EM Briefings: Content Matters

Communicate Message

Or...

How to effectively communicate complex information in a few minutes

Andy Devanas WFO KEY
Jennifer McNatt SR ROC
Objectives

- Define Briefing
- Pre-season(storm) coordination
- Basic briefing structure
- Briefing content
- Briefing performance
Briefing Blueprint

Briefing Structure
- Start and finish with important points

Briefing Content
- Focus on the what, and not the why

Briefing Clarity (performance)
- Speak customer’s language
WHAT IS A BRIEFING?

Tropical Depression Four Forms off the coast of Africa
WHAT IS A BRIEFING?

- Type of meeting or presentation where information basically flows in one direction
- General purpose is to give information or instructions to someone (individual or group)
- Not a debate, discussion, or show, not an exchange of ideas
So Much Weather Information, So Little Time During a Briefing…
So what do we talk about?

Weather Information Available

Briefing Content

Decisions that need to be Made
Survey Question: How long should a meteorology briefing take?

Meteorologists: 10-15 mins
Decision Makers: 2-3 mins
BRIEFING PREPAREDNESS...
What are customer needs, and how do they differ?

**Emergency manager**
- Increased level of spatial and temporal detail
- Increased level of uncertainty communicated

**Media (Radio vs. Television vs. Newspaper)**
- Less spatial and temporal detail
- More protective action discussion/recommendation (general)
- Less uncertainty communicated
- Likely your briefing (interview) will be edited before release
They 48 hours away

<table>
<thead>
<tr>
<th>Do</th>
<th>Don’t</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Storm location</td>
<td>• Latitude and Longitude</td>
</tr>
<tr>
<td>• Storm size and intensity</td>
<td>• Fluctuations in intensity</td>
</tr>
<tr>
<td>• Storm motion</td>
<td>• Storm history</td>
</tr>
<tr>
<td>• Express confidence</td>
<td>• Watches and Warnings outside of area of interest</td>
</tr>
<tr>
<td>• Forecast model performance (uncertainty)</td>
<td>• A forecast model performance</td>
</tr>
<tr>
<td>• Anticipated watches and warnings</td>
<td>• Historical analogs</td>
</tr>
<tr>
<td>• Expected arrival</td>
<td>• Specific impacts (rainfall, surge)</td>
</tr>
<tr>
<td>• Expected impacts</td>
<td>• Don’t regurgitate information in the NHC package</td>
</tr>
<tr>
<td>• Storm Duration</td>
<td></td>
</tr>
<tr>
<td>• Reasonable worst case scenario</td>
<td></td>
</tr>
<tr>
<td>• Reasonable speculation</td>
<td></td>
</tr>
</tbody>
</table>
Briefing Examples for Discussion

Media

Storm 48 hours away

<table>
<thead>
<tr>
<th>Do</th>
<th>Don’t</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Storm location</td>
<td>• Latitude and Longitude</td>
</tr>
<tr>
<td>• Storm size and intensity</td>
<td>• Fluctuations in intensity</td>
</tr>
<tr>
<td>• Storm motion</td>
<td>• Storm history</td>
</tr>
<tr>
<td>• Forecast model performance (uncertainty)</td>
<td>• Historical analogs</td>
</tr>
<tr>
<td>• Anticipated watches and warnings (only in general terms)</td>
<td>• Specific impacts (flooding)</td>
</tr>
<tr>
<td>• Expected arrival (general)</td>
<td>• Deviate from official</td>
</tr>
<tr>
<td>• Expected impacts (general)</td>
<td>• NEVER mention worst case</td>
</tr>
<tr>
<td>• Storm Duration (general)</td>
<td>• NEVER speculate</td>
</tr>
<tr>
<td>• General preparedness and protective actions statements</td>
<td>• NEVER – NEVER speak “off the record”.</td>
</tr>
</tbody>
</table>
Why not Analogs?

Allison – June 2001
Barry - August 2001

Both near 9-10” of rainfall
All briefings should be designed to answer these questions:

- What is it...
- When is it going to get here...
- What is it going to do...
- When is it going to be over...
- What is your confidence this will occur...

*With all due respect to Larry Gispert*
Always begin and end with what you want remembered
Briefing Content

things to consider

Language (text, words)
Graphs, Plots, Maps
Symbols
Colors
Graphics (photos, schematics, etc)
Signal to noise ratio
Complexity vs. Simplicity
Detail vs. Brevity
SOMEWHERE OVER THE RAINBOW
How to Make Effective Use of Colors in Meteorological Visualizations
By Reto Stauffer, Georg J. Mayr, Markus Dabernig, and Achim Zeileis

RGB vs HCL
(hue-chroma-luminance)
Briefing Content

• You will have more information than you can, or should, brief.

• Prioritize information.

• State what they need to know, no more.

• Focus on the what, not the why.

• Tailored for targeted customer base.
  – Water managers vs. EM/civil defense
Briefing Content

• Careful with worst case scenario (reasonable).
• Respect operational significance.
• Respect operational cycles.
• If everything’s a threat, nothing’s a threat.
• Limit text.
• Use implicit terms of uncertainty, not explicit.
...Worst Case...

THERE IS POTENTIAL FOR 4 TO 8 FEET OF SURGE ACROSS WESTERN...

IN A WORST CASE SCENARIO...WATER LEVELS OF 10 TO 11 FT ABOVE MSL ARE POSSIBLE.
Charts, Graphs, and Maps

Explain what it is
Ordinate, abscissa, plot, symbols

Briefly describe region
Point out a frame of reference

Reduce Noise
If not discussed, don’t include
Where’s Waldo?

Point out reference points, explain what is on graphic...
COOL PLOT – BUT NEVER USE

Too Complex...too noisy...focus on why...better ways to convey information
Use of Arrows

Meteorologists use arrows to show motion

Everyone else in the free world uses arrows to point at things
Red Is Bad
(keep it simple works)
Meteorological Symbols

Only use with other meteorologists
What do your customers see?
The What, Not the Why!
Outlined areas denote current position of systems discussed in the Tropical Weather Outlook. Color indicates probability of tropical cyclone formation within 48 hours.

- Yellow: Low <30%
- Orange: Medium 30-50%
- Red: High >50%
Briefing Clarity

• Do not bury the lead
• Be nice and concise
• Sell what you have to say
• Be confident, calm, and assertive
• Speak like the audience is taking notes
• Anticipate questions and responses
• If you don’t have anything to say, don’t say it
Words Matter

*Speak their language, not ours*

- **Words we don’t say…**
  - Vorticity, Helicity, Buoyancy, MEOW…

- **Words we shouldn’t say, but do…**
  - Dewpoint, Trough, Ridge, Low, High…

- **Words we should never say, but do…**
  - Eyewall replacement, well developed center
Always be professional...

- Don’t be folksy, funny, critical, condescending, or sarcastic... (especially with media)
  - None of these things translate well
  - Could lead to misunderstanding
  - Could distract from message
  - Be polite and try to stay on message

- Be Patient...
  - Your customer does not know what you know – and can become frustrated easily.
  - If the customer does not understand it is your challenge to explain in a manner the customer will understand.
Things to Remember

• You are the expert. You are the authority.
  – The customer depends on what you say – and will take action.

• Prepare for your briefing.
  – Have bullet points or outline ready.
  – Do not use prepared text for a briefing. It will sound like you are reading.
  – Consider a one page executive summary you can handout/email

• Don’t forget the four essentials (what, where, when, conf)

• Again - be brief (thus the name).
  – Remember, they are likely receiving many briefings
  – The briefing will drive others actions.

• This is not about you – you are but one piece of information
Things to Remember

• Become experts in coordinated information
  – Network and coordinate with customers
  – Find their needs and concerns – brief accordingly
  – Understand and speak their language

• Stay within your expertise and authority
  – You are there to support decision, not make it
  – You are not Emergency Management Experts
  – You are not Social Science Experts
  – You are not Media Experts
“Tell me what I need to know, when I need to know it”

Skip Dugger, FDEM retired
“Don’t tell me what you don’t know or unsure of. Tell me what you DO know and we’ll start from there.”

Gene Kranz
Flight Director
Apollo 13
Weather Briefings

“Still a great deal of uncertainty…”

“Not a lot of confidence in exact track of storm…”

“Overall confidence in the forecast is low…”

“Highly uncertain forecast”

“It is hard to say at this time…”
Uncertainty

• Uncertainty is a part of meteorology
  – But shouldn’t dominate the message
• Can be expressed in several ways:
  – Verbal expressions
    • Not very precise
  – Confidence range
    • Or range of values; spread increases as uncertainty increases
  – Probability forecasts
    • Interpretation much easier; allows user to set thresholds
Benefits to communicating uncertainty

• Assist people in making more effective decisions
• Helps manage user expectations
• Promotes user confidence
• Reflects the state of the science
Synonyms of “Uncertainty”

- Distrust
- Mistrust
- Vagueness
- Hesitation
- Indecision
- Unpredictability
- Ambivalence
- Confusion
Synonyms of “Certainty”

• Confidence
• Trust
• Belief
• Faith
• Sureness
• Validity
### WMO Suggested Terminology

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Likelihood of the occurrence/outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely Likely</td>
<td>&gt; 99%</td>
</tr>
<tr>
<td>Very Likely</td>
<td>90 – 99%</td>
</tr>
<tr>
<td>Likely</td>
<td>70 – 89%</td>
</tr>
<tr>
<td>Probable – more likely than not</td>
<td>55 – 69%</td>
</tr>
<tr>
<td>Equally likely as not</td>
<td>45 – 54%</td>
</tr>
<tr>
<td>Possible – less likely than not</td>
<td>30 – 44%</td>
</tr>
<tr>
<td>Unlikely</td>
<td>10 – 29%</td>
</tr>
<tr>
<td>Very unlikely</td>
<td>1 – 9%</td>
</tr>
<tr>
<td>Extremely unlikely</td>
<td>&lt; 1%</td>
</tr>
</tbody>
</table>
How do you build trust?

• Not by outlining why you could be wrong
• But by giving a range of possibilities
  – Here is our best estimate / what we do know
  – Here is what you should be planning for—plausible worst case/alternate scenarios
"The NWS forecast is just that - a forecast. And we need to be prepared to respond to incidents based on the best available information. The most important aspect of this event is that people responded and lives were saved."

- Craig Fugate
Takeaway Points

- Briefings are to communicate information
- Briefings should be brief
- Keep within briefing structure
- Keep content simple to understand (graphics)
- Prioritize information
  - Be mindful of operational significance
  - Be mindful of planning cycles
- Be nice and concise