

Thermal cube conference call May 21, 2015

10:00 to 10:15

Dave Schroeder AB

Kelsy Gibos AB

Dan Thompson CFS

Tom Schiks U of T

Shammawi Anderson U of A

Ray Ault FPInnovations

Thanks everyone for dialing-in.

RA Background – 2<sup>nd</sup> call. Shammawi provided first design and has revised the design based on our feedback. Purpose is to review revised design and fine-tune thermal cube for construction prior to the experimental fires in the NWT.

RA Sent out minutes from May 11 call – any changes needed to those minutes? None voiced.

SA Revisions to design:

Base plate is threaded to poles to allow for easy removal and reduced size in transport. Two poles, different diameters, with one pole fitting inside the other.

Added holes to base plate for anchoring.

Added screws to cover plate of instrument box to secure in wind conditions.

Restricted length of poles to two heights 100 cm and 50 cm.

Will paint in bright color after construction for added visibility.

DT Will a cotter pin is used to secure the poles?

SA A pin will pass through the poles (cotter pin) to hold the instrument at desired height.

DS It will be good to have a prototype to field test and based on field experience we may want to change the height of the instrument and the pre-set holes. However, these heights (50 & 100cm) are a good start.

DS Another idea, add a Go Pro type camera to the box. Really useful when we want to explain radiant energy numbers associated with a visual explanation.

TS Size of Go Pro is 2 x 3 inches.

SA We could look at modifying the thermal cube box later.

RA The design of the base plate and pole might allow for various sensors or cameras to be added on top. Rather than changing the thermal cube and adding size and weight we might want to use the stand design for another second unit.

DT How thick is the insulation for the data logger?

SA Internal insulation is ¼ inch thick.

Some discussion around appropriate thickness and trade-offs. Short discussion around use of cooling packs.

DS Cooling packs most likely would restrict pre-fire deployment time allowed to less than 12 hours. Suggest we avoid cooling packs.

RA no other ideas put forward, plan is for Shammawi to build a prototype for the NWT in late June. We will document the performance and make changes as needed. We will send an update on the project immediately after the NWT deployment.

Next call will be in the fall after fire season winds down.

Call completed 10:15

Thermal cube conference call May 11, 2015

Dan Thompson CFS

Dana Hicks BC

Jennifer Young YT

Kelsy Gibos AB

Dave Schroeder AB

Tom Schiks U of T

Shammawi Anderson U of A

Ray Ault FPI

RA. Thanks to everyone for dialing in on short notice.

RA. Introductions, unable to dial-in today Robert Osiowy - Parks Canada, Larry Nixon - NT, Clifton McKay-AB.

RA. Short description of Thermal Cube and documents emailed on Friday.

DS. Described the benefits of Shammawi's design. Suggested the data logger needs to be cable of being deployed in the field at least 24 hour pre-burn. Discussed Mark Ackerman's solution for rate of spread data loggers.

DT. Base of the stand would benefit from being detachable from cube. Consider the size of the helicopter-basket in design and size of the stand.

DT. Looking at the lid, add a latch or method to ensure wind will not open it.

JY. Keep in mind safety around helicopters. The height and size when under the rotor and loading.

DT. A high visibility color is preferred.

DH. Portability is important. Should fit into pack sack not carried in hands. Suggest holes in base plate to spike down for add stability.

JY / DH. Rather than multiple heights identify 2 or 3 configurations to help with consistent results and comparison.

JY. Will the base plate heating influence the measurements?

SA. Possibly. Will examine in the NWT.

Question Plan for the summer? Envision testing prototype in NWT this June. Make necessary modifications and then collecting field data over the summer as opportunities arise with the provinces.

Question How many will we build? Data accuracy and conditions will dictate. Expect 3 for this summer as prototypes. Later, depending on interest and feedback may build at the U of A or have a machine shop build.

TS. A pivoting head for slope would be useful.

DT. Would be able to estimate slope effect using radiant physics. Would be an approach to answering error from slope and pivot head.

DS. In the long term a shared web data base would promote data consistency. Protocol will be needed to ensure apples to apples numbers.

DH. Stick with 2 standard heights. Will benefit with fewer hoppers of data.

KG. Portability, less stuff to carry is important. Possibly two styles, one for drive-in and one for fly-in. If it is cumbersome it will limit the use.

DS. A design that eliminates burying the data logger is a big step forward. Discussed ideas on how we provide context for KW/m<sup>2</sup> compared to traditional KW/m. Will want to develop a visual guide to relate the two measurements.

RA. Thanks everyone for your ideas. Shammawi will have an update for us for another conference call May 20 @ 10am MST.