Volume 22 Issue 2

March/ April 2010

WISCONSIN BALLOON GROUP

"The Ventline"

Pete Asp (left) and Gary Britton (right) at the Mid-west Safety Seminar

Inside this issue:

Greetings from your WBG Director

With this lovely early spring weather in the upper Midwest, those of us who haven't had a chance to do any flying since last fall are getting anxious. March safety seminars always get me thinking of the new flying season anyway, so now having had our seminar early in the month, and warm, dry weather late in the month, I'm thinking it is time to start doing some flight planning. How about you?

Thanks to Pete Asp for once again organizing the Midwest Safety Seminar. This was the 33rd occurrence of this event, originally alternating between an Illinois location and a Wisconsin location. Since the demise of the Northeast Illinois Balloon Group a few years ago, and the merging of its members into WBG, the seminar has been sponsored by WBG and has been held in Wisconsin. Pete and his committee arranged for a very informative lineup of speakers from WBG membership and other sections of the US as well. Their expertise was appreciated by all who attended. Elsewhere in this newsletter is a comprehensive review of the seminar by Su Louck. Be sure to read it.

As announced previously, WBG is making a scholarship available for 13-18 year old youth to attend one of the BFA Junior Balloonist Camps. The scholarship eligibility requirements and the application procedures, and form, are included in this newsletter as well as at the WBG website. If you know a young person who is eligible and interested in ballooning, please encourage them to apply for one of the camps and for a scholarship that will pay for the camp fee.

As you will note on subsequent pages, the WBG Spring Social has been scheduled for May 8. Before you get your spring calendar all filled with other social events and balloon flights, I hope that you will put that dinner meeting on it. Once again, Social Directors Corey and Daron have lined up an interesting program by one of our own members. I look forward to seeing you at the dinner in May, and in the air very soon!

Gary Britton

Civil Air Patrol Flight Encampment

The Civil Air Patrol is again conducting their summer flight encampment at Coles County Airport Mattoon, Illinois. At this camp we have glider operations, power flight operations as well as balloon operating. We are always looking for volunteers from the ballooning family, both pilots and crew, to add their expertise to our flight camp. If you are interested in coming please contact me for details. I have been doing this flight camp for over 20 years and each year I feel that we make a difference in the lives of young people and often create future pilots. Help us along with the BFA Junior Balloonist Program to keep ballooning alive through education. Thank You!

Su (Victor) Louck

susan.victor@hughes.net

309-537-9054

Upcoming Events

May 28-29, 2010	**Southern Wisconsin Airfest** Contact: Jim Bushelle N1965n@ticon.net	Janesville, WI
June 4-6, 2010	**Manitowoc Air Show and Hot Air Balloon Rally** Contact: Ken Walter WiWinddancer@cs.com	Manitowoc, WI
June 18-20, 2010	**Monroe Balloon Rally** Contact: Matt Urban urban@tds.net	Monroe, WI
July 8-11, 2010	**Wausau Balloon Rally & Glow**	Wausau, WI
July 30-Aug 7, 2010	**National Balloon Classic**	Indianola, IA
August 6-8, 2010	**Seymour Hamburger Fest and Balloon Rally**	Seymour, WI
August 13-15, 2010	**Hartford Balloon Rally** Contact: Ken Walter WiWinddancer@cs.com	Hartford, WI
August 27-29, 2010	**Wisconsin Rapids Balloon Rally / Children's Miracle Network**	Wisconsin Rapids, WI
October 2-10, 2010	**Albuquerque International Balloon Fiesta**	Albuquerque, NM

The listing of an event on this page does not imply endorsement of that event by the Wisconsin Balloon Group nor its Leadership Team.

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Looking For Pilots

- *When:* Saturday May 1-2, 2010
- *Where:* Montello, WI (west of Madison)
- *Looking For:* 5 balloonists to go to Moose Fest at Montello. They would like to have a night glow on Saturday night with the chance of flying passengers (with the pilot getting some of the money to compensate for expenses). Free propane and hotel room for 5-6 pilots, double queen rooms supplied.
- *Interested?* : Contact— Phil Whittington pjhw1827@yahoo.com (Phil used to work @ Cameron)

WBG Spring Fling

Saturday, May 8th

Featuring guest speaker: **Jeff Trzebiatowski**

" A Climb to 12,000 feet "

6 pm cocktails

7 pm buffet dinner

Featuring beef tips, chicken cordon bleu, red potatoes, and more

Program to follow

Charcoal Grill & Rotisserie

15375 West Greenfield Avenue, New Berlin

www.charcoalgrill.com

Adults buffet $25, children's meals $6

Please RSVP to Corey and Sarah Goebel by APRIL 17th
twogoebels@yahoo.com

33rd Midwest Balloon Safety Seminar

Wisconsin Balloon Group once again sponsored the Midwest Balloon Safety Seminar, our 33rd! The seminar was superbly organized by Pete Asp and the WBG team of Gary Britton, Rod VanWyngeeren, Debbie Spaeth, David Ross & Kathy Lester-Ross along with Herb & Jan Kohlman. Over 70 participant's knowledge of balloon safety was amplified by 8 accomplished guest speakers.

The thread which tied the seminar together "Keep Ballooning Alive!" appeared first in Beth Miller's talk about 'reclaiming our sport'. As new president of IMC she combined her expertise and knowledge of accidents and insurance with Gordon Schwontkowski's who is our premier spokesman for "Crewing Essentials". Beth described Gordon and our crews as the safety edge for ballooning. She stressed her company's use of waivers as the best means to protect the pilot, their assets and the future of ballooning through self regulation. She also explained IMC's position on Albuquerque Balloon Fest and it's impact on the sport. Some highlights from Beth were the importance of passenger preflight briefings to obtain medical facts from them; animal coverage limits; noise pollution exclusions; liquor liability and pilot's remaining in the basket during a 'walking out' maneuver.

Gordon's emphasis was also to "Keep Ballooning Alive", and how a well trained crew can do this and make for a safe and fun flight. He covered the ideas of pibal release at the landing field to aid the pilot in a safe descent; radioing about powerlines along the flight path; first aid training for the crew and the pilot; obtaining landing permission and good land owner relations; contacting towers at airports for retrieval permission; magnetic fields around power lines; using 2 tie offs during glows/launches and much, much more. All this to aid the pilot and crew to "Protect yourself and this beautiful creation - the hot air balloon." which is a quote from Ed Yost who did the forward to Gordon's manual and who was as Gordon said "a fanatic on crew safety."

Ken Walter filled us in on the 'new' FAA Fast Team - FAAST and updated us on the BFA. To again keep ballooning alive we need to consider working with the FAA by registering with them at FAASafety.gov; joining the wings program and joining the BFA. Registered pilots in this country have dropped from over 5000 to just over 2000. The BFA is doing its part to keep us going through programs such as Junior Balloonists; attendance at Air Venture with EAA and local meetings/safety seminars. We can do our part by participating in these activities. Then as our Regional Director of BFA, Ken presented The 2009 BFA Great Lake's Regional Director's Award to Gordon Schwontkowski for his outstanding contribution to the sport of ballooning in our region. This is an award given yearly by each regional director and Ken rightly choose Gordon for the honor. We are all encouraged to come to

Beth Miller from IMC with Gordon Schwontkowski

Brad Temeyer giving his enthusiastic weather presentation

the BFA's honoring of Tom Sheppard with the Life Time Achievement Award to be presented at the Balloon Museum in Indianola, Iowa on Sunday August 1, 2010 at 2:00 in the afternoon.

We were also informed that the BFA National Convention and the 50th anniversary of BFA will be celebrated in Des Moines Iowa April 7-10, 2011. Milwaukee was considered through the grand efforts of our WBG team but lost out in the end. At least it's in the midwest and we won't have to travel too far from home to attend.

Brad Temeyer enlightened us with the basics of weather, new for some and a good review for the rest. My favorite topics were understanding; types of fog, inversion layers and predicting wind, knowing to ask the briefer about what the VAD windprofiler is doing, as well as internet resources for finding out this helpful information. I believe him when he says you can know the winds if you know the heights of the inversion and the temperature. I just need practice reading the chart.

Tarp Head covered maintenance and repair with great clarity. The hand outs were also wonderful to add to our library of knowledge. A safely maintained aircraft makes for safe flying which will extend our aircraft life and the life of ballooning.

Gordon Schwontkowski being presented with the 2009 BFA Great Lakes Regional Director's Award by Ken Walter

A wonderful luncheon was then enjoyed by all as was the yummy breakfast earlier. We had a chance during lunch to catch up with friends who have also been frozen in time waiting for the flying season to begin. It was most enjoyable.

After lunch, Keith Wohlfert, our resident expert on all things powerful, gave another electrifying talk on power, power lines and safety awareness when involved in powerline contact. A great review to begin another safe and survivable flying season.

Marsha Treacy spoke on aeronautical decision making including risk management. Her emphasis was on protecting pilots and thus protecting our sport from hazardous attitudes such as those shown at Albuquerque this past year. Pilots need to protect themselves by checking their personal attitudes as part of a good preflight check list. Along with attitude, a pilot needs to check their personal fitness; their aircraft's fitness; their flight environment and their support equipment. After a full assessment which could include Marsha's 'decision making self exam', a pilot may decide not to fly because, "It is never a bad decision not to fly." Even after a good preflight a pilot must keep these elements in mind during flight to make those decisions which create a safe flight. As Marsha says, Flying is safe, Crashing is Dangerous." But, any one of these elements can cause a crash or a bad flight if not thought about before, during and after the flight.

Gordon conducted a break out session for crew during the last speaker. One highlight among all the great ideas he gave was a fast two person method for packing the envelope. It allows for less crew effort, less friction on the envelope, and gives the pilot time to secure the basket while the crew packs up. My crew says they'll be trying this on our next pack-up.

Bill Zangs summed up the entire day with a review of 14CFR from the FAR's. Bill stressed that safe flying comes from following the FAR's; from the core values found in them; from a pilot taking responsibility for the entire pre-flight, flight and post flight and from pilots regulating themselves as well as their fellow pilots. Pilots need to cover all the bases including calling flight service every flight to check for NOTAM's, TFR's and updated weather which also allows us to get on record as a responsible pilot who has been informed and is personally knowledgable of all current conditions affecting the flight. Bill stressed that if we do not regulate ourselves and our fellow pilots, even if they are friends, we will soon be regulated out of the air.

All in all it was great seminar which makes for a good start to our flying season.

Safe flying and Soft Landings!

Su (Victor) Louck

Enjoying lunch

Marsha Treacy speaking on pilot decision making

Keith's "power" talk

Ken giving a BFA update

Bill makes even the driest of subjects fun.

Gordon sharing from his vast experiences

******Announcement

If the person who wanted larger copies of Marsha Treacy's handout (from the Safety Seminar) like to contact Pete Asp, he'll be happy to forward them to you.

Pete Asp, (262) 593-2251, www.aballoonrepair.com

BFA Jr. Balloonist 2010 Hot Air Camp

WBG financial support for participant(s)

In order to support participation in the **BFA Jr. Balloonist Hot Air Camp** program, the Wisconsin Balloon Group is offering one full scholarship of $395 to cover the camp fee, or two partial scholarships of at least $200 each. The camps will be held in Texas and Michigan July 11-15 and July 18-22 respectively. Additional information and the BFA registration form for the camps can be found at the web site http://www.bfacamp.com/.

WBG scholarship policies and procedures are as follows.

a. All Wisconsin youth from 13-18 years of age are eligible to apply for the scholarship. Non-Wisconsin youth who are the son or daughter of a member of the Wisconsin Balloon Group are also eligible.

b. The completed WBG Scholarship application form is to be submitted to the WBG Executive Director by June 1, 2010.

c. If there is more than one applicant, determination of whether to aware one or two scholarships, and the selection of the scholarship winner(s) will be made by a review committee consisting of Gary Britton, WBG Executive Director; Ken Walter, BFA Great Lakes Regional Director; and Tom Sheppard, BFA and WBG life member and former BFA President.

d. Scholarship recipients are expected to submit a report for the Sept-Oct WBG Ventline newsletter and/or make a presentation at the WBG Winter Social in January 2011.

Written by:Glen Moyer

Reprinted from the BFA website.

A sign of Spring !

Dates Announced for 2010-12 Nationals and Worlds

Andy Baird, BFA Board member and Paul Petrehn, Chairman of the HACD have officially announced that the 2012 FAI 20th World Hot Air Balloon Championship will be held in Battle Creek, MI August 17-25, 2012. The organizer, Holiday Balloon Fest, Inc has once again teamed up with the BFA to host this World class event and to bring back the World Championship to the United States after what has been an almost 17-year hiatus. Both organizations are extremely pleased with the accomplishments thus far and look forward to several more years of success. Following the success of the 2009 US Nationals, the HBF and BFA will again host the Nationals in Battle Creek this year. We are pleased to reveal to you the dates for the next few years below and look forward to everyone's involvement, support, and some truly competitive flying.

44th US Nationals Aug. 23-28th, 2010

45th US Nationals Aug. 22-27th, 2011

2011 Pre Worlds

2012 20th FAI World Championship Aug. 17-25th, 2012

WBG SCHOLARSHIP APPLICATION

BFA Jr. Balloonist Camp

Name: _____ **Address:** _____

City: _____ **State:** _____ **Zip:** _____

Phone: _____ **e-mail:** _____

Date of birth: _____

Name(s) of parent(s) or legal guardian: _____

_____ **Address:** _____

City: _____ **State:** _____ **Zip:** _____

Phone: _____ **e-mail:** _____

Briefly describe your background or experience and interest in ballooning or other aviation.

Enclose an essay describing why you want to attend the BFA Jr. Balloonist Camp and how the expected experience will relate to your personal, educational or professional goals. The essay should be double spaced and approximately one page in length

Signature of applicant: _____

Signature of parent or guardian: _____

Complete this application and send it via e-mail to gary.britton@uwc.edu, or via surface mail to:

Gary Britton, Executive Director

Wisconsin Balloon Group

4458 Summit Ridge

Slinger, WI 53086

★★★★★★

The next issue of the Ventline probably won't be distributed until after Memorial Day. With that in mind, this next article is in tribute to all the soldiers (and their families) who have served the United States both past and present. Although it is not an article about ballooning, it shows how the selfless act of a pilot and his crew surely made an impact on one soldier's family & his escort during his final flight home.

God Bless this Soldier & his Pilot

He (the pilot) writes: My lead flight attendant came to me and said, "We have an H.R. on this flight." (H.R. stands for human remains.) "Are they military?" I asked.

'Yes', she said.

'Is there an escort?' I asked.

'Yes, I already assigned him a seat'.

'Would you please tell him to come to the flight deck. You can board him early," I said. A short while later, a young army sergeant entered the flight deck. He was the image of the perfectly dressed soldier. He introduced himself and I asked him about his soldier. The escorts of these fallen soldiers talk about them as if they are still alive and still with us.

'My soldier is on his way back to Virginia', he said. He proceeded to answer my questions, but offered no words on his own.

I asked him if there was anything I could do for him and he said no. I told him that he had the toughest job in the military and that I appreciated the work that he does for the families of our fallen soldiers. The first officer and I got up out of our seats to shake his hand. He left the flight deck to find his seat.

We completed our preflight checks, pushed back and performed an uneventful departure. About 30 minutes into our flight I received a call from the lead flight attendant in the cabin. 'I just found out the family of the soldier we are carrying, is on board', he said. He then proceeded to tell me that the father, mother, wife and 2 - year old daughter were escorting their son, husband, and father home. The family was upset because they were unable to see the container that the soldier was in before we left. We were on our way to a major hub at which the family was going to wait four hours for the connecting flight home to Virginia .

The father of the soldier told the flight attendant that knowing his son was below him in the cargo compartment and being unable to see him was too much for him and the family to bear. He had asked the flight attendant if there was anything that could be done to allow them to see him upon our arrival. The family wanted to be outside by the cargo door to watch the soldier being taken off the airplane. I could hear the desperation in the flight attendants voice when he asked me if there was anything I could do.

'I'm on it', I said. I told him that I would get back to him.

Airborne communication with my company normally occurs in the form of e - mail like messages. I decided to bypass this system and contact my flight dispatcher directly on a secondary radio. There is a radio operator in the operations control center who connects you to the telephone of the dispatcher. I was in direct contact with the dispatcher. I explained the situation I had on board with the family and what it was the family wanted. He said he understood and that he would get back to me.

Two hours went by and I had not heard from the dispatcher.

We were going to get busy soon and I needed to know what to tell the family. I sent a text message asking for an update. I saved the return message from the dispatcher and this following is the text:

'Captain, sorry it has taken so long to get back to you. There is policy on this now and I had to check on a few things. Upon your arrival a dedicated escort team will meet the aircraft. The team will escort the family to the ramp and planeside. A van will be used to load the remains with a secondary van for the family. The family will be taken to their departure area and escorted into the terminal where the remains can be seen on the ramp. It is a private area for the family only. When the connecting aircraft arrives, the family will be escorted onto the ramp and planeside to watch the remains being loaded for the final leg home. Captain, most of us here in flight control are veterans. Please pass our condolences on to the family. Thanks.'

(continued next page)

I sent a message back telling flight control thanks for a good job. I printed out the message and gave it to the lead flight attendant to pass on to the father. The lead flight attendant was very thankful and told me, 'You have no idea how much this will mean to them.'

Things started getting busy for the descent, approach and landing. After landing, we cleared the runway and taxied to the ramp area. The ramp is huge with 15 gates on either side of the alleyway. It is always a busy area with aircraft maneuvering every which way to enter and exit.

When we entered the ramp and checked in with the ramp controller, we were told that all traffic was being held for us.

'There is a team in place to meet the aircraft', we were told. It looked like it was all coming together, then I realized that once we turned the seat belt sign off, everyone would stand up at once and delay the family from getting off the airplane. As we approached our gate, I asked the copilot to tell the ramp controller we were going to stop short of the gate to make an announcement to the passengers. He did that and he ramp controller said,

'Take your time.'

I stopped the aircraft and set the parking brake. I pushed the public address button and said, 'Ladies and gentleman, this is your Captain speaking I have stopped short of our gate to make a special announcement.

We have a passenger on board who deserves our honor and respect. His Name is Private XXXXXX, a soldier who recently lost his life. Private XXXXXX is under your feet in the cargo hold. Escorting him today is Army Sergeant XXXXXXX.

Also, on board are his father, mother, wife, and daughter. Your entire flight crew is asking for all passengers to remain in their seats to allow the family to exit the aircraft first. Thank you.'

We continued the turn to the gate, came to a stop and started our shutdown procedures. A couple of minutes later I opened the cockpit door. I found the two forward flight attendants crying, something you just do not see. I was told that after we came to a stop, every passenger on the aircraft stayed in their seats, waiting for the family to exit the aircraft.

When the family got up and gathered their things, a passenger slowly started to clap his hands. Moments later more passengers joined in and soon the entire aircraft was clapping. Words of 'God Bless You', I'm sorry, thank you, be proud, and other kind words were uttered to the family as they made their way down the aisle and out of the airplane. They were escorted down to the ramp to finally be with their loved one.

Many of the passengers disembarking thanked me for the announcement I had made. They were just words, I told them, I could say them over and over again, but nothing I say will bring back that brave soldier.

I respectfully ask that all of you reflect on this event and the sacrifices that millions of our men and women have made to ensure our freedom and safety in these United States of America .

Foot note from the person who sent this:

As a Korean & Viet Nam Veteran I can only think of all the veterans including the ones that rode below the deck on their way home and how they we were treated. When I read things like this I am proud that our country has not turned their backs on our soldiers returning from the various war zones today and give them the respect they so deserve.

I know every Viet Nam veteran who reads this will have tears in their eyes, including me.

You don't have to be a Viet Nam Vet to have tears in your eyes while reading this. Thank you to all who have served and are still serving.

A Grateful Nation. God Bless the USA.

James R. McBrayer USAF Retired

*****Article reprinted from the internet

No matter what your view on war is, please don't forget to thank our American soldier for all the sacrifices that he / she and their families give for our great country.

We wish to thank the following members for submitting information for this issue. They are in no particular order: Su Victor-Louck, Daron Powers, Brad Temeyer, Gary Britton, Glen Moyer, and Debbie Spaeth ~~ *The Editors*

Estimating Wind Speed

By: Brad Temeyer

Recently, I found out that it possible to arrive at a good estimate of the wind speed at any height in the boundary layer (the layer near the surface) based on **one** surface observation. I am sure you are asking yourself, just as I did, how accurate is this? Believe it or not, this is fairly accurate based on a few assumptions that you make.

To understand how this equation works, we first need a crash course (or a friendly refresher) in boundary layer meteorology. The boundary layer is a well mixed layer that develops near the surface throughout the day due to the heating from the sun. In a strict definition, the boundary layer is the layer of air that is in communication with the earth's surface through the process of turbulent transfer. Early in the morning when the sun rises, the amount of solar radiation that reaches the earth's surface is small. However, as the sun rises, the amount of solar radiation reaching the surface intensifies. As the amount of energy intensifies, the surface of the earth heats the air from below. The more intense solar energy this is, the faster the boundary layer grows. The boundary layer grows throughout the day through turbulence and mixing. Turbulent eddies distribute both heat and moisture throughout the boundary layer. The depth of the boundary layer is dependant on many quantities including cloud cover, stability of the atmosphere and time of year. The depth of the boundary layer can vary from a few hundred meters (~700 ft) to several kilometers depending on these varying quantities.

Because of these turbulent eddies that are constantly redistributing the air provided the energy source is still present, certain properties of the atmosphere are constant throughout the mixed layer. Other properties, such as the winds speed are not constant through the mixed layer, but have been studied and are well understood. The measured wind speed is dependant on the roughness of the surface in the area around the observations. As the surface becomes increasingly rough, we would expect winds to be less in the lower part of the boundary layer due to friction. With an increase in height, the wind speed increases similar to that shown in figure 1. Through research, it was found that the shape of the wind profile in the boundary layer is similar to the graph of an exponential function. Therefore, if we can arrive at an estimate of the surface roughness, we can estimate the wind speed in a well mixed boundary layer.

This method is good for determining the wind speeds aloft in the afternoon and evening hours after a well mixed layer has developed. Because mixing does not take place overnight, this method **would not** be able to capture various features such as the low level jet and thus would not be useful for estimating wind speeds for morning flights.

Next, I will present the equation that can be used to find the wind speed at any altitude in the mixed layer along with a few examples.

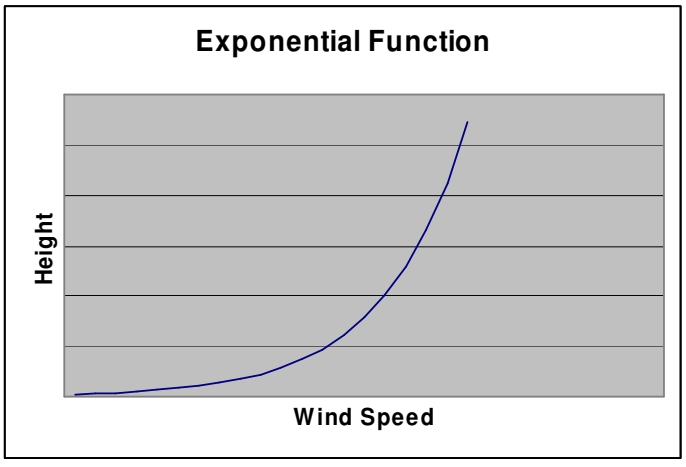

Fig.1 Wind speed increases with height as an exponential function.

Here is the formula to find the wind speed at any height in the boundary layer (mixed layer).

The formula itself is fairly simple and straight forward:

$$U(z) = \frac{u^*}{0.4} \ln\left(\frac{z}{z_o}\right)$$

where u^* is called the friction velocity, z is the height (in meters) of the observation or level you would like to compute the wind at, z_o is called the roughness parameter that is based on the surface characteristics (table 1) and U(z) is the wind speed in meters per second. The friction velocity is constant throughout the entire boundary layer. The natural log in this equation comes from the fact that the wind speed is exponential with height. The inverse of an exponential function is a logarithmic function. We need to use the logarithmic function because we are solving for the wind speed and not for the height.

Table 1: Values for z_o.

Type of Surface	z_o (meters)	Type of Surface	z_o (meters)
Ice	0.00001	Coniferous forest (pine trees)	1.1
Dry Lake Bed	0.00003	Alfalfa	0.03
Calm open water	0.0001	Potato Fields	0.04
Desert	0.0003	Cotton	0.13
Short Grass	0.001	Citrus Orchards	0.31 – 0.4
Farmland, snow covered	0.002	Small Towns	0.4 – 0.5
Bare Soil, tilled	0.002 – 0.006	Residential, low density	1.1
Tall grass	0.09	Urban Buildings	1.75 – 3.20
Forest, level topography	**0.7 – 1.2**	**Agricultural crops**	**0.04 – 0.20**

Let's apply this formula to a few examples:

Say that the 5 PM news reports on a warm sunny July day a wind speed at the Des Moines International airport of 9 mph (4 meters per second). What is the wind at 300 meters (~1000 ft) in the atmosphere assuming the boundary layer extends higher than this?

It is important to note that most surface wind measurements are taken at 10 meters. First, we need to estimate the type of surface found at and around the observation. The ground cover around the Des Moines airport is open fields and farmland along with some scattered trees. Given this surface type, the roughness parameter would vary between 0.1 and 0.7 depending on the amount of trees and the size of the crop at this time. Let's assume that the crop is fairly tall and there are few trees in the area. This would allow us to assume a roughness parameter of around 0.2 meters. Now, we need to use the wind speed to determine the friction velocity.

Using the equation from above we get:

$$4 = \frac{u^*}{0.4}\ln(\frac{10}{0.2})$$

where the 4 on the left hand side of the equation is our wind speed in meters per second, the 10 in the natural log term comes from the observation height (10 meters) and 0.2 is from the assumptions we made about the surface near the airport. Therefore we need to rearrange this formula so we can solve for u^*.

First we move the 0.4 to the other side of the equation:

$$0.4 * 4 = u^* \ln(\frac{10}{0.2})$$

Then, we need to move the natural logarithm on the right hand side of the equation to the left hand side. If we divide each side of the equation by $\ln(\frac{10}{0.2})$, then we get the following:

$$\frac{0.4 * 4}{\ln(\frac{10}{0.2})} = \frac{u^* \ln(\frac{10}{0.2})}{\ln(\frac{10}{0.2})}$$

$$\frac{0.4 * 4}{\ln(\frac{10}{0.2})} = u^*$$

Plugging this into a calculator, you get u^* = 0.4089 meters per second.

Since this value is constant throughout the boundary layer, we can use the information we have to solve for the wind at any height. Therefore, if we wanted to find the wind speed at 300 meters, we get:

$$U(z) = \frac{u^*}{0.4}\ln(\frac{z}{z_o})$$

where u^* = 0. 4089 meters per second, z = 300 (the height of the wind speed in meters that we are interested in) and z_o= 0.2. Therefore we get,

$$U(z) = \frac{0.4089}{0.4}\ln(\frac{300}{0.2})$$

, which equals 7.476 meters per second or about 16.72 miles per hour.

Let's suppose instead that the wind speed was recorded by a school net station. The height above ground level at which the school net station makes measurements varies because most (if not all) the school net weather stations are on the roof of the school. To keep things simple, I will assume the height of the school to be 10 meters. For this case, we will also assume a hot, sunny day in July. Therefore, the only thing changing in this problem will be the surface roughness parameter due to the terrain around the school.

Most schools are located in the town or city, so we would expect the surface roughness parameter to be slightly higher for this problem. To arrive at an estimate of the surface roughness parameter, let's assign a

specific school to this problem. Since Indianola is a popular place to fly, lets choose the school there. The only schoolnet station I found in Indianola was located at Emerson Elementary School. I am not too familiar with Emerson Elementary School in Indianola, but it appears that it is located in a sparsely populated residential area. If this correct, we could assume a roughness parameter of around 1.1. Assuming this roughness parameter, we can calculate the wind speed at any height in the boundary layer. In this case, as in the last, we will assume a wind speed of 9 mph was measured.

Plugging these values into our equation for the various values, we get:

$$4 = \frac{u^*}{0.4}\ln(\frac{10}{1.1})$$

Solving for u^*, we get

$$u^* = \frac{0.4 * 4}{\ln(\frac{10}{1.1})} = 0.7248$$

meters per second

Solving for the wind at 300 meters (~1,000 ft), we get

$$U(z) = \frac{0.7248}{0.4}\ln(\frac{300}{1.1}) = 10.16$$

meters per second which is approximately 22.73 mph.

These examples show how important it is to arrive at an accurate estimate of the surface roughness parameter. The surface roughness parameter can change both due to location and season. This also shows how dependant the strength of the wind is based on the surface below. Once you arrive at an estimate of the surface characteristics, using this simple equation will give you an estimate of the wind speed at any height in the mixed layer near the surface.

Deadline for National Balloon Museum Window Contest approaching quickly

The deadline for the submission of designs for new stained glass windows at the National Balloon Museum is Friday, April 30th. The designs will represent the six BFA regions and a seventh window will represent ballooning in Iowa . Details of the contest were in the March/April 2010 BALLOONING Journal, and are also at www.bfa.net .
Get that design you have been thinking about down on paper and send it to the National Balloon Museum , as a pdf or jpg file. Email: balloonmuseum@bfa.net Ideas for Clubs raising money for Replacement Windows – As we start the flying season, get creative and help with the fundraising for the National Balloon Museum stained glass windows. Perhaps an announcement at a balloon event, seeking donations from the spectators, would get the crowd involved in saving a bit of ballooning history for everyone to enjoy. Is there a tether for the public – how about a donation for the tether ride that gets donated to the Museum? Your help is greatly appreciated.

Debbie Spaeth

WISCONSIN BALLOON GROUP LEADERSHP

Executive Director Gary Britton 4458 Summit Ridge Slinger, WI 53086	414-333-5664	gbritton@uwc.edu
Central Regional Director (vacant)		
Fox Valley Regional Director Jeff Trzebiatowski 1619 Pershing Street Appleton, WI 54911	920-730-0325	cjtrzeb@new.rr.com
Illinois Regional Director Pat Brouillet 939 Roxanna Circle Kankakee, IL 60901	815-933-8086	gntlbrouis@aol.com
Southern Regional Director Jim Bushelle 4042 Saratoga Janesville, WI 53546	605-755-1828	n1965n@ticon.net
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Social Directors Corey Goebel 2158 N. 51 Street Milwaukee, WI 53208 & Daron Powers N40 W27296 Glacier Rd. Pewaukee, WI 53072	414-940-5844 414-704-1900	twogoebels@yahoo.com daron@goffsautobody.com

WISCONSIN BALLOON GROUP

Membership Application

_____ Pilot – $20.00

____ Additional pilots in household – $10.00 each

____ Crew – $15.00 (per household) ____ New Member

____ Event Official – $15.00 (per household) ____ Renewing Member

____ Business / Corporate – add $50.00

____ Life Membership - $200

Name(s): _____

Address: _____

City, State, Zip: _____

Phone-preferred: (___)_____ Phone-secondary: (___)_____

E:Mail: _____

Balloon Owner: No/Yes N# _____ Name: _____

N# _____ Name: _____

Preferred communication via: E:Mail _____ Surface mail: _____

Related Memberships: [Circle and/or complete]

BFA No/Yes #_____ EAA No/Yes #_____

AOPA No/Yes #_____ Other:_____

Please complete the following information. Check all that apply.

[ ] Pilot [ ] Crew [ ] Observer

Student ( ) BFA Crew Achievement BFA Observer Achievement

Private ( ) Level: _____ Level: _____

Commercial ( ) Primary Pilot(s) Crewed: ( ) Hot Air

[ ] Sport [ ] Competition _____ ( ) Gas

[ ] Rides [ ] Promotion _____ ( ) CIA Registered Observer

[ ] Instruction / Accept Students

BFA Pilot Achievement Level: ____ [ ] Official

Ratings: Hot Air ___ Gas ___ Other_____ Role(s):_____

Please indicate areas where you'd consider volunteering, to advance ballooning and the WBG:

Ventline Reporter *Social Events* *Membership* *Special Events* *Land Owner Relations*

Safety Seminar *Other:* _____

Send application and dues to:

Wisconsin Balloon Group Membership

c/o 2031 N. Beaumont Ave.

Kansasville WI 53139-9739

Questions on Membership? Contact Co-Chairs

David Ross or Kathy Lester-Ross

Cell: 414-581-7233 Cell: 414-218-9588

e-mail: aerostation@tds.net e-mail: inspiration2@tds.net

The WBG is dedicated to safety and education in the sport of ballooning, and encourages fellowship and communication within the ballooning community.