere under conditions which causes them to freeze as particles of snow. Fan guns achieve a similar effect by passing a stream of water into an airflow produced by a fan.

While fans are slightly more energy-efficient than air-water guns, they produce snow in a broad dispersed band that's difficult to direct, especially in windy conditions.

Air-water guns produce a more concentrated stream of snow, which can be more effectively directed along confined trails or accumulated in a large pile for distribution by grooming machines.

Both types of snow guns can be mounted on a tower to increase the amount of time ('hang time') the water droplets are in the air, which increases the amount of snow that can be produced.



### Snow Quality

The snowmaker determines snow quality. Snowmakers will make either wet, medium or dry snow depending on the condition of the ski slope and weather conditions. Adjustments of the snow guns, which are made every half to one hour throughout the night, allow optimum snow production for the prevailing weather conditions, including temperature, humidity, wind speed and direction.

While adjusting the snow gun, the snowmaker may make the quality of snow wetter or drier depending on what the ski slope needs. Increasing water flow to a gun will result in a wetter snow and alternatively, decreasing water flow will result in a drier snow.

### Wet Snow

In making snow, the general objective is to make it wetter and denser than fresh, natural snow. Snowmakers try to make snow similar to three-day-old natural snow because it lasts longer, wears traffic better, resists wind scour, grooms more easily and is more energy-efficient to make. Wetter snow is more efficient than dry snow because more can be made with the same amount of equipment, the same energy and the same staff.

### Medium Snow

Medium snow is made when a run has adequate snow depth. Fresh, medium quality snow is easier to ski on than wetter snow. If snowmaking continues after slope grooming has taken place, medium snow quality is made so as not to destroy the groomed surface.

### Dry Snow

Dry snow is generally made just before the snowmaking operation finishes and leaves a lighter, powdery cover on the ski slope that we all love to ski and board on!

### How snow quality is checked

Each gun is checked for snow quality in two ways:

1. By grabbing a handful of snow and squeezing it; and
2. By letting the snow from the gun fall onto the snowmaker's jacket sleeve. (Some snowmakers prefer to use a plastic hand piece instead of clothing).

	Hand	Jacket	Plastic
<b>Wet</b>	No more than 1 - 2 drops of water. Will stick together and will be slightly translucent.	Some will bounce off jacket, about 5 - 10 mm. Some will stick to the jacket.	Will stick to the plate and be slightly white when pushed together.
<b>Medium</b>	No water drops. Mainly white in colour. Will stick together if crushed.	Some will bounce off jacket, about 5 - 10 mm. Some will stick to the jacket.	Will stick to the plate and be mainly white when pushed together.
<b>Dry</b>	No water drops. Will be powdery. Completely white in colour.	Some will bounce 20 mm plus. Some will fall off jacket	May not stick to the plate and will be all white when pushed together. Probably fall off plate.

Snow deposited by the snow guns is groomed flat by the groomers to produce a skiable slope before opening each morning. On very cold nights (-10°C or colder), it can be quite a job because of the amount of snow that can be produced.