

## **Want to Help Us? 2008-09 AK Block Contributors' Guidelines**

We are soliciting for contributors willing to help us gather more field test data to finalize the AK Block sizing. We are hoping to be able to present a finished sizing table at ISSW 2009 in Davos, Switzerland and then publish those results formally in a peer-reviewed journal. These will be the final steps necessary to make the AK Block one of the standard tests.

### **Risk Management**

No research project and no data is worth getting hurt or killed for! The slope angles we are working on will all be steep enough to put us in avalanche terrain. Remember always that "the avalanche does not know you are an expert." Our noble purpose of furthering science offers us no protection at all.

Stick to small slopes without serious consequences. If you feel uncomfortable with the situation you are in, do not delay moving to a safe zone. Use all rules of traveling in avalanche terrain when collecting this or any other data. This includes having an escape plan and rescue equipment and training.

### **Contributors' Packet**

The contributors' packet CD has these items on it:

1. Contributors' Guidelines in pdf format.
2. A data submission form in Excel .
3. The ISSW 2008 AK Block paper in pdf format, the most-recent summary of work to date on the project.
4. A one-page pdf of the sizing table so you can copy or print it on waterproof paper for field use.
5. A QuickTime movie presentation on the AK Block. To advance it, put your cursor on the image and click. Be sure to watch this, it contains detailed how-to sequence photos for AK Block layout, cutting, and loading that you will need to follow to get good data.

### **Most-wanted Data**

For our sizing study, we especially need data from teams of three testers in the right weight ranges, and we especially need data from other regions.

Our most useful data analysis will compare results from standard weight testers (80-90 kg) with side by side AK Block results sized by the table for light ( $\leq 70$  kg) and heavy ( $\geq 100$  kg) testers.

One set of three blocks helps a lot. Even a comparison between standard 80-90 kg and one other weight range is useful to us. A couple sets is better. We will be trying to get in some major block-farming days with multiple sets when conditions are right.

In theory, all testers will have the same values in this comparison. In reality, values will vary enough that we need a large sample to analyze before we can see if the scale needs adjustment.

### **Also-useful Data**

It is hard to find teams with ideal weights, but we will also analyze data from single testers loading three-block sets of varying size. Start with a block sized by the table. If it is mid-range (3 to 6), do two additional blocks, at plus and minus 10 kg sizes. If the standard size value is 2 or lower, do two larger blocks, at plus 10 and 20 kg size. If the standard size value is 7, do two smaller blocks, at minus 10 and 20 kg size.

In theory, 10Kg sizing difference should be equivalent to one step on the test scale. If we are consistently off one way or the other, we will need to tweak the scale accordingly.

### **Control Measures and Required Level of Detail**

Sorry snowboarders but for the sizing the tests need to be on skis or splitboards in ski mode. We need to minimize the variables in how we move onto and jump on the blocks. As snowboarders ourselves though, we'd love to encourage someone to analyze and write up comparison results from a few days of serious block farming with one tester switching from skis to snowboard.

These are all quick test sets, we do not need a full profile. We need only tester weight, scores, slope angle, ski waist width and type, slab type, weak layer type, and slab thickness, as listed on the Excel data forms.

Take a digital photo of each site, filenameed with the date (YYYYMMDD format) followed by an identifying number or letter for each photo (for numbers, a comma without space should follow the date for legibility and it should be two-digit unless it's a big three-digit day), followed by location, any necessary identifying details, and your name. Send the photos with each batch of data. To maximize the information in the filename, drop spaces, commas, and other punctuation (use underscore for a dash, as "sets 01\_04 if you need to indicate a series); begin each word or abbreviated word with a capital letter.

Photo filename example:

20081122cUnicornPeakNBowlMountaintownCOUSAThreeTesterSet01JohnSmith.jpg

Flash and a person in the scene helps the photos on foggy, snowy days. Don't worry about photo quality too much though, documentation is what is important.

### **The Two Data Entry Forms**

There are two worksheet forms:

1. For days when you have a team of two or three testers, to compare results of a block for the standard 80-90 kg weight with those sized by the table for heavy and light testers.
2. For days when there is only one tester, or your team has no one heavy or light enough to compare with standard 80-90 kg weight, varying the block size for one tester.

### **Using the Data Entry Forms**

**Date** - Use YYYYMMDD format

**Location** - Mountain or feature name, subsection, optional elevation/GPS, nearest town, state or equivalent, country.

**Set** - List each test set as a row in the table, and give it a sequential identifying number.

**Group** - We filled in some labeled Samples. You should identify each group of results you send in with something like "SLF Feb 09" to help us keep track of where each batch came from. It will help us a lot if you can send in data right away, within a week of collection, while everything is still fresh in your mind and any questions can be cleared up.

**Name** - Name of the person who was in charge of the recording and collection of the data. Be sure we have your e-mail and phone number so we can contact you if we have questions.

**Weights** - Each table breaks them out differently, but list weight without clothing. Best weight is just out of the shower in the morning.

**Scores** - Scores are as per the ISSW 2008 paper and the procedures in the QuickTime presentation. Sizing is by the 2008 table.

**Shear Quality** - As in the US "SWAG" guidelines, 1 is clean and fast, 2 is average, and 3 is slow or irregular.

**% of Block that Released** - Estimate proportion of block surface area that slid.

**Tester Name** - To help keep track if you have more than one tester loading the blocks. Minimizing the number of testers helps eliminate variables, but on some days one person may help for part of a session and another on the remainder.

**Slope angle in degrees** - Slope angle must not vary by more than  $\pm 1^\circ$  per set. List the average. Do not worry about minor or slight irregularities, use the average for the block.

**Slab Type** - Summarize it in two or three words.

**Weak Layer Type** - Summarize it in two or three words. We have a list of the categories we have found useful on the form.

**Weak Layer Depth in cm** - Distance from the snow surface to the top of the weak layer, measured vertically.

**Ski Waist Width in mm** - Measure narrow part of ski or splitboard half on base side.

**Ski Type** - Alpine (downhill alpine binding, not touring), AT (Alpine Touring or Randonee binding), Tele (Telemark or freeheel binding), Splitboard (must be tested in ski mode), Reverse (note if skis are reverse cambered), X-C (cross country, nordic bindings and narrow skis).

**Photo** - Put in the filename for the photo for that set. If you do a series of rows, one photo of the whole setup can be used for all.

**Comments** - Anything else you think will help us interpret your data.

### **Preparation - Test Slope Choice**

It's really important to choose test sites for minimal spatial variability. Look for the most uniform slopes so block sets can be farmed without varying the slope angle or loading conditions.

You will want to have a mental list of suitable slopes in your area so you can choose the best ones for the conditions and for where you want to go otherwise. Slopes need to be large enough to do each test set as a row of immediately adjacent blocks

Work upslope so you don't disturb the untested snow, but take care with your risk management. Keep the slopes and consequences small enough to be within acceptable limits, and be especially cautious with deep or widespread instability.

### **Preparation - Tester List**

It's often very difficult to find testers in the right weight range who are available on any given day. Make up a list of available and interested people in your area, and be sure you have several light and heavy testers you can contact by e-mail and phone when conditions are right. Mid-range testers are generally much easier to find. It may feel weird to think of dividing your ski buddies into weight classes, but you will need to do just that.

### **Preparation - Timing**

New weak snow yielding 1 to 2 values transitions rapidly to old strong snow that yields only 6 and 7 values, and it is data from the transitional midrange of 3 to 5 that we need the most. Data from the full range is useful, but weak 1 and 2 conditions are so weak that sizing does not make much difference, and super-strong blocks are often so off the scale that block size again makes little difference.

Midrange conditions are hard to target. The window is often only 24 hours or so before things either slide or strengthen. That means you need to monitor conditions and jump quickly on them when they are good.

We have found that some field days have such variable conditions that we just cannot do these tests. Wind transport is the primary architect of too-variable conditions, but surface hoar and other conditions can cause us to cancel studies or reject the data for that day.

### **Efficiency - Suitable Weak Layers**

Once you know where the principal weak layer is, you need only cut or dig through it. Days with multiple weak layers tend to be too complex for good testing, but can sometimes be made to work by cutting and digging only to the top weak layer and doing all tests on it. Comparison between different weak layers does not work. Weak layers must be distinct and consistent from block to block.

### **Efficiency - Layout and Digging**

We are not recommending using a saw to cut clean blocks before digging them out for this study, but take care to lay out and dig uniform, clean, rectangular blocks with vertical walls and proper dimensions.

Be sure to review the how-to sequence photos in the AK Block presentation QuickTime video for proper layout, digging, and loading technique.

## **Contacts**

**Be sure to send us an e-mail right away if you think you might want to help, so you are on our contributors' e-mail list for any updates and status reports we may send out.** Include your phone number so we can contact you to promptly clear up any questions. Bill Glude will be our primary contact.

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We will also post updates on the Southeast Alaska Avalanche Center research page:

[http://www.avalanche.org/~seaac/Pages1/ResearchSAAC04\\_05.html](http://www.avalanche.org/~seaac/Pages1/ResearchSAAC04_05.html)