

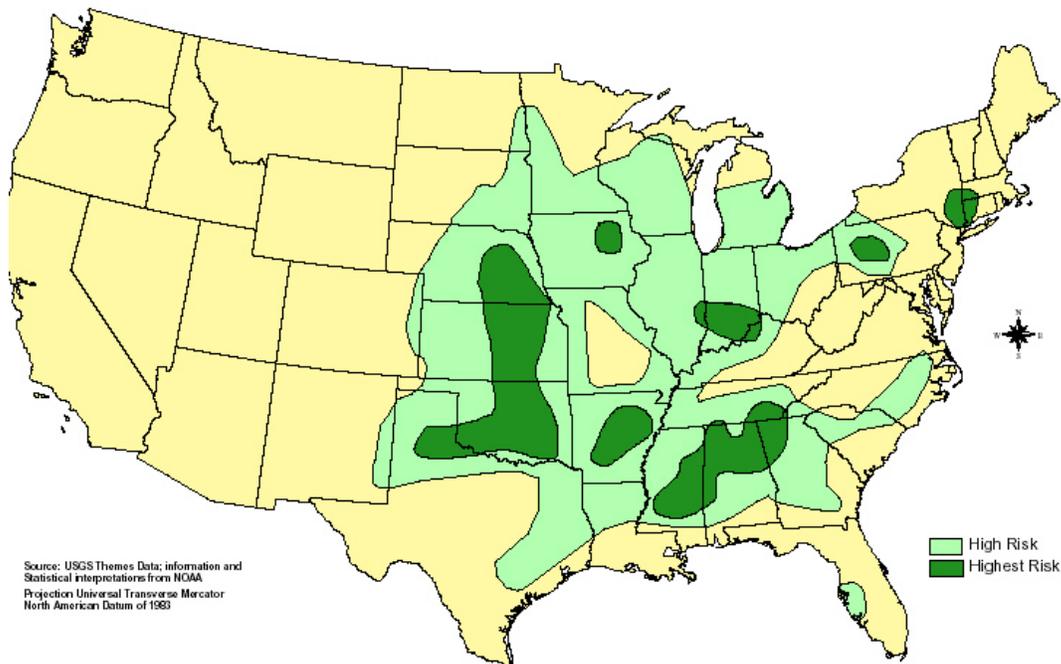
Emergency Management Exercise Report
Tornado Warning – Trailer Occupants Take Shelter
Conducted on September 30, 2004

Exercise Objectives:

1. Test prescribed procedures for responding to a National Weather Service (NWS) tornado warning received by the weather-alert (WX) radios in JLab portable structures. (See attached list.)
 - Re-familiarize WX radio custodians and other personnel on use and function of radios.
 - Evaluate effectiveness of “pass-the-word” process in multi-trailer facilities.
 2. Establish a baseline for tenants’ response to be used in evaluating any future improvements to procedures and equipment.
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Background:

Mobile homes, office trailers, and other portable structures are notoriously vulnerable to wind damage. JLab has long relied upon portable structures for office and light technical work space. This has meant a vulnerability to high winds – especially tornadoes – and a threat to occupants who are unaware of an approaching storm or who cannot seek safe shelter in time.



Given the relative infrequency of tornadoes in the region (Virginia is 29th in ranking of tornado risk by state), the risk is low in terms of probability, but the potential consequences are serious.

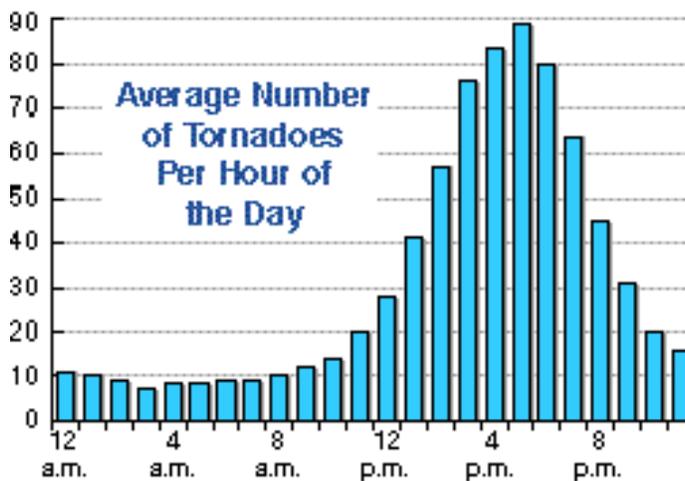
- ◆ 38% of tornado fatalities occur in mobile homes
- ◆ 27% of tornado fatalities occur in permanent homes (which outnumber mobile homes by a wide margin)
- ◆ 11% in vehicles

Exercise Synopsis:

It is a normal workday, late afternoon (most probable time of day for severe thunderstorms and tornadoes). Most offices are occupied, though some of the occupants may not have returned from work in halls, tunnel, etc.

A pair of exercise evaluators enters the trailer, walks to the radio, and presses the “test” button. This activates the warbling alert tone. On radios with the feature, the volume is adjusted as required to ensure the tone can be heard throughout the near vicinity.

The evaluator is holding a sign or has placed it in a conspicuous position next to the radio. (Example is attached.) Occupants who respond to the alert are handed a response card (see below) and are asked to mark it according to the actions they would take had this scenario been an actual tornado warning.



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Planning &

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Results:

Number of Occupants Encountered:	64
Percent of Occupants Choosing Suitable Shelter:	69.0%
Percent Choosing Potentially Unsafe Shelter:	24.9%

Complete tabulation of results attached to this report. This includes evaluators' comments.

Conclusions:

There was a higher-than-expected (by Team) level of knowledge about take-shelter precautions. The majority of trailer occupants would know how to respond in an actual tornado warning – if they heard it. Some radios were inaudible to all occupants. One radio was inside a locked office. Trailer City is especially problematic because of its long axis and many intersecting units.

Many radios do not have the relatively new feature of Specific Area Message Encoding (SAME) now provided by the National Weather Service with weather warnings. This feature allows a radio to be programmed to receive only those alerts that affect the area selected during the

radio's set-up procedure. This reduces greatly the quantity of warnings that do not apply, and it lowers the "aggravation factor" of frequent irrelevant warnings.

Lessons Learned & Other Action Items	Follow-up Responsibility	Target Date
Purchase and install more radios for Trailer City and Safety Lab.	Emergency Manager	12/04
Explore options for more robust alert system in Trailer City. Make recommendations to Senior management via the EH&S Committee	Emergency Management Subcommittee	3/05
Publicize results of exercise to (a) affected trailer occupants, and (b) to entire Lab as part of a severe weather update.	Emergency Manager in conjunction with EM Subcommittee and JLab Electronic Media	11/04

This is an exercise to test the take-cover procedures for the occupants of this building.



Simulation:

The weather-alert radio is broadcasting a Tornado Warning for Upper Newport News.

A tornado has been sighted several miles to the southeast, traveling to the northwest – toward Jefferson Lab.

What would you do at this moment?

Please take one of the response cards from the exercise facilitator or one of your colleagues. Fill it out and return it to the facilitator.

This is only a drill, but your participation is needed.

Poster displayed at each WX radio when the alert tone was activated.

Locations of Weather Alert Radios

(Highlighted locations included in exercise.)

Building Name	Bldg & Room Numbers	Custodian
ARC	01/Lobby	J.T. Kelley
ARC	704-13	J.T. Kelley
CEBAF Center	12/Lobby	M. Hightower
CHL	08/control room	J. Wilson
Counting House/Halls	97; Halls A, B, C	W. Vulcan
Cryogenic Lab/ESR	98, 102	B. Murphy
Cryo Trailer/CTF	10, 57	J. Wilson
EEL	90	B. Kross
Electronic Tech Shop	59	M. Wissmann
FEL	18	G. Neil
Hall A Trailer/Storage	101B, 72	E. Folts
Hall B Trailers	96B, 94A	S. Christo
Injector Trailer	53A	D. Green
Injector Trailer	53B	D. Green

Building Name	Bldg & Room Numbers	Custodian
Injector Trailer	53C	D. Green
Machine Control Center	85/102B	H. Fanning
Machine Control Center	85/104	S. Suhring
MCC Annex	87	R. Gonzales
MCC Annex	89	S. Holben
Physics Trailer	11B	M. Bennett
Physics Trailers	11 and 11A	M. Bennett
Radiation Lab	52, 52ABC, 54	B. Nevarez
Residence Facility	6	R. Durham
Safety Lab	35	P. Hunt
Security Guard House	60	M. Lewellen
Test Lab	58/202, 31, 34	S. Thomas
Trailer City	16/25	M. Bennett
Trailer City	16/172	D. Buckle
VARC	28/Lobby	D. Kausch

Tornado Warning, Take Shelter Exercise

Building Number: _____

Action(s) you would take if there was an actual threat from an approaching tornado. Please check all that you would choose.

- Seek shelter in an interior room of this building.
- Attempt to get to your car to escape the approaching storm.
- Seek shelter in the nearest depression or ditch, face-down, hands covering head.
- Seek shelter in nearest designated "safe" building. (Indicate which one: _____)
- Other (Please describe):

Response card provided to trailer occupants

Emergency Management Exercise 9/30/04
Tornado Warning; Trailer Occupants Take-Shelter

Location of WX Radio	Bldg & Room Numbers	Response Option Choice						ID'd Suitable Shelter	Evaluators' Comments
		A	B	C	D	E	F		
Cryo Trailer	10				2		1	2	
CTF	57								Unoccupied
Hall A Trailer	101B				2			2	2 occupants only.
Hall A Storage	72								Unoccupied
Hall B Trailer	96D			1	4			4	Test feature on radio did not work correctly. Also, radio volume was turned down.
Hall B Trailer	94A								Unoccupied
Injector Trailer	53A				2			2	2 occupants
Injector Trailer	53B				1			1	One occupany only
Injector Trailer	53C			1	4	1		4	One occupant wearing headphones & could not hear alert tone.
Physics Trailer	11B				3			3	
Physics Trailer	11		1	2	2			1	
Physics Trailer	11A	1			1			1	
Radiation Lab	52 (A,B, & C), 54				3			3	2 occupants in 52B; one went quickly to warn others in adjacent bldg (52A).
Safety Lab	35				1			1	1 occupant only. Could not hear alert from location in nearby office (3 doorways away.)
Trailer City	16/25	2			3		4	3	Alert tone inadubible past Rm 57 and in Rm 13. Approx 4 people in vicinity (& within range of tone) did not respond. Others took as much as 5 minutes to respond.
Trailer City	16/172			2	13	1		13	Alert tone inaudible past the second intersecting hallway to the west.
Totals:		3	1	6	41	2	5	40	
Total Occupant Participants:		58							
Response Options (✓ ≡ suitable option)									
Percent Choosing Potentially Unsafe Shelter		23.4		A		Seek shelter in an interior room of this building.			
				B		Attempt to get to your car to escape the approaching storm.			
Percent Choosing Suitable Shelter:		69.0		✓ C		Seek shelter in the nearest depression or ditch, face-down, hands covering head.			
				✓ D		Seek shelter in nearest designated "safe" building. (Indicate which one			
				E		Other (Please describe):			