Montana Fire Services' Mutual Aid, Command, and Field Operations Guide

02/28/15 –36th Edition
(updates 11/01/14 and all previous editions)

If you need Mutual Aid help, turn to page 3.

Next meetings:
November 7-8, 2015
March 5-6, 2016
both at Eastgate FD

"…a timely & measured response to a request for help."
(from the Montana Fire Service Mutual Aid Mission Statement)

"There is no such thing as 'It can't happen here'"
Doug Williams, Nov. 7, 2009

"I got it. I'm on it."
Sheriff Leo Dutton, June 20, 2014

"Yes, I can."

est. 1997

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How to Make the Request for Mutual Aid

How to request Mutual Aid when you need help

1. Make your request directly to the person or organization from whom you are requesting mutual aid (see names and contact numbers on **page 13** of this document). If you do not know who to ask for mutual aid, see #**2** below.

2. Contact the Lewis and Clark County Fire Coordinator at the numbers below:
If you need support for any part of the Montana Fire Service Mutual Aid process, including a request for mutual aid, contact the Lewis and Clark County Fire Coordinator at the numbers below:
Lewis and Clark County Fire Coordinator at:
Lewis & Clark Co. 911 Center 447-8293, 442-7883, 447-8461
or:

Bob Drake (Tri Lakes FD) 431-3600 c**,** 441-0681 p, 475-3298
Jerry Shepherd (West Valley FD) 431-3833 c, 443-5071 h, 441-0631
Dave Sammons (East Valley FD) c 459-5160, p 441-0641

If you are not sure how to proceed, see #**3** below.

3. Call anyone on the list of "People Who Will Help You" on page 6. If you need support for anything regarding Montana Fire Service Mutual Aid, call anyone on the list of "People Who Will Help You" on **page 7**.

Montana Fire Service Mutual Aid Contacts Request Script

Say the following things:

1) "This is an emergency."

2) "This is _____
   (your name, FD, and role or rank)."

3) "I have a _____
   (structure fire, wildland fire, or rescue) emergency."

4) "I am requesting Mutual Aid from _____
   (contact's name)."

5) "Please contact_____
(list all contact names) by pager."

6) "Have _____*(contact names)*
call me @ _____*(your call back number)*."

7) "If you can't reach _____
(contacts) within 10 mins, please call me back."

8) "Thank You."

Montana Fire Service Mutual Aid Contacts Request Notes

1. Who is asking for help?
   Name (s):

   Call back numbers (including 911 Center, any BOO #s, other contact info)

   Organization:

   Role or rank:

2) What is the problem there?

   C. A. N. report from incident:
   (Structure fire, Wildland Fire, Rescue, other)

3) What help is being asked for? For how long will the help be needed?

4) Where should we stage? Who/How contact once staged (Comm)?

Notes

People Who Will Help You

Hunter S. Bell III (from Roberts, MT) 670-5633
Brandon Brunelle (Glasgow) 263-2726, 230-2472, 228-2141, 228-4333
Bob Burlingame – 703-999-6488
Ed Burlingame – c. 270-4285, h. 387-4582
Fred Cady (Fort Ellis) c 580-2582, 522-5863
Joe Calnan (Frenchtown, Missoula Co) c 240-5759, Missoula Co Disp 406-258-4760
CHEM-TREC 1-800-424-9300 Poison Cntrl 1-800-525-5042
Rich Cowger - c 321-1180) or @ Stillwater Co 911 @322-5326
Bryan Connelley c 570-0506, h 388-0905
Brian Crandell - p 522-5710, or aps@bigsky.net, h 585-1103
John Culbertson - c 581-8310, w 771-4328, h 585-1296
Mike Doto – cell 491-9308, home 782-9308
Bob Drake (Tri Lakes FD) c 431-3600
Rodney Dresbach (Rosebud) c 406-253-0208
Shawn Eggar c 939-5769, w 525-3337
Jane Ellis - home 777-3304
Bob Fry (AAGG) c 431-0102, w – 224-2999
Gordon Gieser - w 549-3601, c 544-4075, c 546-8844(Kelly), h 822-8844
Britton Gray – c 223-4478, Disp. 307-344-2535, h 307-344-9006
Steve Harada - 911 Center in Wolf Pt 653-6240 - c 650-2222
Kraig Hansen (Chinook FD) – c 945-3834
Bobby Hanson 263-5733, dispatch 228-4333
Steve Hester - c 781-8949, H 761-3307
Jason Jarrett - c/p 580-1838
Craig Jeppson – c. 498-5444
Tom Kennelly(Whitefish FD) w 863-2483, Flathead Dispatch 758-5610, ext 2
Todd Kitto (Amsterdam FD) c 580-9764, GallCo 911 582-2124
John Klippel 752-7776
Tom Kuntz(Red Lodge FD, 406-855-6198) @ Carbon Co911 Center @ 446-1234
Terry Larson Cell 855-5602
Lewis & Clark Co. 911 Ctr 447-8293, 442-7883, 447-8461
Leonard Lundby – h 727-5968, c 899-8873, Cas. Co 911 454-6979
Gary Mahugh (Creston FD) –cell 406-250-8233
Dave Mason C 461-0570, H 443-7700
Jim Mastin - Cell 223-9461, home 1-757-495-3366
Sue Mergenthaler (Eastgate FD) C 431-2458, H 227-8503
Brian Nelson – Wibaux FD – c 701-218-0267 or 701-872-6648, h,406-795-2605, 911
Center -795-2222
NRC 1-800-424-8802 MT DES 324-4777
Jerry Prete,(FSTS, Eastern MT, Miles City), 461-2274
Bill Rash c. 855-0400
Jason Revisky (Rae Sourdough FDs) – c 579-9761, GallCo 911, 582-2124
Jerry Shepherd (West Valley FD) C 431-3833, H 443-5071
Scott Waldron – West Yellowstone Dispatch 646-7600, c 640-1033
Butch Weedon Cell 788-0222
Derek Yeager d 247-4406,c 672-5182

Montana Mutual Aid Mission Statement & Concept

MMA Procedures: How Montana Mutual Aid Works

"Mayday" Procedure

Counties That Will Help You

Etiquette

Responding Command Staff Notes

Pre-Response Check List

Montana Mutual Aid Mission Statement

"We are committed to a timely and measured response to a request for help".

Concept

Yes, you can ask for help from another fire department (or other organization) without having a written mutual aid agreement in place. See the sections of Montana Code Annotated.

It makes sense to have things in place before the big one. Start local, with your neighbours. Work from there.

Meet and greet long before you call for help. MMA meeting have been a good place to meet and greet. (see dates on cover).

You can ask for Command help (Friend-O-Command, Command Psychic Friends Network, Command Helpers, Command Staff, others), as well as fire trucks and fire fighters (and anything else you need).

There are many options for people to call for help and people who will help you navigate the Montana Mutual Aid process. (see page 6, People Who Will Help You)

It is helpful to have response plans in place before you have the need for them. "There are times when making it up as you go ain't the best choice".

Response plans can include Mutual Aid Run Cards, Maps, Commo Plans, Phone Lists, Logistics Lists, others. See Lewis and Clark County folks, Flathead County folks, Law Enforcement folks, EMS folks, Hospital folks, Public Health folks, Emergency Management folks, others.

The more people in your organization that know how to use Montana Mutual Aid, the better the chance your requests for help will go smoother.

"If you want to get, you gotta give".

Take a look at your own stuff. Make an assessment of what you can give. Staying home and covering for people who have responded to a MMA request is, in fact, just as righteous as going. Sometimes, all you can give is coverage at home.

Procedures - How Montana Mutual Aid Works

24 Hour Request/Contact Procedures and Time lines:

The initial contact shall be made to a 24 hour communications center capable of generating a callback to the requesting party within 15 minutes. An answer confirming or denying the request must be given within 30 minutes of the request to an available phone number. Responding agencies should attempt to be responding within 60 minutes of the initial contact. All responding agencies may replace crews as often as necessary to maintain the capability of the resource for the duration of the commitment.

Standard Deployment Increments/Operational Periods:

The standard deployment increments for apparatus and personnel are 12 and 24 hours from time of request to time of return home. The standard deployment increments for management staff are 24 and 48 hours from time of request to time of return home. Requests for apparatus, personnel and management staff are renewable by the requesting agency. The standard minimum operational period will be 8 hours. Task Forces are expected to stay intact.

Who Pays What Costs:

A requesting agency shall provide fuel and reasonable welfare items for responding agencies. However, responding agencies may elect not to be reimbursed.

Insurance Coverages/Liabilities:

Each responding agency shall be responsible for insurance on their people, their equipment, and their actions.

Equipment Breakdown Costs:
As a minimum, responding agencies shall be responsible for their own equipment costs. The Requesting agency may reimburse all or part of equipment breakdown costs.

Logistical Support:

Responding agencies should be self-sufficient. Motor fuel and oil will be the responsibility of the requesting agency.
Responding resources should send and use what they can afford to give.
Transitions if a Declaration is made or a responsible party is identified:
In the event a funding source becomes available either through a declaration or responsible party, responding agencies may be compensated from the time of deployment.

Upon Release from a Montana Mutual Aid Request:

Upon release from a mutual aid request, Fire Departments may enter into other arrangements. The original requesting agency is not expected to facilitate other arrangements.

Management System:

The requesting agency will identify and operate under an incident management system.

Accountability - The Incident Commander shall be responsible for the complete, written check-in, tracking of activity, location, and time (for the duration of their deployment) and demobilization of every unit deployed to their incident.

Risk Management Plan:

The following Risk Management Plan is applicable to all Fire Departments when ever they are deployed to a mutual aid incident when no mutual aid agreement exists between the requesting and responding fire department[s]:

The Incident Commander or Task Force Management Staff for mutual aid Task Force deployments(here after, Incident Commander) will integrate risk management onto the regular functions of Incident Management.

The basic risk analysis plan shall be based on the following approach:

1. Response is initiated on the assumption that lives and property can be protected from imminent danger

2. Firefighter will risk their lives a lot (calculated, significant) to protect savable lives.

3. Firefighters will risk their lives a little (calculated, significant) to protect savable property.

4. No risk to Firefighters will be allowed to protect lives or property that are already lost.

The Incident Commander shall weigh the risk to firefighter against the possible results of their actions. There are situations, including but not limited to situations where violent reactions endanger operations or rescue incidents where there is no possibility of victim survival, where the risk to firefighters is unacceptable and a decision to take "No Offensive Action" shall be permitted to be the appropriate decision. Firefighter safety and survival shall be the major consideration when conducting offensive and/or defensive operations.

In evaluating risk, the Incident Commander shall consider the following as the basis of the decision:

1. Risk Management based operations
2. Standard Conditions
3. Standard Operating Procedures

4. Fully Trained Operating Crews
5. Fully Protected Firefighters
6. Quickly Established and Visible Command
7. Safety Monitors & Tactical Reserve (On Deck-RIC)
8. Early and ongoing Incident Evaluation
9. Pessimistic evaluation of, and reaction to, changes
10. "Experience Bank" review and critique

Standard risk management shall be the regular on-going basis for all Firefighters in the incident management system to understand where Firefighters will be, where Firefighters will not be, what Firefighters will be doing and what Firefighter will not be doing at the incident scene.

At large incidents and special operation incidents, the Incident Commander shall assign a Safety Officer position to a qualified person with the specific responsibility to identify and evaluate hazards and to provide direction with respect to the safety of operations.
No risk or incident need shall justify deviation from this standard.

"Mayday!" Procedure

Lost, Trapped or Missing Fire Fighter

Mayday
The radio message "**Mayday**" will be used by fire fighters to report their status as being lost, trapped, or injured and needing rescue. Any member may use "**Mayday**" to report a lost fire fighter. Any report of "**Mayday**" will receive priority radio traffic. The term "**Mayday**" will be reserved ONLY to report a lost, trapped, or injured fire fighter(s). The term "emergency traffic" will be used to report all other emergencies.

On Deck / Rapid Intervention
The IC must have ready an equipped, incident knowledgeable, "On-Deck" team ready to deploy. At a minimum, the IC should brief the team about the incident strategy, tactics, risks, crew location and communications plan. The "On-Deck" team must be a component of the IC's incident plan.

Montana Fire Service Mutual Aid Contacts

Beaverhead Co. – Beaverhead Co 911 @ 683-3700, Tom Barnes, Scott Marsh c 660-5051, w 683-3757, h 683-5326, Rick Later c 660-0332,w 683-5051, h 683-4808

Blaine Co. Kraig Hansen, Blaine Co 911 357-3260, or cell 945-3834

Butte Silver Bow Co. – BSB 911 #782-4224, Mike Doto (c 491-9308, h 782-9308), Mike Leary (c 498-3707, h 494-3615), Dave Kneebone

Broadwater Co. – Pg Ed Shindoll, c 949-5535, 266-4425, or Chuck Plymale @ Broadwater Co. 911 Center #266-3441

Carbon Co. – Pg Tom Kuntz (cell 855-6198), @ Carbon Co 911 #446-1234

Cascade Co. –Pg Leonard Lundby, 911#454-6979

Conrad FD – Chief Kevin Moritz 289-0289

Dawson Co. - Pg Richie Chrisafulli, Dawson Co 911– 377-2364

Flathead Co. – Pg Creston Duty Officer @ Flathead Co 911 #260-4319

Gallatin Co. – Pg Amsterdam or Rae/Sourdough Duty Command Officer Management Staff @ Gallatin Co 911 @ 582-2100, ex. 2 or 582-2124

Glacier Co. - 338-5000(24 hr 911 Center)

Jefferson Co. – Pg Montana City Chief – Rick Abraham or Montana City Duty Officer @ Jeff Co 911 #225-4266 or #225-4075

Lake Co. – John Fairchild cell 212-0042 or pg @ Lake Co 911 883-7301

Lewis & Clark Co. – Pg, Drake, Shepard, Sammons, or Duty Fire Coord. @ L&C 911 447-8293/442-7883/447-8461

Lewistown FD - Page Keith Kucera, @ LFD, Fergus Co 911 Ctr #538-3413

Madison Co. – Pg MVFD Fire Chief Sean Christensen @ Mad Co 911 #843-5301, c 570-6741, d 682-4748, h 682-7864, Station 682-3311

Mineral Co. – John Woodland, Superior FD, c 529-4317, 822-3555(Mineral Co. 911)

Missoula Co.– Joe Calnan @ Msla Co 911 # 523-4760 or c 258-4760

Park Co. – call Park County 911 # 222-2050

Phillips Co. – 911 Center 654-1211, Malta FC Michael Flatt, 673-3252
Ravalli Co. –Rav Co 911 @363-3033 Jim Knapp Corvallis FD c 360-4371, Rex Olsen c 550-0938, Pg Bill Perrin (hm 777-3937) or Three Mile FD Chief – Russ Giese hm 777-2749, c 880-2749

Richland Co. - Richland Co. 911 # Dispatch Center 433-2919, pls page Chief- Larry Christensen 489-2919 and or Deputy Rural Chief-Rob Gilbert c 489-2763 office 433-1122 h 488-1486

Roosevelt Co. - - 911 Ctr Wolf Point 653-6240, WP Chief Shawn Eggar 939-5769 W 768-3622, H 653-1463, w 525-3337, Steve Harada 650-2222

Sanders Co – Randy Woods, Hot Springs 741-2325w, 741-2472h

Sheridan Co. -Larry Detienne - c 406-480-5350, dispatch 406-765-1200

Stillwater Co. – Pg Rich Cowger (c 321-1180) @ Stillwater Co 911 #322-5326

Valley Co. - Valley Co. Long Run- Kris Knodel- 263-4179, Brandon Brunelle 263-2726, 230-2472, 228-4333, Fire Warden Dan Carney 263-7301

Yellowstone Co. – Derek Yeager, d 247-4406 c 672-5182

Guest – Host Etiquette - General

(by Fire Chief Jane Ellis(ret.), Stevi Fire)

INVITATION

Guest: Get an invitation. Standing invitations are acceptable, and encouraged.

Host: Extend invitations thoughtfully

CHECK-IN/OUT

Guest: Connect as soon as possible with the host system. Some communication en route is helpful. Check-in formally when you arrive on scene. Check out as you leave.

Host: Have a clear way to receive incoming resources. Designate check-in frequency and staging area. A cell contact for en route resources is helpful. Have a demob plan and check-out available as soon as possible in case someone needs to leave suddenly. Make check-out easy

BRIEFING

Guest: Accept the plan of the host. Let the host know as soon as possible if you need something you don't have in order to complete your assignment.

Host: Have a plan, and communicate it clearly and fully. Provide maps and a comm plan as a minimum. Provide a complete written plan as soon as possible.

MANNERS

Guest: Be nice. Make suggestions politely, but keep working while you're talking. Play your role. If you have an issue talk to the host, not everyone else.

Host: Be nice. Know what you want. Listen to suggestions. Evaluate suggestions quickly and implement, modify or discard.

SAFETY

Guest: Operate safely or, please stay home.

Host: Have a safety system in place or build a safety system with the first capable people to arrive.

RESPECT THE WORK

Guest: Come to work. Be good at the work you represent yourself as capable of doing. Do not disqualify the work because of your qualifications. It all needs to get done.

Host: Know what work you want done. Have everyone work inside the Risk Management Plan. Manage the work and the responders. Ask yourself , "Am I capable of managing this incident?". If the answer is "No", get command help coming early.

LOGISTICS

Guest: Bring your own stuff to support your work and your basic needs while you are at the incident.

Host: Provide as much logistical support as you can.

UNDERSTANDING

Guest: Show up, listen, learn and help out. Be understanding.

Host: Listen and learn from responders. Be easy to help. Be understanding.

TRANSLATING

Guest: Come prepared to translate. Work using the host's terms.

Host: Be ready to translate from host to guest, and between guests.

APPRECIATION

Guest: Appreciate the opportunity to serve.

Host: Appreciate the assistance you receive.

Guest – Host Etiquette – Command Staff

BE CONSIDERATE

Guest: Be considerate of the conditions under which the hosting Chief is operating.

Host: Be cognizant of what the responder is giving up to come and help.

SITUATION

Guest: Recognize the hosting entity and understand their situation.

Host: Understand your situation and explain it succinctly.

LISTEN

Guest: Listen a lot. Help quietly.

Host: Know what you want, ask for it. Listen for feedback.

ASSIGNMENTS

Guest: Accept whatever assignment you are given and capable of. Don't bitch about being assigned a task or position that might not be your favorite role.

Host: Accommodate the strengths and preferences of guests where/when you can.

PUBLIC INFO

Guest: Don't talk to the media (or anyone else for that matter) unless the host specifically asks you to.

Host: Make clear who the PIO is. Ask media to work through that person.

FRIENDS DON'T LET FRIENDS

Guest: Friends don't let friends run incidents what they are too tired to be effective. If you have to deliver this news, do so in private.

Host: Manage yourself. Take a hard look in the mirror. Listen when you are so tired you can't. Don't wreck your support system.

INTERPERSONAL

Guest: You have an absolute obligation to get along with whomever else the host has asked to come and help. Manage your past, present and future. If you can't go along with the host, ask the host for a note allowing you to leave. Try to find your own replacement if you select yourself out of the response.

Host: Try not to invite mortal enemies. If you need the enemies, brief them privately, tell them you need them both and you need them to cooperate. Ask them not to make things any harder for you than they already are.

DEMOB

Guest: Leave when its time. If you can't tell when it's time, ask.

Host: Don't keep anyone longer than you need to. Be sensitive to signs that people want to go home.

Pre-Response Trip Checklist

☐ Invitation- Get one.
Standing, pre-arranged invites are good.
Note: (consequence for arriving without an invitation may include:
Ex-Lax, ex-communication, execution, execution w/prejudice, execution
w/extreme prejudice)

☐ Warm, dry work clothes

☐ Personnel roster list

☐ Food, water and required meds for responders

☐ Shelter, sleeping bag

☐ Hygiene stuff-toothbrush, chem toilets, hand soap, dish soap, etc

☐ PPE & SCBA

☐ Radios and batteries and chargers

☐ Cell and sat phones and batteries and chargers

☐ Flashlights- all shapes and sizes, and batteries, lots

☐ Batteries for everything(lots)

☐ Tools- hand, power, extrication

☐ Compressed air

☐ Generator, lights, cords

☐ Thermal imagers, 4 gas meters

☐ Fuel and oil, spare parts

☐ A developed plan for rotation of personnel, shared with host

☐ Other _____

☐ Bonus points for bringing enough to share.

Notes:

Contributed by Lt. Jason Jarrett, GCSO

7-33-2108. Mutual aid agreements -- request if no agreement exists -- definitions.

(1) A mutual aid agreement is an agreement for protection against disasters, incidents, or emergencies.

2) Fire district trustees may enter mutual aid agreements with the proper authority of:

    (a) other fire districts;

    (b) unincorporated municipalities;

    (c) incorporated municipalities;

    (d) state agencies;

    (e) private fire prevention agencies;

    (f) federal agencies;

    (g) fire service areas;

    (h) governing bodies of other political subdivisions in Montana; and

    (i) governing bodies of fire protection services, emergency medical care providers, and local government subdivisions of any other state or the United States pursuant to Title 10, chapter 3, part 11.

    (3) If the fire district trustees have not concluded a mutual aid agreement, then the trustees, a representative of the trustees, or an incident commander may request assistance pursuant to 10-3-209.

    (4) As used in this section, "incidents", "disasters", and "emergencies" have the meanings provided in 10-3-103.

    History: En. Sec. 1, Ch. 107, L. 1911; amd. Sec. 1, Ch. 19, L. 1921; re-en. Sec. 5149, R.C.M. 1921; amd. Sec. 1, Ch. 130, L. 1925; re-en. Sec. 5149, R.C.M. 1935; amd. Sec. 3, Ch. 97, L. 1947; amd. Sec. 2, Ch. 75, L. 1953; amd. Sec. 2, Ch. 77, L. 1959; amd. Sec. 1, Ch. 118, L. 1959; amd. Sec. 1, Ch. 2, L. 1965; amd. Sec. 1, Ch. 333, L. 1969; amd. Sec. 1, Ch. 120, L. 1973; R.C.M. 1947, 11-2010(d); amd. Sec. 2, Ch. 149, L. 1993; amd. Sec. 1, Ch. 46, L. 1997; amd. Sec. 1, Ch. 292, L. 2007.

7-33-4112. Mutual aid agreements -- request if no agreement exists -- definitions.

(1) A mutual aid agreement is an agreement for protection against disasters, incidents, or emergencies.

(2) Councils or commissions of incorporated municipalities may enter mutual aid agreements with the proper authority of:

    (a) other incorporated municipalities;

    (b) fire districts;

    (c) unincorporated municipalities;

    (d) state agencies;

(e) private fire prevention agencies;

(f) federal agencies;

(g) fire service areas;

(h) the governing body of other political subdivisions; or

(i) governing bodies of fire protection services, emergency medical care providers, and local government subdivisions of any other state or the United States pursuant to Title 10, chapter 3, part 11.

(3) If the council or commission has not concluded a mutual aid agreement, the council or commission, a representative of the council or commission, or an incident commander may request assistance pursuant to 10-3-209.

(4) As used in this section, the terms "disasters", "emergencies", or "incidents" have the meanings provided in 10-3-103.

History: En. Sec. 1, p. 73, L. 1899; re-en. Sec. 3326, Rev. C. 1907; re-en. Sec. 5109, R.C.M. 1921; re-en. Sec. 5109, R.C.M. 1935; amd. Sec. 1, Ch. 4, L. 1937; amd. Sec. 1, Ch. 97, L. 1947; amd. Sec. 1, Ch. 151, L. 1947; amd. Sec. 1, Ch. 73, L. 1949; amd. Sec. 3, Ch. 2, L. 1965; R.C.M. 1947, 11-1901(b); amd. Sec. 3, Ch. 149, L. 1993; amd. Sec. 6, Ch. 46, L. 1997; amd. Sec. 4, Ch. 292, L. 2007.

7-33-2202. Functions of county governing body. (1) The county governing body, with respect to rural fire control, shall carry out the specific authorities and duties imposed in this section.

(2) The governing body shall:

(a) provide for the organization of volunteer rural fire control crews; and

(b) provide for the formation of county volunteer fire companies.

(3) The governing body shall appoint a county rural fire chief and as many district rural fire chiefs, subject to the direction and supervision of the county rural fire chief, that it considers necessary.

(4) Pursuant to 76-13-105(3), the county governing body shall, within the limitations of 7-33-2205, 7-33-2206, 7-33-2208, and 7-33-2209, either:

(a) directly protect from fire land in the county that is not in a wildland fire protection district, as provided in 76-13-204, or under the protection of a municipality, state agency, or federal agency; or

(b) enter into an agreement for wildland fire protection with a recognized agency, as that term is defined in 76-13-102.

(5) The county governing body may enter into mutual aid agreements for itself and for county volunteer fire companies with:

(a) other fire districts;

(b) unincorporated municipalities;

(c) incorporated municipalities;

(d) state agencies;

(e) private fire prevention agencies;

(f) federal agencies;

(g) fire service areas;

(h) governing bodies of other political subdivisions in Montana; or

(i) governing bodies of fire protection services, emergency medical care providers, and local government subdivisions of any other state or the United States pursuant to Title 10, chapter 3, part 11.

(6) If the county governing body has not concluded a mutual aid agreement, the county governing body, a representative of the county governing body, or an incident commander may request assistance pursuant to 10-3-209.

History: En. Sec. 2, Ch. 173, L. 1945; amd. Sec. 1, Ch. 229, L. 1973; amd. Sec. 13, Ch. 397, L. 1977; R.C.M. 1947, 28-602(part); amd. Sec. 1, Ch. 615, L. 1983; amd. Sec. 2, Ch. 46, L. 1997; amd. Sec. 2, Ch. 292, L. 2007; amd. Secs. 18, 26, Ch. 499, L. 2007.

7-33-2313. Repealed. Sec. 2, Ch. 167, L. 2007.

History: En. Sec. 3236, Pol. C. 1895; re-en. Sec. 2080, Rev. C. 1907; re-en. Sec. 5147, R.C.M. 1921; re-en. Sec. 5147, R.C.M. 1935; amd. Sec. 6, Ch. 118, L. 1965; amd. Sec. 18, Ch. 157, L. 1977; R.C.M. 1947, 11-2007; amd. Sec. 4, Ch. 46, L. 1997; amd. Sec. 2, Ch. 429, L. 2003.

10-3-209. Political subdivision requests for assistance -- application to fire districts, fire service areas, and fire companies in unincorporated places -- immunity.

(1) If an incident, emergency, or disaster occurs in a political subdivision that has not concluded a mutual aid agreement pursuant to 10-3-202, the local or interjurisdictional agency, incident commander, or principal executive officer of the political subdivision may request assistance from another public or private agency.

(2) (a) The following individuals or entities may request assistance with an incident, emergency, or disaster if a mutual aid agreement has not been concluded for protection of the area within the jurisdiction of these individuals or entities:

(i) the trustees of a rural fire district created pursuant to Title 7, chapter 33, part 21, a representative of the trustees, or an incident commander for the district;

(ii) the chief of a rural fire company organized pursuant to 7-33-2311 or an incident commander for the chief;

(iii) the governing body of a fire service area created pursuant to Title 7, chapter 33, part 24, a representative of the governing body, or an incident commander for the area.

(b) A request for assistance by an individual or entity under subsection (2)(a) may be made to any of the following:

(i) a fire district;

(ii) an unincorporated municipality;

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(iii) an incorporated municipality;

(iv) a state agency;

(v) a private fire prevention agency;

(vi) an agency of the federal government;

(vii) a fire service area;

(viii) the governing body of a political subdivision; or

(ix) the governing bodies of fire protection services, emergency medical care providers, and local government subdivisions of any other state or the United States pursuant to part 11 of this chapter.

(3) A public or private agency receiving a request pursuant to subsection (1) or (2) shall determine if it will provide the requested assistance or if it will provide other assistance and shall inform the requesting local or interjurisdictional agency, principal executive officer, incident commander, or other individual or entity making the request, as soon as possible, of that determination. The nature and extent of assistance provided by a public or private agency may be determined only by that public or private agency.

(4) The incident commander of the local or interjurisdictional agency making a request for assistance has overall responsibility for command of the resources provided by a public or private agency responding to a request. However, operational control of individual pieces of equipment and personnel furnished by the responding public or private agency remains with that agency.

(5) This section does not waive an immunity or limitation on liability applicable to any of the following entities or individuals requesting or receiving assistance pursuant to this section:

(a) a fire district;

(b) a fire service area;

(c) a fire company;

(d) an unincorporated municipality, town, or village;

(e) a political subdivision; or

(f) an agent, employee, representative, or volunteer of an entity listed in this subsection.

History: En. Sec. 8, Ch. 46, L. 1997; amd. Sec. 6, Ch. 292, L. 2007.

10-3-103. Definitions. As used in parts 1 through 4 of this chapter, the following definitions apply:

(1) "Civil defense" means the nuclear preparedness functions and responsibilities of disaster and emergency services.

(2) "Department" means the department of military affairs.

(3) "Disaster" means the occurrence or imminent threat of widespread or severe damage, injury, or loss of life or property resulting from any natural or artificial cause, including tornadoes, windstorms, snowstorms, wind-driven water, high water, floods, wave action, earthquakes, landslides, mudslides, volcanic action,

fires, explosions, air or water contamination requiring emergency action to avert danger or damage, blight, droughts, infestations, riots, sabotage, hostile military or paramilitary action, disruption of state services, accidents involving radiation byproducts or other hazardous materials, outbreak of disease, bioterrorism, or incidents involving weapons of mass destruction.

(4) "Disaster and emergency services" means the preparation for and the carrying out of disaster and emergency functions and responsibilities, other than those for which military forces or other state or federal agencies are primarily responsible, to mitigate, prepare for, respond to, and recover from injury and damage resulting from emergencies or disasters.

(5) "Disaster medicine" means the provision of patient care by a health care provider during a disaster or emergency when the number of patients exceeds the capacity of normal medical resources, facilities, and personnel. Disaster medicine may include implementing patient care guidelines that depart from recognized nondisaster triage and standard treatment patient care guidelines determining the order of evacuation and treatment of persons needing care.

(6) "Division" means the division of disaster and emergency services of the department.

(7) "Emergency" means the imminent threat of a disaster causing immediate peril to life or property that timely action can avert or minimize.

(8) (a) "Incident" means an event or occurrence, caused by either an individual or by natural phenomena, requiring action by disaster and emergency services personnel to prevent or minimize loss of life or damage to property or natural resources. The term includes the imminent threat of an emergency.

(b) The term does not include a state of emergency or disaster declared by the governor pursuant to 10-3-302 or 10-3-303.

(9) "Political subdivision" means any county, city, town, or other legally constituted unit of local government in this state.

(10) "Principal executive officer" means the mayor, presiding officer of the county commissioners, or other chief executive officer of a political subdivision.

(11) "Temporary housing" means unoccupied habitable dwellings, suitable rental housing, mobile homes, or other readily fabricated dwellings.

(12) "Volunteer professional" means an individual with an active, unrestricted license to practice a profession under the provisions of Title 37, Title 50, or the laws of another state.

History: En. Sec. 3, Ch. 218, L. 1951; amd. Sec. 2, Ch. 220, L. 1953; Sec. 77-1303, R.C.M. 1947; amd. and redes. 77-2302 by Sec. 9, Ch. 94, L. 1974; amd. Sec. 4, Ch. 335, L. 1977; R.C.M. 1947, 77-2302; amd. Sec. 4, Ch. 430, L. 1983; amd. Sec. 2, Ch. 71, L. 1987; amd. Sec. 1, Ch. 176, L. 1995; amd. Sec. 1, Ch. 391, L. 2003; amd. Sec. 4, Ch. 63, L. 2009; amd. Sec. 2, Ch. 255, L. 2009.

Common Benchmarks &Tactics for Structure Fires

Common Benchmarks and Tactics for EMS/MCI

START Triage

Resource Definitions

The Prepared FD

Montana Engine Company +

Critical Factor	Unknown	Discernable	Clearly Present	Serious Hazard	Extremely Severe	Fatal
Critical Factors – Structure Fire						
Build Size		Small	Medium	Large	Humongous	Ultra
Fire Stage		Nothing Showing	Working	Extended	Deep	Fully Inv
Location of Fire		Known	Unknown			
Ventilation		Seeping	Some Venting	Multiple Vents		Structural Damage
Smoke		Faint	Present	Moderate	Heavy	Zero Vis
People		Present	Exposed			
Ltwt. Const.		Not Exposed	Exposed	Insulted Involved	Involved	Kaboom!
Exposures		Distant	Some Exposures	Multiple Exposures		Exposures on Fire
Basement (s)		Known (360°)	Unknown (no 360°)			
Wind		Any Wind	Upwind	Downwind/In Flow Path		
Water onto Fire		Do-able/Standard	Mod Barrier	Complex	Heavy Obstruction	Locked Out
Occ Hazard		OK	Light	Mod	Mod+	Heavy
Fire Load		Normal	Normal+	Mod	Mod+	Heavy
Access In		OK	Mod Barrier	Complex	Heavy Security	Locked Out
Exit Out		OK	Complex	Detained	Stuck	Flat-Assed Trapped
Interior Clutter		OK	Confused	Obstacle Course	Awful Maze	Grid Lock
Resources		3 deep/operating position + command officers in forward positions				Not enough/no reserve
Water Supply vs Fire	Fire	Enough+Reserve	Enough	Less than Enough		No water
Bldg. Use - Comm'l/Residence		Small-Med Res	Med-Lg Residence	Small Med Comm'l	Med-Large Comm'l	Huge-Ultra Commercial
Distance into Hazard Zone		50' Normal	80' Stretch	150' Big Stretch	250' Too Far	400' Fatally Far

Thanks to Fire Chief Alan V. Brunacini for writing this down & sharing it.

Initial Response Incident Commander

Common Benchmarks & Tactics for Structure Fires (2015)
(Single family dwelling - 2,000 sq ft or less, 2 stories or less, w/ basement)

1. **Fire Control and Primary All Clear**

Where is fire? What time is it? Protect savable lives –
 Find the fire, Cut the fire off.

Assess - Observe and Orient
↓
fire or smoke in structure reported ☐ multiple calls ☐ smoke/fire visible
↓
Establish Command ➔ Establish water supply
↓
Smoke or fire from structure?
  ↙   ↓

No ➔ Investigate (IC, crew,   **Yes** ➔Look & TIC **360°**➔• windows • doors
  SCBA, radio, irons, TIC)   • basement • vents • roof • gable ends
                             ↙

Person visible or credible info, + accessible?

    ↙   ↓
  No   **Yes** ➔ **Rescue**
  ↙   • Consider stopping the fire early, to make Rescue
Fire Attack   ⬅   ↵

↓

Deploy line(s)-   ⇔   • "**Standard**" 1 ¾", 200+ gpm
  Size line for fire(pessimistic) • "**Bigger**"   500 + gpm, master stream,
↓   portable monitor, 2nd 1 ¾"
                    • "**Quick**"   Master Stream / SHaN
↓

Position Line(s) - Assess area for source(s) of smoke/fire –
                  Exterior, small opening(s)
↓

Fire Attack on heat (continues at top of next page ↗)

Fire Attack on heat
  ↓
  Assess→ Flow→ Assess ↘
  (Exterior, 30 sec., small opening) ↘

↗   ↑   ↓

  360° / utilities ← **No** ← **Cool?**

                                 ↓
                                 Yes
                                 ↙
No ← **360° & Utilities, then,**
        Clear Smoke/vent (30-60 sec.)
                 ↓
↑   **Yes**
                 ↓
No ← **Fire control / ✓ voids**
        (small opening, structural members burned?,
         threshold, interior, basement to attic, exposures)
                 ↓
              Yes
              ↙
Primary Search (w/On Deck-RIC, 360°)

To Do:

☐ **Establish On Deck**, forward deploy, brief, recon(TI) 360°, improve egress, est.Triage	☐ **Supply water to pumper** (lay-in, or 1st tanker direct connect)
☐ **Access & Egress** - open up New access & egress – ladders up and down	☐ **Secondary Search/All Clear** - Occupant / Customer Accountability - Customer care
☐ **Check for extension**, all sides, voids, layers, find burned/unburned line(TI)	☐ **Decon/Rehab** - connect w/EMS
☐ **extension in exposures** layers /voids/Loss Control(TI)	☐ **Loss Control** (w/SCBA)
	☐ **PIO** ☐ **Liaison(s)**
	☐ **Customer Care**
	☐

2. **Loss Stopped**
☐ Loss Control - Clean up, cover up, and store (w/SCBA)
☐ Check for extension(TI) , Decon

3. **Incident Stabilized & Customer cared for**
☐ Customer Care/Recovery Assistance to customer – **connect**

Common Benchmarks and Tactics for EMS/MCI

1) All Patients Triaged/ Extricated
☐ Initial dispatch information for Hazmat Cues
☐ Get smarter about incident (people, AQ monitoring, Info)
☐ Hazmat cues – Occupancy/ Containers/ Signage/ Papers/

People
☐ Locate/ Designate Transportation & Treatment Areas
☐ Locate Patients – Consider ejections & walk aways (homes)
☐ Stabilize Vehicle/ Mechanism

Cribbing / Chocks, Deflate tires, De-energize
☐ Protect/ Access points – 1 ¾" handline per vehicle

De-energize, Remove Glass, Try Doors
☐ Triage – Give Pt numbers (**I and D**) to Treatment & Transport
☐ Ask Treatment for Pt movement plan to Treatment Areas
☐ Extricate Pts – Roof, Doors, Dash Roll
☐ Move Pts to Treatment Areas

2) All Patients In Treatment (Primary All Clear)

☐ Establish Treatment Areas: **I**mmediate/ **D**elayed/ **M**inor/ Morgue
☐ Tell Triage/ Extrication about patient movement plan
☐ Re-Triage within Treatment Area – ABC's
☐ Tell Transport Pt numbers (**I and D**) & ask about loading areas
☐ Move Pts to loading areas

3) All Patients Transported
☐ Tell Treatment Pts movement plan to loading areas
☐ Contact Medical Control w/ Pt numbers (**ID**) / Get destinations
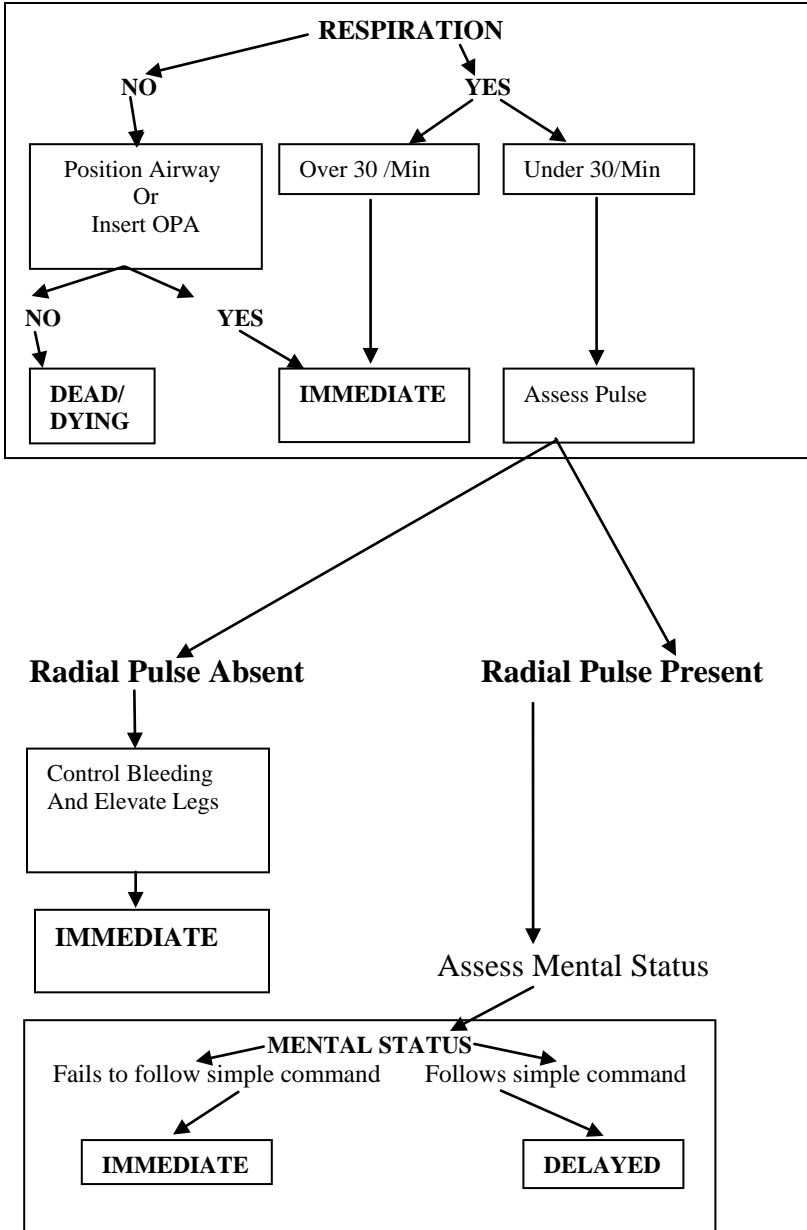☐ Record Pts ID, Transportation & Destination

LOAD/GO

Start Triage

All Walking Wounded ➝ **MINOR**

RESPIRATION

NO / **YES**

Position Airway
Or
Insert OPA

Over 30 /Min | Under 30/Min

NO / **YES**

DEAD/ DYING | **IMMEDIATE** | Assess Pulse

Radial Pulse Absent | **Radial Pulse Present**

Control Bleeding
And Elevate Legs

IMMEDIATE

Assess Mental Status

MENTAL STATUS

Fails to follow simple command | Follows simple command

IMMEDIATE | **DELAYED**

Resource Definitions

I. Structure Fire Crew

A structure fire crew is defined as three or more fire fighters(including the crew leader), capable of operations inside a structure fire, with their own equipment, supervision, communication and transportation.

Equipment:
SFPPE
1 SCBA per fire fighter (if possible, 1 or more spare tanks per SCBA)
1 Halligan tool or equal per crew ("irons")
1 flashlight per crew
1 radio

Supervision: One crew leader per crew

Radio Call Sign: Last name of crew leader (incident) or
Structure Crew (Dispatch)

II. Emergency Medical Service Crew:

An emergency medical service crew is defined as two (prefer three or more) members, all of whom are capable of BLS operations at the first responder level with their own equipment, supervision, communication, and transportation.

Equipment:
EMS "Jump Kit"
Oxygen tank, regulator, and delivery equipment (mask and/or cannula)
Infection control equipment including, but not limited to, gloves, eye protection, mask, long sleeves, long pants and shoes
1 radio
1 flashlight

Supervision: One Radio Call Sign: Last name of crew leader
(incident) or EMS
Crew (Dispatch)

III. Structure Fire Engine

A structure fire engine is defined as a mobile fire apparatus with specified equipment, a driver/operator and a Structure Fire Crew. Staffing will include one fire fighter qualified to drive and operate the engine, and a Structure Fire Crew. Driver/operator will stay with the engine.
Engines for structure fire assignments will have the following capabilities:

Pump, 500 GPM(minimum), with 20' suction hose capable of flowing the rated capacity of the pump.
Water tank, 400 gal.

Equipment:
1 - 150 foot(or longer), preconnected 1.5 inch(or larger) hose
1 - Positive pressure blower/fan
1 - Ventilation saw
Ladders, one 20' extension, one 14' roof
Adapt to 2.5" NST male + female, 4.5" NST male, 6" NST female, and 5" Storz
Hydrant wrench, 1 radio, 1 flashlight

Definition may be met using multiple vehicles (ex. 2 door engine with a pick up truck, with a D/O and a Structure Fire Crew)

Radio Call Sign: *"Engine"*

IV. Brush or Wildland Fire Engine

A mobile fire apparatus with specified equipment and a minimum staffing of three fire fighters including a qualified driver/operator, a fire fighter(may be more than one), and a crew leader capable of fighting wildland fires. The driver/operator will stay with engine.
Brush or Wildland apparatus will have the following minimum capabilities and equipment:
Pump, 50 GPM, with 20' suction hose capable of flowing the rated capacity of the pump
Water tank, 200 gal.

Equipment:
Personal Protective Equipment for members fighting a wildland fire:
Clothing, Nomex or NFPA 1977 compliant or greater protection
One fire shelter per person assigned to the apparatus.
Hand tools, three wildland tools of the department's choice and
bladder bag
2 radios, 1 of which shall be portable
1 flashlight

Radio Call Sign: "*Brush or Wildland*"

V. Tanker or Water Tender

A mobile fire apparatus with specified equipment and a driver/operator.
One fire fighter capable of driving and operating the apparatus, with
personal protective equipment appropriate to the call (either wildland or
structure fire).

Pump, suggest 250 gpm
Tank, 1000 gal., Dump, 34 inches above ground level, Fill, 5 inch Storz
coupled.

Equipment:
Portable Tank
1 flashlight

Radio Call Sign: *"Water Tender" or "Tanker"*

VI. Rescue

A mobile fire apparatus with four(or more) fire fighters including a crew
leader and a driver operator capable of performing rescue services and the
work of a structure fire crew. The crew assigned to the Rescue will have
the equipment, supervision, and
transportation specified for a Structure Fire Crew elsewhere in these
procedures.

Additional Equipment:
Set of basic rescue hand tools including but not limited to:

1 - Ball-peen hammer, 1 - Spring loaded center punch, 1 - chisel
Cribbing
Lifting device - air bags, jacks, spreader, rams Hand winch for remote
holding - related rope, straps, etc
AC power generation - related lights, extension cords, adapters Power
hydraulic spreader
Ram - power hydraulic or hand hydraulic
Reciprocating saw - blades for metal and wood, spare blades for both
Other power saw(s) - to cut wood and metal, extra blades, chains, saw fuel
2 radios, 1 of which shall be a portable radio
1 flashlight

Recommended Equipment :-
Air Quality Monitor(ex. four gas, LEL, O2, H2S, CO)

Radio Call Sign: "*Rescue*"

VII. Ladder

A mobile fire apparatus with specified equipment and a crew leader, a
driver/operator and a minimum of two fire fighters. The aerial device will
have a rated ladder, or platform, with a minimum working extension of 65
feet.

Equipment:
All equipment specified for a Structure Fire Crew
Full NFPA compliant(to current standard) of ground ladders
1 flashlight

Radio Call Sign: "*Ladder" or "Truck*"

VIII. Support

A mobile fire apparatus with a driver/operator capable of supporting
breathing air, salvage, loss control, emergency decontamination, defensive
spill containment, and fire fighter rehab services.

Equipment:
SCBA cascade or compressor - three large tanks, 4500 psi minimum
Assorted absorbents (clay, other)

Brooms
Fire Fighter rehabilitation supplies
Loss Control/Salvage supplies
Emergency decontamination supplies(Haz-Mat First Responder
Operations Level)
2 radios, 1 of which shall be a portable radio
1 flashlight
Radio Call Sign: "*Support", or "Squad*"

IX. EMS Vehicles (non-transporting):

A mobile fire apparatus that delivers an EMS Crew (including an assigned
crew leader) and additional BLS equipment to an incident. This definition
is for non-transporting units.
This vehicle is staffed with a emergency medical service crew which is
defined as two (prefer three or more) members, all of whom are capable of
BLS operations at the first responder level with their own equipment,
supervision, communication, and transportation.

Equipment:
EMS "Jump Kit"
Oxygen tank, regulator, and delivery equipment (mask and/or cannula)
Infection control equipment including, but not limited to, gloves,
eye protection, mask, long sleeve shirt, long pants and shoes
BLS orthopedic stabilization equipment
Blankets
2 radios, 1 of which shall be a portable radio
1 flashlight

Radio Call Sign: *"QRU"*

X. Transport Ambulances

The request for transport ambulance resources will be initiated by the IC,
or designee, of the specific incident. See page 130, Montana Fire
Department Based EMS Transport Resources

XI. Command Vehicles

A mobile fire apparatus, capable of seating four full sized fire fighters, offering strong radio communications capability and support for incident management functions.

Equipment:

Full set of incident management system documentation
Full set of reference material appropriate to the incident
2 radios, 1 of which shall be a portable radio, 1 flashlight

Radio Call Sign: "*Management", "Command*"

XII. Management Staff

A fire fighter with the ability to perform a variety of incident management functions. Also a person with a specific ability in the requested area of incident management, i.e. Water Supply Branch Director.
Equipment: Personal Protective Equipment, appropriate to the call (structure and/or wildland fire).
Flashlight and 1 radio

Transportation: Individual, may be a fire department vehicle or when authorized by the Fire Chief of the fire department granting mutual aid, a personal vehicle.

Radio Call Sign: "*Management Staff", "Command Staff*"

Notes:
1. All radios are required to be capable of communicating on a minimum of the 7 frequencies including those listed in the communications plan.

2. Transportation of fire fighters on Structure Fire Crews, EMS crews, and Management Staff shall be by fire department vehicle or, when authorized by the Fire Chief of the fire department granting mutual aid, a personal vehicle.

XIII. A Prepared Fire Department(or community) –

notes by Jane Ellis, 12-06-2006

1. Competent with the basics
   Command
   Fire fighting and Rescue
   EMS - (if not direct delivery, then closely connected with whoever does EMS)

2. Agile, able to adapt basics to other types of events

3. Connected with:
   Other emergency responders, EMS, SAR, LE, 911, PH, Mutual Aid
   Community groups - Churches, service groups, youth groups, etc
   Public - ability to communicate

4. Families covered
   Spouse /kids know members will be gone
   Provide for emergencies @ home

5. Acknowledge the possible, prepare(first) for the reasonable & likely

6. Stockpiles - 1-2 weeks of stuff
   Basics and Non-perishable,   As small storage as possible
   Make clear decision about whether the stockpile is for public or department(& families)
   Maintain stockpile -   or don't bother to develop it

7. Encourage other agencies to do their part(FD shouldn't have to stockpile body bags)

8. Know how to quickly put citizen volunteers to use

9. Questions to think about: How long? How complete?   For how many? How large an area?

10. Host set expectations for help.

Maybe it's incremental. Are we more/better prepared than we were yesterday?

USAR in Montana – Equipment Lists

Engine Co. + (plus)

Some, Some More, A lot
Collapse Rescue

Basics PPE - For every one -
for 1 rescue crew of 5 FFs for 24 hours of work
Dust masks - (N–95) - (6 per FF/ 30 per crew)
Eye protection - glasses and goggles, full face respirators
Ear Plugs - disposable
Work gloves - plain leather, 3 pair FF / 15 pair per crew
Work clothes - coveralls, bib overalls and shirt, pants, &
Jackets (hats)
Hard hats or rescue helmets
Helmet lights and Flashlights plus batteries and bulbs
Batteries - industrial alkaline (30 AA per person 150 per crew,)
Drinking water - 35 ½ liter bottles(case)/ FF - 5 cases/ crew
Food - 20 meals for 5 person crew per 24 hours
Knee pads - two sets/FF, 10 sets /crew - foam or hard
Marking crayons, perm markers, and spray paint - lots
Marking instruction diagrams - laminated & corded
Yellow barrier tape - 5 rolls (1,000 ' per roll)
Waterless hand soap - 8-16 oz per crew per 24 hours
Paper towels, TP
Eye wash, eye drops, sun screen, lip protective
Small pocket mirrors, 6 per crew
Rain gear - 1 set per person
Duct tape - 1 roll per person
Hand tool kit - small hand tools
Folding chairs
Tarps
Notes: add more for give-aways, ex. Water, dust masks, etc

Hand tools - Dismantle or disassemble Wood Frame

Pry bars - 60" pinch single bevel chisel point (ex. Council Tool)
Hand saws for wood
Metal hack saws - spare blades
Irons - Axes and or sledge or maul
Crow bar(36 inch) and
Nail puller (Wonder bars) - all sizes
White buckets and white bucket straps
Shovels - 28" folding head,
square nose(start with longer handle, cut to size)
spade (long handle)
Bottle jacks - 12 ton, 20 ton
Utility knives - extra blades
Hand mauls - 4 lbs with ribbed handle (Nupla)
1 inch x 12 inch or longer cold chisels (Enders) with 9 or 10 inch
Vise grips for stand off
24 ea 4" x 4" and 2"x 4" 8', 12" x 12" by 3/4" gussets what will fit
on your truck
Tool belts
16 to 20 oz framing hammers, tapes, nails (8p and 16p), squares,
pencils
Listening sticks (solid and 1.5 to 2 inch PVC)

The next step is electrical powered recip saws, gen set, cords, lights

Power Tools - first step - recip saws, gen sets, cords, lights
2 ea, 2 kw generators (46 lbs ea)
2 ea, 100' 10/3 cords
2 ea, 300-500 watt work lights
2 ea, 11amp recip saws with long cords
many extra blades (boxes of 100)
2 ea extra gas, plugs, oil and small tools
The next step is search cam, more power tools, chain and rotary saws,
hydraulic rescue tools, air bags etc

Power Tools - second step - Search Cam is force multiplier
Search camera
Chain saws
Rotary saws
Drills (cordless with lots of spare batteries and chargers)
Rebar cutters
Power hydraulic, bolt cutters, hack saws, recip saws
Hydraulic tools set - Spreaders, cutters, rams,
Air bags
Rope rescue gear
Shoring stuff wood members, 2inch pipe and screw jack ends
Air compressor and hoses and air nailers
The next step is power tools for concrete construction
Power Tools - third step - Concrete boring and saws
Boring tools
Concrete saws
Shoring notes:
20+ - 5/4" - 4' x 8' sheets
Wood (4" x 4") or pipe (2 inch) with screw jack ends are fine
12 inch power miter saw
Ellis clamps
Airshore or Paratech type stuff Tele post are fine

Hazardous Materials

Haz-Mat Critical Factors

Common Benchmarks

Critical Factors

Chemical/Biological Indicators

Chemical & Physical Properties

Vapor Density

Decontamination

Haz-Mat Operations Checklist

8 Common Hazardous Materials Found in Montana

WMD Considerations/Actions

CST

Haz-Mat Critical Factors

John Culbertson, PhD, MT Fire Training School

There are basically 5 questions or considerations that need to be addressed to get a very good handle on hazard behavior.

1. **Is it a SOLID, LIQUID, or GAS?**

    SOLID = Keep water off it.!! Otherwise probably not a big deal. Cover it if it is blowing around.

    LIQUID = What is its vapor pressure? Over 20 mm Hg is significant, consider where the vapors are going and their effects. Where is it flowing? Consider defensive confinement.

    GAS = Hard to control where it's going. Is it dispersing or hanging around?

2. **What are the environmental/topography conditions?**

    Temperature, Wind, Precipitation. All effect the hazard behavior, how depends on the product. Use NIOSH Pocket Guide. Stay upslope, upwind

3. **Will it BURN?** If an LEL/UEL is listed, it has the potential to burn. What is its FLASH POINT (Fl.P.)? If it less than ambient, it could flash.

4. **Will it RISE or SINK?**

    LIQUIDS = If it is soluble (miscible) it will not separate. It will make a new solution. If it is NOT soluble, Specific Gravity will tell you if it will sink or float (Water =1, < floats, > sinks). If it floats, there is a good chance it is flammable.

    GASES/VAPORS = Use Molecular Weight (M.W.). M.W. air = 29, < rises, > sinks.

5. **Will it mix with water?**

    Solubility = % by weight that will mix with water. Miscible means completely soluble. Ties in with question #4.

These questions are in no particular order and they are for the most part dependant upon one another.

Common Benchmarks & Tactics for HazMat FRO (02-01)

1) Primary All Clear and Hazard Confined

Strategy is DEFENSIVE at FRO level

- ☐ Identify Product
- ☐ Hazard Behavior Prediction- NAERG and Chem
  Physical Properties(NIOSH guide)
- ☐ Establish Emergency Decon
- ☐ Find responsible party
- ☐ Stay out of the product

Isolate -	Evacuate -	Decon /Hot Zone/ Confine
Deny Access Monitor hazard & weather	PPE w/ SCBA Monitor hazard & weather	Known Product (NAERG) PPE w/SCBA Monitor hazard & weather

- ☐ **Protect saveable lives** - Remove people from hazard and/or hazard from people
- ☐ **FIND THE COLD ZONE & DO DEFENSIVE CONFINEMENT** (Wind and slope)
- ☐ Utilities / Ignition Sources- control'em
- ☐ Set up Rehab
- ☐ Execute Water Supply Plan
- ☐ **Establish On-Deck or RICs**, forward deploy, brief, recon, improve egress, establish Triage/EMS
- ☐ Check for extension, all sides, voids, downslope, downwind, downstream
- ☐ Check for extension in exposures/layers /Loss Control
- ☐ Secondary All Clear- Occupant / Customer Accountability

2)   Incident Stabilized & Customer cared for
- ☐ Customer Care/Recovery Assistance

Connect with the Customer

Command - Critical Factors Worksheet for HazMat Incidents

Nothing savable - no risk to FFs- Protecting savable property - Risk a little - Protect savable lives - Risk a lot

	Discernable	Clearly present	Serious Hazard	Extremely Severe	Fatal	Unknown
Are people present?	NO people	YES people				
Is there a release?	NO	YES (use ERG)	Flammable	Flammable and/or Toxic		
Where is it going?	Away from people		Toward people			
Fire Involvement	Product burning		Ignition source present	Impingement		
What is it?	Solid		Liquid/Gas			
Ventilation?	Diluting on it's own			Not diluting		
Wind/Slope alignment?	Neither in alignment		One in alignment	Both in alignment		

Chemical/Biological Incident Indicators

Indicators of Possible Use

Unusual Dead or Dying Animals

Lack of insects

Unexplained Casualties

Multiple Victims
Serious illness
Nausea, disorientation, difficulty breathing, convulsions.
Definite casualty patterns

Unusual Liquid, Spray or Vapor

Droplets, oily film
Unexplained odor
Low flying clouds/for unrelated to weather

Suspicious Devices/Packages

Unusual metal debris
Abandoned spray devices
Unexplained munitions

Haz-Mat Situations

Indicators of a Possible Haz-Mat Incident

1) Vapor plume – low lying fog – cloud
2) More than a single product mixing or potentially mixing
3) Product is on fire or fire is impinging on container
4) Product is reacting with air or water – looks like it is boiling or bubbling
5) Victims are down and not responding
6) Victims complaining of dizziness, nausea, difficulty breathing, burning/reddened skin, diminished level of consciousness.
7) Dead animals or plants
8) Fire with weird color flame or smoke
9) Container severely damaged – large crack dents, exposed to direct flame contact
10) Sound – rapid escape of gas or liquefied gas – loud roar, high pitch, crackling noise
11) Container cooking off or ruptured containers in area
12) Containers and equipment used to make illegal drugs (acetone, ammonia, lye, lithium, etc)

Chemical & Physical Properties for Haz Mat

Culbertson, Storment, NAERG, & NIOSH
Pocket Guide, r.2007-03

1. **Temperature is a big deal**
   68°F - 72°F standard temp floor

2. **MW - Molecular Weight(tells if a vapor/gas will rise or sink)**
   air = 29, mw of >29 tends to sink, mw <29 tends to rise and dissipate, look low/down/down hill

3. **VP - Vapor Pressure**
   760mmHg = 1 atmosphere at 68°F
   VP of product >760mm, product will be gas,
      lower ignition temp
   VP of product <760mm, product liq/solid,
      higher ignition temp
   For reference -
   VP of 10 mmHg is a liquid that is very volatile

VP-0	VP-18	VP-180	VP-2610
rock	H_2O	acetone	Acetylene

4. **FP - Flash point in ^{o}F - Need ambient temp -**
   FP <ambient - produces vapor, LEL somewhere
   FP >ambient - no vapor, no LEL
   For reference - gasoline has a FP of -36°F

5. **IT - Ignition temp -Ranges 350°F-1200°F**
   we bring ignition sources(fire trucks, tools)

6. **SOL – Solubility – Will it mix with water?**
   Miscible – Completely mixes with water (100% soluble in water)

7. **SPGR** - Specific gravity - When mixed with water, and not miscible, will it sink or float? SPGR water = 1 SPGR >1 sinks, SPGR < 1 floats

Vapor Density

John Culbertson, PhD, MT Fire Training School

1. If > 1 but < 2, mixes well with air, generally found at waist level.
2. If > 2 but < 3, does not mix well with air, generally found at knee level.
3. If > 3, does not mix with air, found low to the ground.

Notes on vapor density/molecular weight/mixing:

Our atmosphere is a very dynamic, turbulent, mixing chamber, even at ground level.

We need to stress the word 'tendency" when we refer to vapors rising or sinking. If there is even the slightest of a breeze, a chemical with a VD > 1 can be found at dangerous concentrations well above the ground.

For example: use is Argon (Ar). It is the third most abundant chemical in our atmosphere. It has a MW of 40 (VD = 1.4). It is found at an equal concentration from ground level to over 60,000 feet.

Another example are the chlorofluorocarbons (CFC's). CFC's are VERY heavy, but in a short period of time they make it to the stratosphere and have an effect on the ozone layer.

All this is scientifically proven. Even considering the longer mixing times that Ar and the CFC's have compared to a hazmat event, significant mixing occurs almost instantly due to the nature of our turbulent atmosphere.

Therefore, in the chem. Phys properties for the six chemicals, under Vapor Density, you might change "will" collect in low areas to "can". People should not think a product will only be found low to the ground and possibly not worry about an ignition source 10 feet above ground.

Concentration in air (ppm) 1300 Rule

For approximate vapor concentration of a solid or liquid chemical in a container (building), Multiply VAPOR PRESSURE by 1300.

  Example: Vapor Pressure of 50 mm Hg

  50 mm Hg x 1300 = 65,000 ppm

  Compare 65,000 ppm to IDHL. Gives worst case scenario.

Haz Mat Emergency Decon FRO Level

(03/02/07)

For Fire Fighters with PPE and SCBA

Step #1 - **Rinse all surfaces** w/diffused water stream, (watering wand), completely wet, about 1 minute

Step #1a - **Spray soap solution** on all surfaces (pump spray can), no scrub/contact, completely cover with soap spray, about 2 minutes**(use only for oily, immiscible products)**

Step #2 - **Rinse all surfaces** w/diffused water stream, (watering wand), completely rinse off all soap solution, about 2 minutes

Step #3 - **Move** to undress area at end of decon area

Step #4 - **Remove SCBA facepiece last**, remove and bag PPE gear and clothing.

Step #5 - **Put on clean** Tyvek suit

Step #6 - **Do EMS** evaluation

For patients:

Step 1 - Rinse while they are removing clothing

Step 2 - Remove clothing, leaving undergarments on person(bag)

Step 3 - Rinse again after clothing is removed

Step 4 - Put on clean Tyvek suit, go to EMS evaluation

> Haz Mat notes:
> CL_2 - Poisonous gas, skin absorbable
> _____ cide = bad for humans
> Infinite dilution is the solution
> "What is the worst thing that will happen if we do nothing?"

Hazardous Materials Checklist/ Site Safety Planning

1) Incident type:

☐ Chemical release   ☐ Fire
☐ Meth Lab   ☐ Terrorism
☐ Casualty/EMS   ☐ Bomb
☐ Other:_____.

2) Risk Management Assessment:

☐ Savable Life at Risk   ☐ Savable Property at Risk   ☐ No Risk

3) Incident Location and directions:

4) Hazards:

☐ Flammable   ☐ Topography
☐ Slip, Trip, Fall – Surfaces ☐ Toxic Inhalation Hazard (TIH)
☐ Corrosive   ☐ Lighting
☐ Explosive   ☐ Out of sight- Recon - go/no go
☐ Reactive   ☐ Energized

5) Environment:

☐ Current Winds: Direction:_____ Speed: MPH
☐ Forecasted Winds: Direction:_____ Speed: MPH
☐ Temperature: Current- ___Range - High ____Low ____
☐☐ Precipitation; Current -Yes ___, No___
☐☐ Forecasted - Yes __ , No ___, Dew Point _____

6) Container:

☐ Flame Ire impingement(fall back 1 mile IAW Guide Page 115)
☐ Battle Damage - No leak_____/Leaking_____

Hazardous Materials Checklist
(cont'd)

7) Chemical:

☐ChemicalName:_____

☐UN Ident. Number: _____, ERG Guide Number;_____,

__NIOSH Guide page:_____, yr._____, color_____

☐NFPA 704   Fire ____Life ____Reactive _____ Special _____

☐Amount in container _____Gallons, or Pounds

☐Amount spilled _____

☐Continuous spill   _ Yes _ No

☐Estimated Rate of Leak _____(amount) per_____(time)

☐Vaporizing/Evaporating?   _ Yes _ No

☐Spilled on Ground   _ Yes _ No

☐Spilled on Water   _ Yes _ No

8) Incident Command:

    Incident Name: _____

    Incident Commander: _____

    IC, Organization: _____

    Safety Officer: _____

    HM Task Force Liaison: _____

    HM Task Force Leader: _____

    HM Tech Safety Officer: _____

    PIO phone number: _____

9) Responsible Party for Release:

    Name: _____

    Address: _____

    Insurance Company: _____

    Phone Number: _____

    Point of Contact: _____

    On-Scene Liaison: _____

Hazardous Materials Checklist
(cont'd)

10) Action Plan:
☐Handle locally with single jurisdiction resources: _ Yes _ No
☐Deny Access by isolating incident   _ Yes _ No
☐Evacuation   _ Yes__No
☐Protect in Place   _ Yes__No
☐**Zones secured(consult NAERG)**   _ Yes_ No
    ☐ Hot
    ☐ Warm
    ☐ Cold
☐Call for local mutual aid?   _ Yes_ No
☐Call for State Assistance?   _ Yes_ No
☐Emergency(FRO) Decontamination   _ Yes_ No
☐Tech Level Decontamination   _ Yes_ No
           Decon source document:
☐FRO actions
☐Tech - Recon Actions
☐Tech - Entry Actions
☐Entry Rescue   _ Yes_ No
☐Stay back and allow to self stabilize   _ Yes_ No
☐Monitor spill and call for additional expertise   _ Yes_ No
☐Confine spill to protect property and envir.   _ Yes_ No
☐Notifications and documented   _ Yes_ No

11) Injuries and Fatalities:
☐Number injured at scene:_____.
☐Number exposed to release:_____.
☐Number contaminated:_____.
☐Number fatalities at scene:_____.
☐Hospital notified?   _ Yes_ No
☐Coroner Notified?   _ Yes _ No

Hazardous Materials Checklist
(cont'd)

12) Personal Protective Equipment:
- Equipment on site:
- Level A   Yes___ , No___
- Level B   Yes___ , No___
- Level C   Yes___ , No___
- F/F Turnouts   Yes___ , No___

- Number Self Contained Breathing Apparatus; _____
- Amount of Grade D air needed - # of tanks_____, psi_____

- Equipment needed on site:
- Level A,   Yes___ , No___
- Level B,   Yes___ , No___
- Level C,   Yes___ , No___
- SCBA   Yes___, No___
- F/F Turnouts   Yes___ , No___

13) On Deck - Rapid Intervention Plan

Staffing needed:_____

Level of Protection needed:_____

HM Cert Level needed:_____

☐Staffed ☐ Equipped ☐ Training Cert

Location

☐ Decon Plan for On Deck - Rapid Intervention

☐ Commo Plan

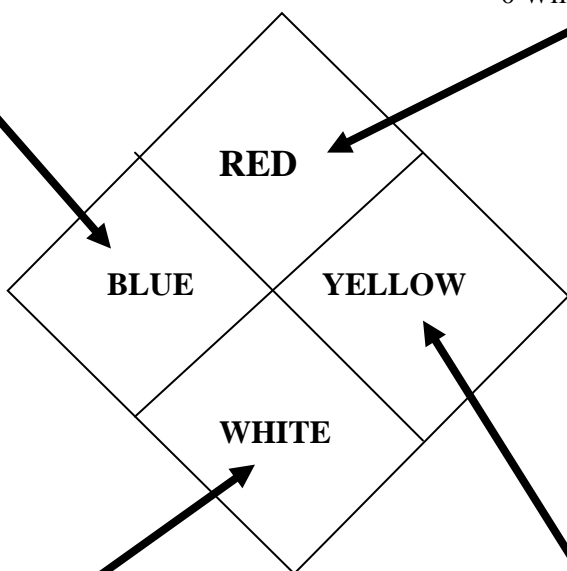Radio Procedures for On Deck - Rapid Intervention Deployment

On Deck - Rapid Intervention works for: _____

HEALTH HAZARD
4 Deadly
3 Extreme Danger
2 Hazardous
1 Slightly hazardous
0 Normal Material

FIRE HAZARD
4 Below 73° F
3 Below 100°F
2 Below 100°F < 200°F
1 Above 200°F
0 Will not burn

RED

BLUE

YELLOW

WHITE

REACTIVITY
4 May Detonate
3 Shock & heat may detonate
2 Violent Chemical change
1 Unstable if heated
0 Stable

SPECIFIC HAZARD
ACID – Acid
ALK – Alkali
COR – Corrosive
OXY – Oxidizer
P – Polymerization
W̶ – Use no Water

83rd Civil Support Team – Montana National Guard

How to Request our Assistance:
Official requests for support during an incident must process through your local Disaster and Emergency Services (DES) Coordinator to the State DES Operations Center at (406) 324-4777.

What We Do:
 - We work for the Incident Commander
- We respond to incidents involving weapons of mass destruction (WMD), hazardous materials, and other emergency situations
- We operate in cooperation with regional HAZMAT teams and other local first responders
- We provide presumptive identification of chemical, biological, and radiological agents
- We provide recommendations on event mitigation, medical treatment, and follow-on state and federal resources
- We facilitate communications interoperability and provide secure reach-back capabilities
- On request, we can provide immediate response to save lives, prevent human suffering, and mitigate property damage under the authority of Department of Defense Directive 3025.1

What We Don't Do:
- We do not assume command of an incident
- We cannot perform Explosive Ordinance Disposal / Bomb Squad operations
- We cannot conduct mass casualty decontamination operations
- We cannot operate continuously for more than 72 hours on scene without additional personnel and resources

Special Considerations:
- We can deploy an Advance Party to a incident scene within 90 minutes of alert by the MT National Guard Joint Operations Center
- Our primary means of deployment is via ground transport…our ability to quickly arrive on scene is limited by the driving time to your location
- Our support does not cost any $$$
- We are always available to conduct training at your location at no cost. We will tailor training to fit your needs. To schedule training with the 83rd CST, please contact (406) 324-3680 (office)

State of Montana Hazardous Materials Response Teams
There are 6 hazardous materials regional response teams. To request a hazardous materials regional response team, contact State of Montana, DES at **406-324-4777** and ask for the Duty Officer to contact you.

Emergency Response Guidebook Notes (ERG)

Following are ERG guides for **8** common hazardous materials released in Montana

Unknown Material / Mixed Load   NAERG Guide 111

SCBA mandatory.
Fire isolate ½ mile.
DECON: Use water, 10 gpm for 20 minutes, remove clothing

LPG – PROPANE   NAERG Guide 115   Placard: 1075
Gases-Flammable
Initial Isolation 160 to 330 feet. **Tank fire isolate** 1 mile.
DECON: Move to fresh air.

Chemical / physical properties	Behavior
Vapor density = 2.0 (Air =1); M.W. = 44	Gas will collect in low areas.
B.P. = -44 F	Gas at normal Montana temps.
Vapor Pressure = 107 psi (190 mm Hg)	Pressure in container liquefies the gas, release will create a vapor cloud.
Explosive range 2.1 % - 9.5 %	Vapors are highly flammable.
Auto ignition temp. = 761 F	Static electrical arc and vehicles are ignition sources.
IDLH = 2100 PPM or 10 % of LEL	SCBA mandatory.
Warmer, windy weather is better.	Helps disperse vapors.
Colder, calmer weather, not so good.	Vapor cloud stays more concentrated, greater risk of health or explosion hazard.

MTH – Natural Gas
NAERG Guide 115   Placard: 1971
Gases-Flammable

Initial Isolation 160 to 330 feet. **Tank fire isolate** 1 mile. **DECON**: Move to fresh air.

Chemical / physical properties	Behavior
Vapor density = 0.55 (Air =1); M.W. = 16.04	Gas will collect in elevated areas
B.P. = -258 ºF	Gas at normal Montana temps.
Vapor Pressure = N/A if found in piping supply	Generally shipped as gas in distribution and delivery pipelines.
Explosive range 5 % - 15 %	Vapors are highly flammable.
Auto ignition temp. = 1004ºF	Static electrical arc and vehicles are ignition sources.
IDLH = None Listed	SCBA mandatory. gas is an asphyxiant
Warmer, windy weather is better.	Helps disperse vapors.
Colder, calmer weather, not so good.	Vapor cloud stays more concentrated, greater risk of health or explosion hazard.

GASOLINE
NAERG Guide 128,   Placard 1203

Flammable liquid
Initial Isolation 330 to 660 feet. **Tank fire isolate** 1 mile.
DECON: Use water, 10gpm for 20 minutes, remove clothing.

Reportable Quantity = 25 gallons.

Chemical and physical properties	Behavior
Vapor density > 1 (Air =1); M.W. about 72	Vapors will collect in low areas
Flash point = -45 F, Vapor pressure = 300 mm Hg	Liberates flammable vapors at normal Montana temps.
Boiling point = 102 F	Liquid at normal Montana temps.
Specific Gravity = 0.7 (Water = 1) , not soluble in water.	Liquid will float on water.
Auto ignition temp. = 530 F	Vapors will ignite by any arc or spark
Vapors are a health hazard attacking CNS.	SCBA mandatory.
Warmer weather increases evaporation.	More flammable vapors being liberated.

ANHYDROUS AMMONIA
NAERG Guide 125, Placard 1005

Gases-Corrosive
Initial Isolation 330 to 660 feet. **Tank fire isolate** 1 mile.
DECON: Use water, 10gpm for 20 minutes, remove clothing.

Chemical / physical properties	Behavior
M.W. = 17 Gas will initially go to low places because it is cold, but as it warms up it will have a tendency to rise	
B.P. = -28 F	Gas at normal Montana temps.
V.P. = 129 psi	Liquified gas / container under pressure
Miscible	Mixes with water, corrosive run-off
Explosive range 15% to 28% May create explosive atmosphere when gas is confined. Should be treated as an explosive gas when released inside a structure or enclosed area.	
Auto Ignition Temerature = 1274 F	May find ignition source from arc, spark, or open flame.
IDLH = 300 ppm (0.003%)	SCBA mandatory
Warmer, windy weather is better.	Helps disperse vapors.
Colder, calmer weather, not so good.	Vapor cloud stays more concentrated, greater risk of health or explosion hazard.

SULFURIC ACID
NAERG GUIDE 137   Placard 1830

Corrosive-Water reactive
Initial isolation 160 to 330 feet**. Tank involved in fire**, isolate ½ mile.
DECON: Use water, 10gpm for 20 min., remove clothing, transport.

Chemical / physical properties	Behavior
Reactive with organics and water.	**Do not apply water, violent reactions and harmful vapors.**
S.G. = 1.84, Miscible	Heavier than water, but mixes with water.
Nonflammable	Won't burn, but can support combustion and may produce flammable gases (hydrogen).
V.P. = .001 mm Hg	Very minimal vapors in pure form. Readily forms vapors when it comes in contact with the environment, especially water.
Freezing Point about 37 F	Could freeze in winter time.
Temperature change in weather.	Not much effect.

CHLORINE
NAERG GUIDE 124, Placard 1017

Gas-Toxic and/or Corrosive - Oxidizing.
Initial Isolation for large spill 900 ft; downwind 4.2 miles (night).
Fire isolate ½ mile.
DECON: Use water, 10gpm for 20 min., remove clothing, transport.

Chemical / physical properties	Behavior
Vapor density = 2.67 , M.W. = 71	Gas is heavier than air, will collect in low places.
B.P. = -29 F	Gas at normal Montana temps.
V.P. = 100 psi	Liquified gas / container under pressure.
Nonflammable - strong oxidizer	Violent reaction with ammonia, acetylene, fuels.
Miscible	Mixes with water, toxic run-off.
IDLH = 10 ppm (.0001%)	SCBA mandatory.
Warmer, windy weather is better.	Helps disperse vapors.
Colder, calmer weather, not so good.	Vapor cloud stays more concentrated, greater risk of health or explosion hazard.

CARBON MONOXIDE
NAERG GUIDE 119, Placard 1016

Gases-flammable

Initial Isolation 330 to 660 ft. **Tank fire isolate** 1 mile
DECON: Move to fresh air.

Chemical / physical properties	Behavior
M.W. = 28 (Air = 29)	Vapors are buoyant in air.
B.P. = -313 F	Gas at Montana temps.
V.P. = 514 psi	Gas at high pressure in container.
Explosive range: 12.5% to 74%	Wide explosive range.
Auto ignition temp = 1166 F	May find ignition source from arc, spark, or open flame.
IDLH = 1200 ppm (.12%) colorless, odorless	SCBA mandatory, use monitor.
Warmer, windy weather is better.	**Helps disperse vapors.**
Colder, calmer weather, not so good.	**Vapor cloud stays more concentrated, greater risk of health or explosion hazard.**

NOTE*: Petroleum products spills and injuries were not calculate by Center of Disease Control because they were not hazardous chemicals according to their charter. Flammable gases and liquid (organic and hydrocarbon) were the most significant spills in Montana accounting for 56% of all spills reported in the state.*

Weapons of Mass Destruction

Bomb Threat Standoff

Threat Description	Explosives capacity (TNTequivalent)	Building Evacuation Distance[1]	Outdoor Evacuation Distance[2]
Pipe Bomb	5 lbs	70 FT	850 FT
Homicide Belt	10lbs.	90 FT	1,080 FT
Homicide Vest	20 lbs	110 FT	1,360 FT
Briefcase/Suit-case Bomb	50 lbs	150 FT	1,850 FT
Compact car	500 lbs	320 FT	1,500 FT
Sedan	1,000 lbs	400 FT	1,750 FT
Passenger/ cargo van	4,000 lbs	640 FT	2,750 FT
Small moving van(single)/delivery truck	10,000 lbs	860 FT	3,750 FT
Moving van (tandem)	30,000 lbs	1,240 FT	6,500 FT
Semi-trailer	60,000 lbs	1,570 FT	7,000 FT

Notes and sources: various sources, validated by Wizard Boy(McGinnis), Bomb Tech, Missoula Co. SO (ret.)

[1] Governed by ability of an un-strengthened building to withstand severe damage or collapse

[2] Governed by the greater of fragment throw distance or glass breakage/falling   glass hazard. Note that pipe and briefcase bombs assume cased charges which throw fragments farther than vehicle bombs.

WMD - Chemical

1) Stay Upwind, Uphill, and out of the product.
2) Isolate scene (80 to 160 ft) and deny entry.
3) Establish IC (size up, commo, crew tracking)
4) Use risk management plan
__ Savable life__ Savable property   __ Nothing to save
☐   Prepare for mass decon.
☐   Shut down HVAC systems, prevent air movement.
☐   Contact law enforcement. Connect with LE in-charge person
☐   Customer care (what can you do to help customer).

WMD - Chemical   NAERG Guide 153

SCBA mandatory.
DECON: Use water, 10 gpm for 20 min., remove clothing.

Chemical / physical properties	Behavior
Vapor Pressure and Vapor Density = most have low VP and large VD	Most do not give off significant vapors, but if they do, are much heavier than air.
Explosive range = ?	Most are not flammable.
IDLH = most are low.	Toxic, SCBA and skin protection mandatory.
Warmer, windy weather not so good.	Helps spread the agent.
Colder, calmer weather is better.	Will help reduce spread of agent.

Improvised Chemical Devices (ICD)

Nomenclature	Probability Pathology	Evidence	Initial Incident Actions
Local hazardous materials sites used against community	MINOR: Weapons grade warfare agents have not been employed to date.	Any container that has been breached with out cause.	Follow ERG safety protocol. Stay upwind and uphill of incident ERG GP 153
Small explosive device or charge designed to breach containers at fixed site facility	MODERATE: Improvised devices could be used by criminals & terrorists.	Any abandoned pressure and non-pressure container	PPE: SCBA and F/F turn-outs in the Cold Zone
Transportation containers with explosive device to contaminate community	Dispensing a hazardous chemical (ex. Chlorine) could be accomplished easily, chemicals can be stolen or acquired.	Any explosion that may have caused a spill or leak.	SCBA and Level B in the warm zone
Nonbulk containers left in a facility with Hazardous/Toxic chemical with timer	Understand the chemicals physical properties and environmental conditions to understand its effect on a targeted population.	Any container out of place	Before patient treatment DECON
Chemical weapon or dispensing device to atomize liquids	**People poisoning symptoms: SLUDGE** **S** salivation **L** lacrimation **U** urination **D** defecation **G** gastro intestinal distress **E** emesis	Events and venues that REPORT a release or odor	Remove outer garments leave under clothing
		Sick people inside a facility with rapid on-set of like symptoms	Complete wet DECON with water GOOD
			A Foam (CAFS) and H_2O rinse – BETTER
			Once patients have been DECONed, provide treatment NOT BEFORE!

WMD – Biological

1) Stay Upwind, Uphill, and out of the product.
2) Isolate scene (30 to 80 ft) and deny entry.
3) Establish IC (size up, commo, crew tracking)
4) Use risk management plan

__ Savable life__ Savable property   __ Nothing to save

☐   Prepare for mass decon.
☐   Shut down HVAC systems, prevent air movement.
☐   Contact law enforcement. Connect with LE in-charge person
☐   Customer care (what can you do to help customer).

WMD - Biological   **NAERG Guide 158**

SCBA mandatory.
DECON: Use water, 10 gpm for 20 min., remove clothing.

Chemical / physical properties	Behavior
Most are spores or in aerosol form.	Will move with air currents.
Explosive range = 0	Not flammable.
Infective dose = most are low.	Toxic, SCBA and skin protection mandatory.
Warmer, windy weather not so good.	Helps spread the agent.
Colder, calmer weather is better.	Will help reduce spread of agent.

WMD – Biological - Powders

(Unknown, small quan)

NAERG Guide 158

Use HEPA APR or SCBA
Decon - Wash hands, remove clothing, wash hands, take shower

Fire responder actions

1.   Isolate area

2.   Shut down HVAC or ventilation system in area of powder

3.   Establish appropriate decon based on degree of customer contact with powder

4.   Establish appropriate decon plan for responders based on degree of contact with powder

5.   Request response of and connect with in-charge LE person

Notes -

Improvised Biological Device (IBD)

Nomenclature:	Probability Pathology	Evidence	Initial Incident Actions
Biological contamination Bacterial, Toxin or Virus that must have a host to survive (except anthrax) Container may be herbicide sprayer, spray can, or some other device to spread agent	MINOR Biological agents are difficult to culture and most will not survive outside of a host. Sun light kills most viral and bacterial agents Inhalation and ingestion are the primary routes of exposure 1 to 7 days incubation Flue like symptoms progressively worsening People experiencing complaining of health problems @ powder calls are psychosomatic	Community has a number of unexplained illnesses as tracked by the community health agency RP may report white powder or suspicious container	Follow Community Health Agency recommendation ERG GP: 158 PPE: Universal Precautions for infectious disease control Not an emergency Reported white powders call Community Health Agency, take names, numbers and addresses ALL EMPLOYEES WASH HANDS. Infectious Disease Universal Practices Seek treatment if something comes up

Improvised Explosive Device (IED)

Nomenclature:	Probability Pathology	Evidence	Initial Incident Actions
Pipe-bombs to Rental trucks (Ammonium Nitrate and Fuel Oil) ANFO	SIGNFICANT: The WMD tool of choice (so far) for Terrorist Used in Oklahoma City and 1995 and 2001 in New York Mechanical injury and burns. There may be other WMD chemical or radiological devices Inhaling particulates from building collapse will have long-term health consequences.	Detonation and rubble pile Unexploded, any device in any shape. Usually metallic – car, plane or train.	DETONATION: Stay out of line of sight & take cover Rescue those outside of the collapse zone. Grab and go Patient treatment starts when out of the line of sight, outside of the collapse zone. PPE: SCBA and Turn-outs UNEXPLODED: Follow bomb threat stand-off on Page 45 or the MT mutual aid field guide

Improvised Biological Device (IBD)

Nomenclature:	Probability Pathology	Evidence	Initial Incident Actions
low level radiological source (industrial or medical equipment) with explosive device to disperse radiological material	MINIMAL: Materials are available and technology is low. However high level radiological sources are tightly controlled Alpha/Beta particles ingestion/inhalation primary route and is extremely hazardous Gamma photons passes through the body and is measured dose x time Radiation poisoning 50 REM blood count changes 100 REM Nausea and Fatigue WBC reduction	Reading on radiological meter greater then background 10 mr/hr considered action level Small explosion Radiological container with DOT markings	Approach uphill and upwind ERG GP 165 PPE: F/F Turn-outs Taking meter readings mark hot zone Walking patients DECON remove clothing any METER reading wash w/H_2O - GOOD A foam - BETTER

Amtrak Passenger Rail Operations

(Thanks to Charlie Cox, Amtrak Manager of Emergency Preparedness)

Two Amtrak passenger trains known as "The Empire Builder" travel through Montana each day proceeding both east and west bound. Utilizing BNSF Railway tracks they pass through communities along the "Hi Line" in Montana. Each train has the capacity for approximately 500 passengers, though passenger counts are often lower, passenger counts varies based on time of year. Additionally, during the course of the year it also possible to find smaller passenger operations being conducted by other railroads covering special occasions in their area.

Overview

Passenger Locomotives

Passenger locomotives utilize power-similar to their freight counterparts. Fuel capacities are in the range of 2,000-2,200 gallons of diesel fuel. The diesel power plant powers a generator that produces 600 volts of electricity that powers the propulsion motors mounted on the locomotive axles. As with freight locomotives the same risks are present with both high voltage and amperage generation. Passenger locomotives powerplants also deliver "Head –End-Power" (H.E.P.) also known as "Hotel Power" to the passenger cars for heat, light, air conditioning and related power requirements. This is delivered from the locomotives to each car by a "HEP" cable that is carrying 480 volts for the length of the train. Within each car this power is transformed into:

- ➢ 220/240volts to power Heating, Air conditioning and Stoves
- ➢ 110/120 volts to power lighting, doors and wall outlets
- ➢ 74 volts DC powers battery chargers for emergency lighting.

The controls for powering the "HEP" system are found in the cab of the lead locomotive, on the left hand or assistant engineer's side of the console. Like their freight counterparts, electrical fires should be fought utilizing dry chemical extinguishers after the fuel has been shut-off at one of at least 3 available locations.

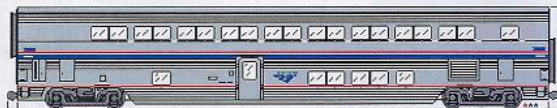# Empire Builder
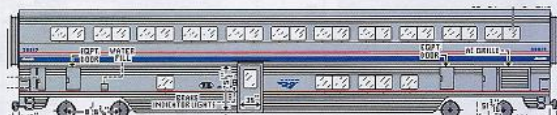## Train 7 and 8/27-28
Usual Consist

2 — P-42 Diesel Locomotives
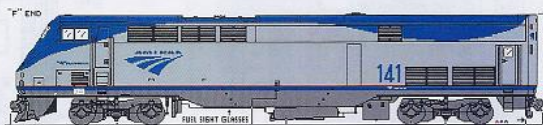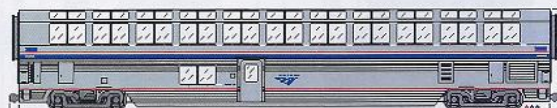
1— Baggage Car

1— Superliner Transdorm Sleeper
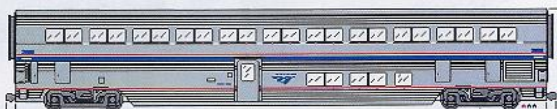
2— Superliner Sleepers

1— Superliner Diner

1— Superliner Lounge

1— Superliner Coach/Bag

3— Superliner Coachs

Amtrak Locomotive

Fiberglass Roof Stay Off

"F" END

141

FUEL SIGHT GLASSES

HEP Cable
Location

Fuel Shutoff
(Either Side & In Cab)

HEP Cable
Location
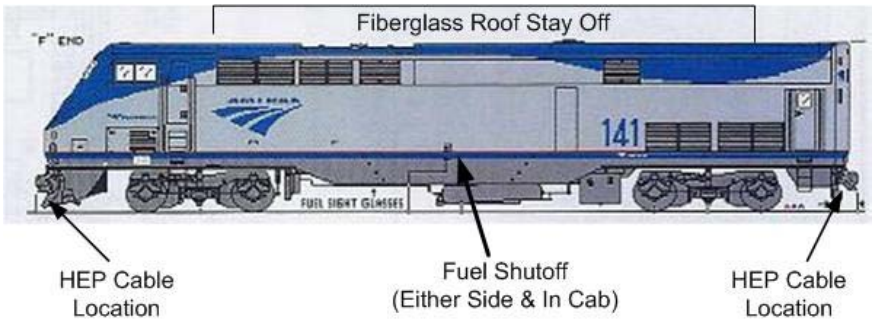
Amtrak Crew Staffing

Amtrak trains employ a variety of supervisory and service personnel:

Conductor – The conductor, is in charge of the train. They will be found in the passenger cars.

Assistant Conductor – Like the conductor they will be found in the passenger car area.

Engineer/Asst Engineer – The engineer and assistant engineer will be found in the operating area of the lead or first locomotive.

On-Board Service Crew (OBS)– OBS crews are responsible for guest services in each passenger car.

Emergency Response (Critical Factors)

When arriving at an emergency occurring on Amtrak equipment response personnel should:

- ☐ Seek out the conductor. He/She will serve as Amtrak's liaison to your Incident Command. They will have the most up to date information concerning the size of the train and number of passengers and employees.
  (Remember, trains stop often and people get on/off)
- ☐ From the conductor, determine the number of injuries and their location.
- ☐ Utilize the conductor for communications with each employee on board
- ☐ Utilize the conductor for communications with Amtrak headquarters and the host railroad operations center.

Emergency Operations

Due to crashworthiness requirements, passenger locomotives and cars are built to be resilient so as to protect the passengers. Points to consider:

- ☐ Fire/rescue extrication equipment will have limited effect in gaining access through carbodies and roofs.
- ☐ Interior egress can be quite confining and require other options for the removal of passenger. Therefore, responders should know the location and operation of designed access points, i.e. emergency windows.
- ☐ If the HEP is still employed the high voltage cabling will be found below the car floor level, do not approach cables until you are sure that the 480 volt H.E.P. has been shut down.

Car to Car – Passengers can be moved from one car to another through end doors.

On Superliner equipment (the predominate cars on the Empire Builder) this option is available **only** on the upper level.

Vestibule Doors

- • **Single level** cars may be equipped with vestibule doors that are located at one end or the other of the car. They may be equipped with a trap door that must be moved out of the way to access the integral steps.

- • **Superliner** cars have vestibule doors located on the lower level at the car mid-point. Access from the upper deck to the lower level is by a very narrow stairs.

Emergency Windows –A minimum of four (4) are found on each car. These are identified on the inside by a red pull handle and labeling. The handle will remove the window bead zipper strip. On the exterior of the car windows are identified by labeling and all that is required to remove the zipper strip is a screw driver. A ladder would be required to access the windows on the upper level from the ground. Window weights and sizes may vary.

Exterior of Car

Emergency Windows Labels

Interior of Car
Emergency Window Access Handle

Evacuation Decision Factors

With the assistance of the conductor a plan should be developed to determine what evacuation is necessary.

Consider:

- [ ] If safe to do so, leave locomotives running to provide heat, lighting and air conditioning.
- [ ] Evacuate passengers to other areas of the train that are stable. Consider is it safer to leave the passengers on the train or remove them to a safer location.
- [ ] Consider moving passengers that require evacuation to another car more suited to exit characteristics.

Bi-level equipment Passenger Removal Considerations:

- Use an extension ladder, position the tip at the window sill.
- Tie off the tip of the ladder to the base of the seat inside the car.
- Perform a ladder slide with the patient using a stokes basket, skid stretcher, backboard or half back device.
- If the patient requires a lowering system, use the seat base or opposite window frame for an anchor point for your system or a change of direction pulley.
- If there are several patients to remove, do not reset the system. When the initial patient is on the ground tie a new figure 8 on a bight and begin to lower the next patient.
- Ensure all edges are padded for protection of patient, personnel and rope.

Railroad Emergency Operations

Railroads operating in Montana

Emergency Phone Numbers
BNSF Railway Network Operations Center 1-800-832-5452
Amtrak National Operations Center 1-800-331-0008
Union Pacific Harriman Dispatch Center 1-888-877-7267
Montana Rail Link Dispatch Center1-800-498-4838
Watco (Mission Mtn Railroad, Yellowstone Valley) 1-208-421-4302
Dakota Missouri Valley & Western Railroad 1-800-891-6445
Central Montana Railroad 1-406-567-2573
Chemtrec 1-800-262-8200

Reporting Emergencies

- Contact the appropriate railroad dispatch center
- Identify yourself, your agency, the state, city and location
- State the nature of the emergency
- If available, give the railroad milepost, crossroad or DOT Crossing Number located at the nearest road crossing.

Operating Around/On Railroad Right of Way

- Notify the railroad through dispatch if you will be operating any closer than 30 feet to the railroad right of way.
- Provide a landmark closest to your location such as a road crossing, bridge or railroad milepost. All road crossings are equipped with a location specific identifier and emergency phone number.
- Through dispatch, provide the name and contact phone of the on-scene fire/rescue contact.
- Request a railroad employee respond to assist guidance, communications and safety.
- Expect rail traffic at any time. Post lookouts 2 miles on either side of the incident to "flag" any nearby rail traffic. The universal RR stop signal is an underhanded swinging motion using a flare, light or brightly colored flag.
- It takes the average freight train traveling at 55 mph more than a mile—the length of 18 football fields—to stop.
- Post an on-scene lookout at the incident scene.

- Never step on rail head, it is extremely slippery
- Do not stand or place hands within railroad switches. They can be operated remotely and will trap extremities.
- If possible do not walk within the rails. Utilize the outside of the ballast edge. Walking inside the rails contains trip hazards and ballast rock may be loose.
- Run hose lines under rails to prevent hose laceration.

Arrival at Railroad Emergencies

- Seek out the conductor; they are in charge of the train. Trains generally operate with only an engineer and conductor. There may also be additional employees on-board to perform work.
- Determine risks. I.e. injuries, car damage, hazardous materials, weather influence, resource needs.
- Determine isolation zone based upon train consist information, placards, Emergency Response Guidebook, and/or consultation with shipper and railroad.
- Minimize climbing on rail equipment. If it is necessary, use equipment and areas intended for access and "Three Point Contact".
- Do not walk or stand on couplers.
- Stay clear of air hoses. They contain pressures up to 120 psi with high volumes.

Locomotives

Background Information
Locomotive**s** are found in a variety of sizes ranging in horsepower from 1000 to over 6,000 horsepower. Their weight likewise varies with some smaller units weighing in at 248,000 lbs while larger "Road Switchers" can weigh as much as 416,000 lbs. Modern freight locomotives are propelled by the locomotive diesel engine powering an alternator or generator, which in turn provides electrical power to drive axle equipped motors which in turn propel the locomotive and following train consist. To sustain the diesel engine**,** locomotives may contain anywhere from 600 gallons up to 5,**5**00 gallons of diesel fuel and with up to 500 gallons of lubricating oil and a similar amount of dyed cooling water.

Electrical Systems
Direct Current (DC) /Alternating Current (AC)
Locomotives operate with a variety of electrical systems. Low voltage DC power in the form of 36 volt batteries is connected in series to provide 72 volt high amperage current to start the locomotive. The diesel engine spins either an alternator or generator to power the traction motors. These units provide generally 600 volts of power with amperage in the 1200-1900 range.

(AC) Locomotives
AC locomotives employ basically contain the same power generating equipment as their DC counterparts. However, in order to maximize on power efficiency they employ AC traction motors. This requires that they be equipped with inverters, rectifiers and capacitors. This requires a power system approaching 3000 volts. These systems may take several hours to de-energize.

Emergencies Involving Locomotives

- ☐ Observe guidelines outlined "**Operating Around/On Railroad Right of Way"**
- ☐ Seek out the train crew**.**
- ☐ Determine if there are any injuries to crew members.
- ☐ Determine if the locomotive has been secured by the braking system.
- ☐ Determine if the fuel system has been shut down. This is a "Red" button located on either side of the locomotive adjacent to the fuel tank fill and in the cab on the back wall labeled "Engine Shutdown".
- ☐ Determine if the engine and power systems have been shutdown. This is found inside the cab, on the back wall and is marked "Battery Switch".

Locomotive Fires
Follow the above information and in addition:
- ☐ Do not climb aboard a locomotive involved in fire.
- ☐ Use Dry Chemical extinguishers to control fire in electrical equipment. Do not use water or foam in these areas.
- ☐ Use foam solution to control fuel fed fires on the ground.

4400 H.P. GE Locomotive

Fuel Shutoff

Batteries   Electrical Equipment
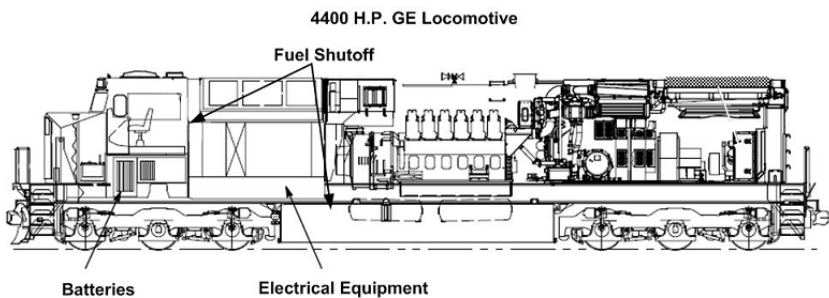
Drawing credit: General Electric Co.

Railcar Characteristics

Railcars are found in a variety of configurations. They **may** take the form of:

- ➤ **Boxcars** – Used for bulk but, generally package merchandise
- ➤ **Mechanical Refrigerated cars** –Used to transport perishables. They will be equipped with a diesel driven refrigeration system and employ their own fuel tank.
- ➤ **Non Pressure Tank Cars** – Liquids under pressures up to 100psi
- ➤ **Pressure Tank Cars** – Liquids and gases under pressures of 100-600psi
- ➤ **Cryogenic Tank Cars** – Super refrigerated liquid**s** and gases
- ➤ **Open Top Hoppers & Gondolas** – Used to ship coal, ores and other solid materials
- ➤ **Covered Hopper Cars** – Used to ship grain, fertilizer, plastic pellets and other bulk solids.
- ➤ **Flat Cars** – Used to ship intermodal equipment, machinery
- ➤ **Intermodal Double Stack Well Cars** – Used to ship intermodal containers and portable tanks.

Hazardous Materials

Rail transported hazardous materials can be encountered in a variety of rail transport cars and container configuration. In the event of a confirmed risk or leak best practice is to:

- ☐ Seek information from the on-board train crew
- ☐ If the crew is unavailable**,** contact the host railroad through their emergency phone number.
- ☐ Contact Chemtrec or the shipper.
- ☐ Conduct operations outlined in the ERG.
- ☐ Refer to the Hazardous Material Critical Factors found in the MMA FOG.
- ☐ Initiate contact with a Montana Regional Haz-Mat Team through your county's Office of Emergency Management.

Earthquake Intensity/Scales

Structural Engineering Notes

USAR Building Marking System

Windshield Survey

Collapse

Confined Space

Trench

USAR

Utah USAR Team Info

Base of Operations

Standard Earthquake Intensity Rating (LACoFD)

Standard Earthquake Intensity Rating (LACoFD)

Level 0 = Nothing felt
Level 1 = Earthquake felt, no damage
Level 2 = Items off shelves; windows broken
Level 3 = Block walls down
Level 4 = Structures off foundations
Level 5 = Structural collapse

Standard Site Survey

1. Move apparatus to safe location, generally outside
2. Contact dispatch on dispatch channel
3. Make site survey of personnel, equipment, and facilities
4. Report intensity, resource stat., site survey to Fire Coord
5. Secure utilities and station as needed

Standard Jurisdictional Survey

1. Intensity Level of 2 or greater, do jurisdictional survey
2. Record activity on unit log
3. Give report to Fire Coordinator or IC or In Charge person
   Status of high hazard occupancies
   Status of major transportation arteries
   Other significant information
   Determine resources needed
4. Only interrupt jurisdictional survey to respond to life
threatening incidents

Standard Risk Management Plan

☐ risk a lot → protect savable lives
☐ risk a little → protect savable property
☐ no risk → lives/property already lost

Structural Engineering Tips

- Buildings and building elements are built straight and plumb. As materials fail, they start to deflect. If a beam, floor, roof, truss is sagging during a fire or destructive event, there is a reason – stay clear, remain safe.
- Bridges are built straight and plumb. If it sags or is bouncy, stay clear, remain safe.
- Buildings are comprised of interlocking parts that are co-dependant for stability. A roof is supported on walls. However, the roof also supports the walls from tipping over.   If you lose a wall, don't go near that part of the roof. If you lose the roof, be prepared to either brace the walls, or not go near them. They may tip over.
- One critical concept to grasp is that of redundancy. Redundancy is defined as a structural element that is duplicated, for example a floor joist or roof rafter. If a redundant element is lost, the adjoining redundant elements may share the load, avoiding catastrophic failure.
- Vertical load bearing elements are either walls or columns. Neither item is considered redundant. If you lose a non-redundant element, catastrophic failure may occur. Don't lose a column!
- Steel beams and columns lose 50% of their strength at 1100º F.
- Steel beams can sag as low as 600 degrees F, which can compromise structural integrity.
- Concrete beams, columns, and walls lose strength at 600 degrees F and a significant portion of their strength at 1000 degrees F.
- On average, a building is designed using a safety factor of 2:1. The building was designed assuming full strength of all members, and under ideal conditions. No building was meant to be on fire, nor was it designed for that condition! If you are on a fire, not only have all safety factors been eliminated, but the fire has cut into the structural support. Don't count on a non-existent safety factor. You are at a structure for a reason – it is on fire.
Matt Anderson, PE, M.S. structural engineering
Compass Consulting Engineers 406-546-8379

Earthquake Scales

Moment Magnitude	Richter Magnitude	Mercalli Intensity	Description
1.0 – 3.0	2	I	Usually not felt, detected by Instruments
3.0	2	II	Felt by few, especially on upper floors of buildings, detected by instruments
3.9	3	III	Felt noticeably indoors, vibration like a passing vehicle, cars may rock.
4.0	…	IV	Felt indoors by many, outdoors by few, dish's and doors disturbed, like heavy truck nearby, walls-cracking sound
4.9	4	V	Felt by most people, slight damage; some dishes and windows broken, some cracked plaster, trees disturbed
5.0	5	VI	Felt by all, many frightened and run outdoors, damage minor to moderate
5.9	5 to 6	VII	Everyone running outdoors, much damage to poor design buildings, some chimneys broken, noticed by people driving cars
6.0	6	VIII	Everyone runs outdoors, damage is moderate to major. Damage minor in well designed structures, major

			in poor designs; chimneys, columns, and walls fall, heavy furniture turned, well water changes; sand and mud ejected
6.9	7	IX	Major damage in all structures, ground cracked, pipes broken, shift foundation
7.0 +	7 & 8	X	Major damage most masonry & frame structures destroyed, ground badly cracked, landslides, water sloshed over river banks, rails bent.
	8	XI	Almost all masonry structures destroyed, bridges fall, big fissures in ground, land slumps, rails bent greatly
	8 & above	XII	Total destruction. Ground surface waves seen, objects thrown up into air. All construction destroyed

Notes:

Richter Magnitudes (ML) are based on the movement of an instrument needle and increase logarithmically, 10 times for each number jump, so ML 8 is not twice as large as ML 4, it is 10,000 times as large! Richter Magnitude is an open-ended scale.

Moment Magnitude (MW) is the modern version of the Richter Magnitudes. Moment Magnitude is based on the energy released by an earthquake and is also logarithmic, but by a factor of 32, not 10. MW 4 releases 65,000,000 btu while MW8 releases 69,000,000,000,000 btu. The largest Moment Magnitude recorded to date was 9.5 and occurred in Chile on 05/22/1960.
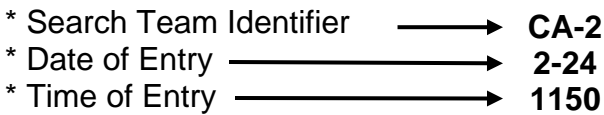
Mercalli Intensity (MM) is based on actual observations of the resulting damage, and therefore can not be measured on instruments.
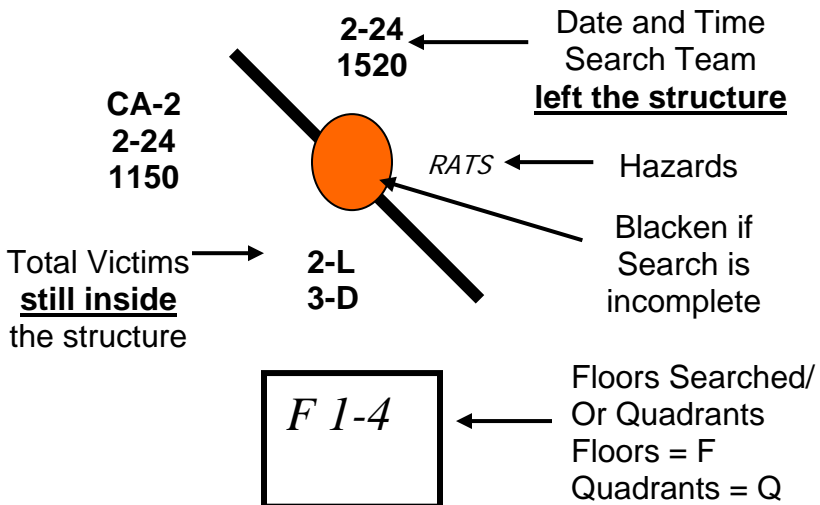
Search Markings

Utilizing the Standard USAR Decal

Main Entrance Search Marking
WHEN YOU ENTER

* Search Team Identifier ⟶	**CA-2**
* Date of Entry ⟶	**2-24**
* Time of Entry ⟶	**1150**

Main Entrance Search Marking
WHEN YOU EXIT – INCOMPLETE SEARCH/NO ENTRY

2-24
1520 ← Date and Time Search Team **left the structure**

CA-2
2-24
1150

RATS ← Hazards

Blacken if Search is incomplete

Total Victims ⟶ **2-L**
still inside **3-D**
the structure

F 1-4 ← Floors Searched/ Or Quadrants
Floors = F
Quadrants = Q

89

SEARCH MARKINGS (continued)

Main Entrance Search Marking
WHEN YOU EXIT- COMISLETED SEARCH

2-24
1520 ← Date and Time
Search Team
left the structure

CA-2
2-24
1150

RATS ← Hazards

2-L
3-D

Total Victims
still inside
the structure

F 1-4 ← Floors Searched/
Or Quadrants
Floors = F
Quadrants = Q

Date of Exit

Time of Exit

Task Force

Date of Entry

Hazards

Time of Entry

-L

-D
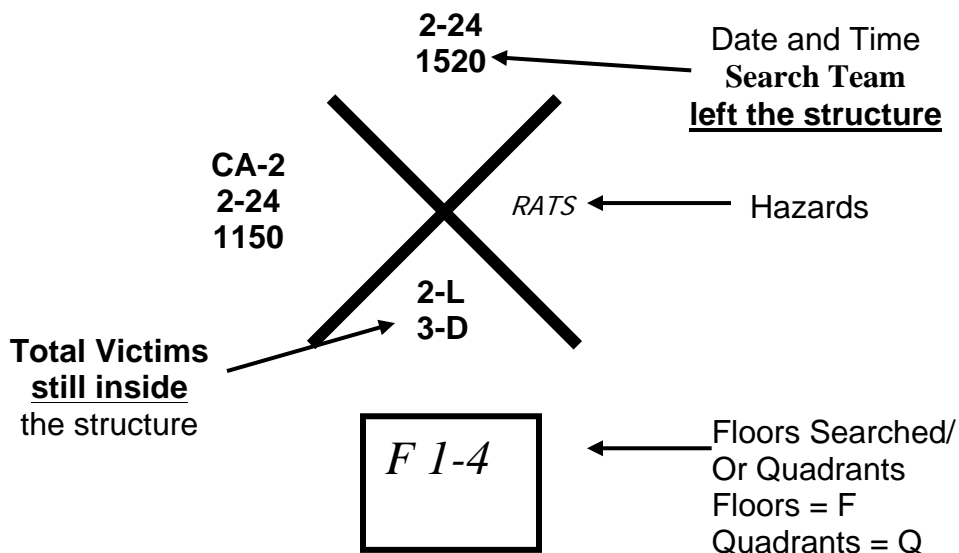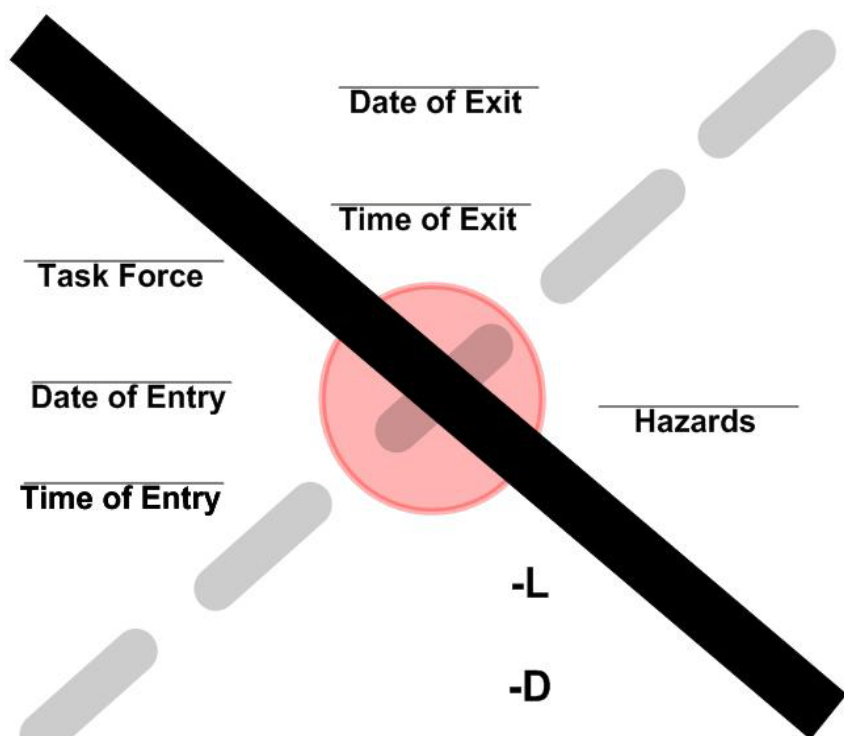
Address:

Areas searched if incomplete

****
SEARCH
MARKING
LEGEND
****

Incomplete Search/No Entry

2-24
1520

Co-1
2-24
1150

RATS

2-L
3-D

Completed Search

2-24
1520

Co-1
2-24
1150

RATS

2-L
3-D

USAR – Building Marking System

(US Army Corps of Engineers)

US&R STRUCTURE SPECIALIST FOG
ENGINEERING REFERENCE

BUILDING MARKING SYSTEM

GENERAL:
A uniform building marking system has been developed by the National US&R Response System.

There are 4 categories of structural markings:

- Identification Marking
- Structure/ Hazards Evaluation Marking
- Victim Location Marking
- Search Assessment Marking

The building marking system was established to ensure:
- Differentiation of structures within a geographic area
- Communicate the structural condition and status of
- US&R operations within the structure

Identification markings on structures should be made with International Orange spray paint and placed on the building surface.

Identification markings should be placed on the normal address side of the structure.

If at all possible, the existing street name and building number will be used. If some previously existing numbers are obliterated, an attempt should be made to reestablish the numbering system based on nearby structures.
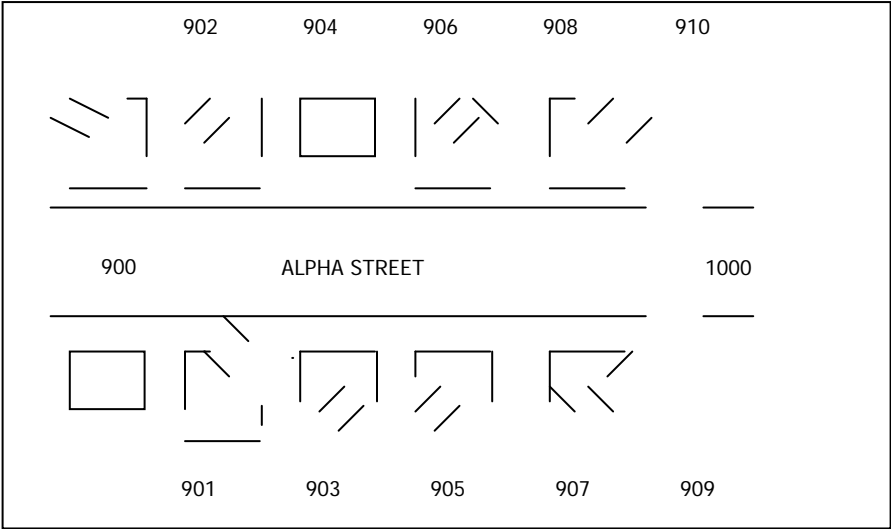
If no numbers are identifiable on the given block, then US&R personnel will identify the street name and number based on other structures in proximity to the site and the structures will be assigned appropriate numbers to differentiate them.

BUILDING MARKING SYSTEM (cont)
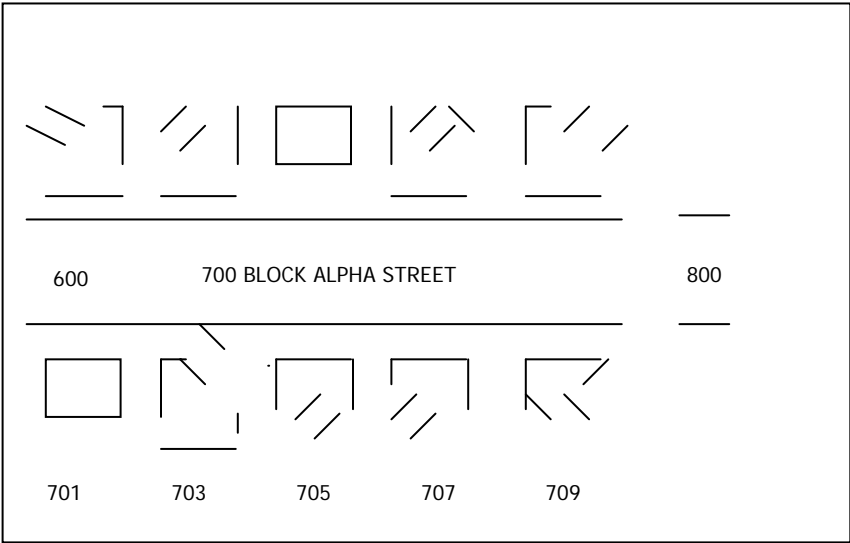
Identification Marking

600   700 BLOCK ALPHA STREET   800

701 703 705 707 709

BUILDING MARKING SYSTEM (cont)

Identification Marking

It may be necessary to identify locations within a structure, and refer to locations within a single structure. The **ADDRESS SIDE** of a structure will be referred to as **SIDE ALPHA.** Other sides of the structure will be assigned numerically in a clockwise direction from Side ALPHA.
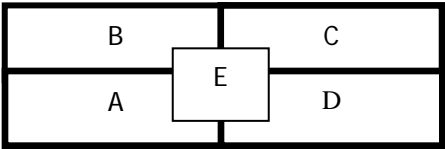
SIDE CHARLIE

SIDE BRAVO   **SIDE DELTA**

SIDE ALPHA
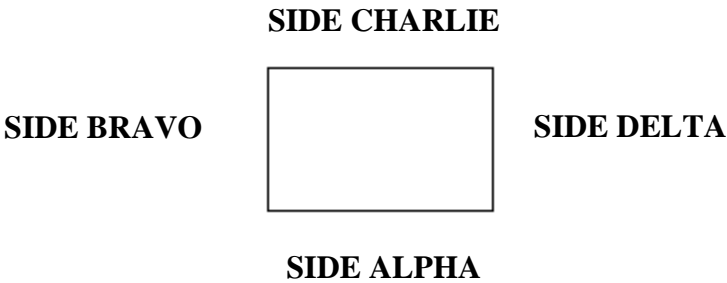
700 BLOCK ALPHA STREET

Building Quadrants

The interior of the structure will be divided into **QUADRANTS.** Quadrants will be identified **ALPHABETICALLY** in a clockwise manner starting from where the side 1 and side 2 perimeter meet. The center core will be identified a QUADRANT E.

B		C
	E	
A		D

ENGINEERING REFERENCE

BUILDING MARKING SYSTEM (cont)

Identification Marking

Multi-Story buildings must have each floor clearly identified. If the floors are not clearly discernible, they will be numbered as referenced from the exterior. The grade level floor will be designated as Floor 1 and, moving upward the second floor would be Floor 2.

Conversely the first floor below grade level would be B-1, the second B-2, etc.

In the event that structural columns require identification, use the existing column grid identification numbering system from the structural plans if at all possible. In the event that the plans are not available use the structural column grid shown below. Mark columns with 2 ft high orange/red letters/numbers. In multi-story buildings, some columns should be with the story level just below the column mark.

(mark thus: FL-2 for 2nd floor)

D	☐	☐	☐	☐	☐
C	☐	☐	☐	☐	☐
B	☐	☐	☐	☐	☐
A	☐	☐	☐	☐	☐
	1	2	3	4	5

Windshield Survey

First Step - Pre-Event

(by Capt. Ed Burlingame, Fairfax Co. F&R(ret.), Blankenship FD, MT FSTS)

How

- Divide the potential affected area into pre-designated divisions.
- Establish travel routes that quickly cover as much ground as possible.
- Establish priority structures.
- Select a division command and staging area.

Pre-Event Risk Assessment

Locate and Survey Structures that are important for health, safety, shelter and continuity of services.

- Fire & Police Stations
- Medical Facilities
- Assisted living facilities
- Schools and public buildings
- Churches
- Utilities – Power, water, sewer, gas
- Roads, bridges, culverts
- Dams, ponds, impoundments
- Private structures

Pitfalls & Hazards

- Have the survey for your assigned division ready prior to arrival in the area.
- Avoid stopping to render assistance, keep moving to get the big picture.
- Be objective and cautious of early overstatement or understatement of damages.
- Keep personnel safety in the forefront.

Windshield Survey

Date _____ Time _____	Unit	Route □ □ □
Road/Highway/Bridge Assessment	□ **Blocked/Trees Down** □ **Flooded** □ **Clear Accessible** □ **Other** _____ **Location** _____ Needs _____	
Damage Assessment	□ **Fire** □ **Trees Down** □ **Structure Collapse** □ **Roof Damage** □ **Flooded** □ **Snow** □ **Power Lines** □ **Electric Out** □ **Water Out** □**Sewers Out** □ **Other Needs** _____	
Victim Assessment	□ **Uninjured/Displaced #** _____ □ **Fatalities** □ **Injuries #** _____ **Immed** ___ **Delayed** ___ **Minor** _____ □ **Other** _____ _____	
Specific Occupancy Assessment	□ **Hospital** □ **Nursing Home** □ **Public Assembly** □ **School** □ **Comm Office** □ **Comm Retail** □ **Electric** □ **Gas** □ **Water** □ **Sewer** □ **Apt** □ **Townhome/Condo** □ **Single Family** **Target Hazard #** _____ **Code Color** _____ **Name/Address** _____ **Needs** _____	

Collapse Incident Response

Tactical considerations for the First Responder - Operations Level

1) Stay away from damaged buildings.

2) Primary assessment
- ❑ Secure witnesses or responsible person.
- ❑ Determine location, number and conditions of patients/victims
- ❑ Determine intact access to patients, possibility to improve.
- ❑ Is there a way out for responders?
- ❑ Can you make more?
- ❑ Determine location and number of buildings involved.

3) Secondary assessment
- ❑ Type of building
- ❑ Building construction type
- ❑ Assess hazards - secondary collapse, gas, electric, water.
- ❑ Assess needs for additional personnel – (search dogs, ARC, structural engineer)
- ❑ Assess need for additional equipment – (100 ton cranes, heavy equipment)
- ❑ Assess transportation conditions – (establish transportation corridor)

4) Subdivide incident organization

- Safety
- Building Triage
- Search
- Accountability
- Extrication(tech rescue)
- Medical - MCI Plan

- Air Ops
- Hazmat
  (FRO or Tech)
- Staging
- Information
- LE Liason
- PIO

Collapse Incident Response

1) Rescue Operations
- Remove surface patients
- Make general area safe(traffic, etc)
- Make rescue area safe - secure utilities
- Establish perimeter - deny access
- Establish transportation corridor
- Establish Treatment & Transport areas and morgue – pt. accountability
- Remove non-essentials from rescue area
- Establish building triage teams
- Establish planning process for building search teams and rescue teams
- Transfer patients to treatment
- Selective debris removal to support FRO rescues

2) Action plan for specific building

- ❑ Determine structure type
- ❑ Interview neighbors, survivors to determine how many potential victims and points last seen.
- ❑ Obtain building plan or draw crude plan
- ❑ Probable location of voids
- ❑ Best access
- ❑ Multiple, hardened exits for responders
- ❑ Basements
- ❑ Move info to supervisor and to Planning function

3) Use call out - listen search techniques

Confined Space Incident Response

Confined Space - defined:

1. Large enough to physically enter
2. Not designed for continuous employee occupancy
3. Limited entry and egress

Permit Required Confined Space - defined

1. Atmospheric Hazards
2. Configuration Hazards
3. Engulfment Hazards
4. Any other recognized hazard

Acceptable Entry Conditions:

Oxygen between 19.5% and 22.5%
Lower Explosive Limit(LEL)   <10% of the products LEL
Toxicity <IDLH

Monitor the atmosphere continuously.

Source document - OSHA 29 CFR 1910.146

Confined Space Incident Response

Tactical Considerations for the First Responder Operations Level

Phase 1 - Size-Up
Primary Assessment
- ❑ Secure witness or competent person_____
- ❑ Identify immediate hazards_____
- ❑ Location, number, condition of patients_____
- ❑ Secure entry permit

Secondary Assessment
- ❑ What type of space_____
- ❑ Products in space or last in space_____
- ❑ Hazards : atmospheric, mechanical, electrical
- ❑ Diagram of space
- ❑ Structural stability of space_____
- ❑ Required personnel and equipment at scene _____
- ❑ Additional resources necessary?_____
- ❑ Atmospheric monitoring: ventilation,
- ❑ Strategy - offensive(rescue) or defensive(recovery)

Phase 2 - Pre-entry Operations
- ❑ Initiate Fire Department Confined Space Rescue Permit
- ❑ Make General Area Safe
    Establish Perimeter
    Evacuate if necessary
    Traffic and crowd control
- ❑ Make Rescue Area Safe
    Establish/Affirm accountability
    Secure hazards - lock-out, tag-out

Trench Incident Response

Trench defined:

- Any trench 4 deep or greater must have a means of egress within 25 feet of any worker.

- Any trench with a hazardous atmosphere or a potential hazardous atmosphere that is 4 feet deep or greater must be monitored prior to employee entry.

- An excavation 5 feet deep or greater must have an approved protective system to protect employees from cave-ins.

- Protective systems shall be placed from the top working down and removed from the bottom working up so as to protect the employee during construction or removal.

- Many FDs consider all soils to be "Type C" and protective systems and practices shall be used accordingly.

- Timber shoring should be designed by a registered engineer, licensed in Montana.

Source Document: OSHA 29 CFR 1926

Trench Incident Response

Phase 1 - Size up
<u>Primary Assessment</u>
- ❑ Secure witnesses or competent person_____
- ❑ Identify immediate hazards_____
- ❑ Location, number, condition of patients/victims _____

<u>Secondary Assessment</u>
- ❑ Trench collapse   Yes___, No_____
- ❑ Proper equipment and personnel on scene Yes__, No__
- ❑ Additional resources necessary ventilation, shoring, retrieval system

Phase 2 - Pre-Entry Operations
- ❑ Traffic control
- ❑ Crowd Control
- ❑ Heavy equipment shut down
- ❑ Establish zones -
  - Hot <50'
  - Warm > 50' and < 150'
  - Cold >150' out to 300'
- ❑ Make rescue area safe
- ❑ Establish accountability and lobby control
- ❑ Secure hazards - gas, electric, utilities
- ❑ Place ground pads
- ❑ De-water trench from outside trench
- ❑ Monitor atmosphere from outside trench
- ❑ Ventilate from outside trench

Phase 3 Rescue Operations
- ❑ Make trench lip safe
  - o Assess spoil pike
  - o Approach from ends
- ❑ Place/affirm ground pads

Hazard Zone Command – USAR Notes

General Notes:
Risk management model applies
Search and rescue of Patients (survivable) the objective
Divide area to be searched - assign sectors
Triage structures and likelihood of occupied/survivable (by patients) structures
Hasty - Primary - Secondary Searches by Sector
Load equipment for use - first needed is last loaded
Set up out side, clear area, well lit, outside collapse zone

Basic Approach -
Triage - Hasty - Primary – Secondary (accounting)
Secure site(s) - Deny access
Secure utilities
Survey site(s)
Search for surface patients first - Do the easy stuff first
All quite - Shout/whistle/horn and listen
Examine for voids
Assess Voids
Bore holes
Check haz-mat (meter)
Search cam - look, mirrors
Enlarge opening
Harden opening
Enter/access

Shore up
Move/remove debris
Extricate

Repeat
Shore up
Move/remove debris
Extricate

Hazard Zone Command – USAR Notes

Info at time of request for USAR - or ASAP – Info

USAR TFs would like to know when you request them:
Weather forecast and NWS/NOAA weather office and zone,
web address would be helpful, other reliable weather sources
for your area. Also road conditions reports.
Fuel - What is available locally, where is it, do hosts have
access to the fuel?
Food - What is available locally, what is it, do the hosts have
access to the food? How is food sanitation/storage?
Safety concerns - What are local hazards? What do they need to
bring to manage hazard/risk?
Commo plan – radio (especially initial contact, freqs, tones),
phone – land line, cell, sat, E-mail addresses Is email
functioning? What commo is working in local area?
Hospitals - Are local hospitals functioning? What is their level
of care? Level 1 trauma center? Level 2 trauma center? Don't
get hurt level trauma center?
Base of Operations (BoO) - Off load location and available help
- Fork lift(s)?
Contact person - to connect USAR TF with hosts – all numbers
and contact info including e-mail, meet location

Information to have ready for exchange and cross briefing upon the arrival of the USAR Team, an advance element of the USAR team, or the FEMA Incident Support Team(IST).

Hosts should be prepared to exchange the information listed below with the arriving USAR/IST leadership.
The sooner this info is exchanged, the sooner the USAR team can connect with the host responders and go to work.
This is initial briefing information from the National USAR Response System FOG.
Initial Briefing:
Provide copies of maps, pictures, plans, commo info, phone numbers, e-mail addresses, etc.
The current local incident management organization and reporting requirements
Physical location of the Incident Command Post (ICP)
Chain of Command and coordination contact information
Planning/Briefing meeting schedule and location (in MT, Strategy/Planning/Briefing)
Current Situation & Goals and Objectives– C.A.N. report
Operational Issues – consider commo, safety, risk mgmt, emergency signaling, evacuation signals and rally points
Local medical system issues
Communications issues
Transportation issues
Logistical support issues and ordering process
Hazard behavior, safety, health, and security issues
Media issues
Notes from Montana responders in addition to the above

Initial Briefing format:
Connect guest and hosts responders with similar roles .
Provide a place to meet and conduct the Initial Briefing.
The L&C County Fire Council, Gallatin County Fire Council
and Flathead County ICP trailers and Gallatin County Sheriff's
Command Vehicle(call sign "6-CV")are well suited.
Provide copies of maps and pictures. Multiple copies of maps
are very useful. Several large format display maps helps USAR
Plans folks. Many copies (50) of 8.5" x 11" or 11" x 17" street
maps with street names, addresses, North, and a scale are very
useful for the USAR Search and Rescue Teams.
Have folks available to help unload and set up the USAR
equipment. A fork lift is very useful for this process. As many
folks as you are able to arrange, probably not more than 30. A
fork lift is very useful.

As much as possible, connect similar roles and functions.
Line up the host person with the guest person. Same deal with
all functions.

Hazard Zone Command – USAR Notes

Initial Briefing Tactical Worksheet:
Fill out, hand off to assisting USAR leadership

☐ Provide copies of maps, pictures, plans, commo info, phone numbers, e-mail addresses, etc.
☐ The current local incident management organization and reporting requirements
☐ Physical location of the Incident Command Post(ICP) Chain of Command and coordination contact information Planning/Briefing(in MT, Strategy/Planning/Briefing) meeting schedule and location
☐ Current Situation & Goals and Objectives – C.A.N. report

Operational Issues – consider commo, safety, risk mgmt

Local medical system issues

Communications issues

Transportation issues

Logistical support issues and ordering process

Hazard behavior, safety, health, and security issues

Media issues

Utah Task Force 1 – Specific Notes

URBAN SEARCH & RESCUE TASK FORCE FACT SHEET
Task Force Name:

_____

COMPOSITION

• Tactical unit for search and rescue operations;
• Multi-disciplinary organization:
- Search element
- Medical element
- Rescue element
- Technical support element
- Command element;
• Totally self-sufficient for the first 72 hours of operation;
• Full equipment cache to support the Task Force's operations; and
• Supported by DHS/FEMA sponsored Incident Support Team.

CAPABILITIES

• Capable of round-the-clock search and rescue operations (two 12-hour shifts).
• Search operations:
- Physical
- Canine
- Electronic.

• Rescue operations in various types of structures:
- Wood frame
- Steel frame
- Unreinforced masonry
- Reinforced masonry

- Sophisticated medical treatment capabilities limited to:
    - Injured Task Force members; and
    - Initial treatment of victims encountered during operations.

- Technical support capabilities for Task Force operations:
    - Structural integrity assessments;
    - Liaison with heavy equipment/crane operators;
    - On and off site communication capabilities within Task Force, IST, and local jurisdiction; and
    - Hazardous materials assessments.

TASK FORCE SUPPORT REQUIREMENTS

Transportation
- Vehicles/aircraft needed for the movement of the Task Force and cache. We will usually bring our own, but their may be special needs;
- Medical transport required for extricated victims; and
- Evacuation required for any injured Task Force member.

Communications
- The Task Force's radios are set to frequency;
- It would be advantageous to provide the Task Force with a radio from the host jurisdiction;
- Reporting requirements need to be identified (how/when); and
- Secure communications with the medical transport and to member evacuation systems.

Initial strategic/tactical briefing
- If available, copies of past, current, and future Incident Action Plans should be provided;
- Strategic/tactical assignment clearly identified for the Task Force.
- Media considerations
- The local jurisdiction's Public Information Officer (PIO) should be identified; and

- The local jurisdiction's media procedures (info release, interviews, etc.) should be identified.
- Appropriate area maps, building plans, or other information should be provided.

TASK FORCE MISSION CAPABILITIES FACT SHEET

DHS/FEMA US&R Task Forces are capable of providing the following additional actions when dispatched to a disaster site:

US&R OPERATIONS

- Conduct physical search and rescue operations in damaged and collapsed structures;
- Provide emergency medical care to disaster response personnel;
- Provide emergency medical care to the injured;
- Reconnaissance duties – assess damage and needs and provide feedback to local, State, and Federal officials;
- Assess and shut off utilities to houses or buildings;
- Assess hazardous materials surveys and evaluations of affected areas;
- Conduct structural and hazard evaluations of government and municipal buildings needed for immediate occupancy to support disaster relief operations; and
- Assist in stabilizing damaged structures, including shoring and cribbing operations, on damaged buildings as required.

CITIZEN ASSISTANCE/OUTREACH

• Direct citizens to available response and recovery services such as medical, food, water, shelter, etc., once established;
• Distribute tarps, sheeting, and furring strips to occupants of damaged dwellings; and
• Assist homeowners and occupants in securing their property from the effects of weather, looters, etc

ASSISTANCE TO LOCAL EMERGENCY RESPONSE PERSONNEL

• Assist local emergency response personnel in coordination of their response efforts;
• Assist in the establishment of emergency communications links;
• Clear streets, highways, airports, and government support facilities of trees and debris.
• Mark and identify streets and buildings;
• Manage, direct, and train local volunteers and first responders in basic US&R operations; and
• Provide medical treatment information to local physicians on disaster-disaster-related injuries such as crush syndrome.

URBAN SEARCH & RESCUE TASK FORCE
MEDICAL TEAM FACT SHEET

Task Force Name:

_____

COMPOSITION
 Organization:
- Medical Manager(s) (emergency physicians); and
- Medical Specialists (Paramedic/RN-qualified);
- Totally self-sufficient for the first 72 hours of operation; and Full medical equipment cache to support the Medical Team's operations

CAPABILITIES/LIMITATIONS
• Designed to provide sophisticated (and possibly prolonged) pre-hospital and emergency medical care;
• Medical Team treatment priorities:

First – Treatment of Task Force members, including canine (and support personnel);

Second – Entrapped victims directly encountered by the Task Force; and
Third – Others as practical;
• It is not the intent of the Medical Team to be a freestanding medical resource at the disaster site;

- Capable of round-the-clock operations (two 12-hour shifts);
- Comprehensive medical equipment cache designed to support:
  - ✓ 10 critical cases
  - ✓ 15 moderate cases
  - ✓ 25 minor cases; and
- It is expected that Task Force "fixed asset" medical equipment (i.e., defibrillators, monitors, ventilators, etc.) will not leave the

  rescue site with any patients but will be maintained for the continued protection of the Task Force members.

MEDICAL TEAM SUPPORT REQUIREMENTS

Transportation
- Medical transport required for extricated victims; and
- Evacuation required for any injured Task Force member;

Communications
- Reporting requirements to the Incident Command Post; and
- Secure communications with the transport systems listed above;

Medical hand-off procedures for victims
- Type of triage tags being used;
- Exchange of assets (backboards, splints, etc.); and if necessary; procedures for handling deceased victims;

Designated local medical liaison for special medical needs
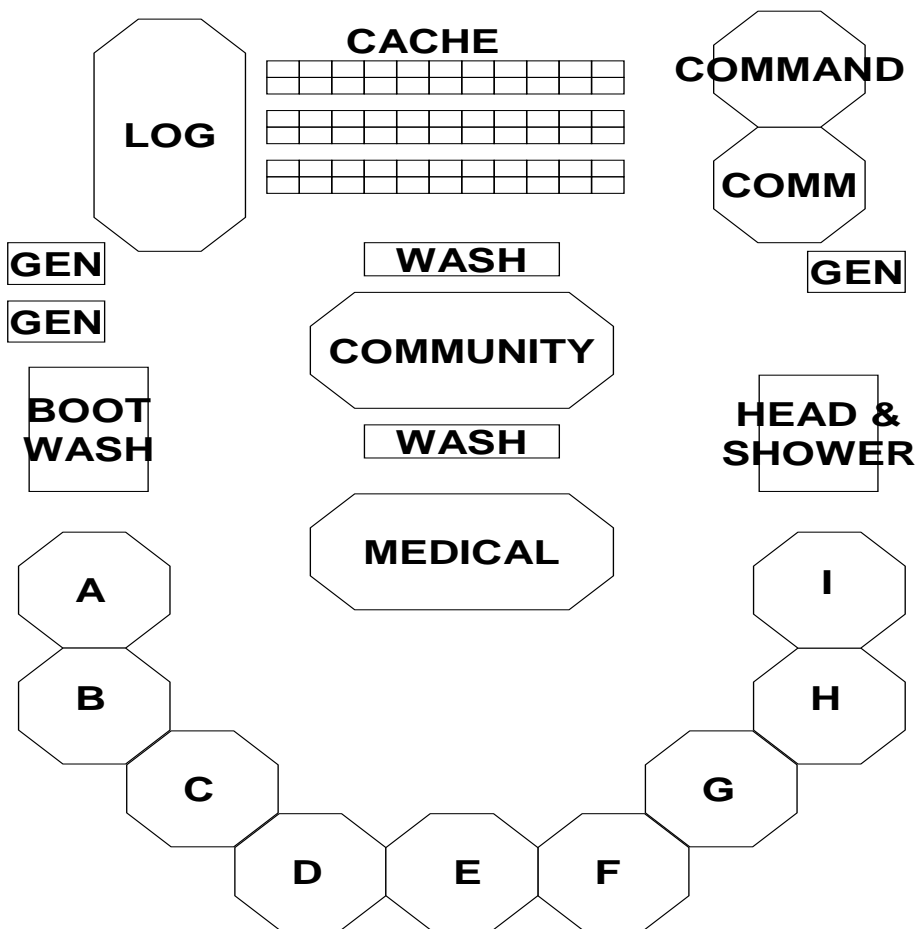(Emergency Medical Services (EMS) Medical Director or equivalent).

Base of Operations (BoO)

The selection of a BoO is one of the most important determinations made during a deployment. The specific location may be predetermined by the local jurisdiction or the IST prior to the arrival of the Task Force. In absence of the IST, the TFL must identify an appropriate site. Regardless of who makes the determination, the following factors should be considered:

• Proximity to the rescue work sites;
• Useable structures for shelter and cache set-up;
• Safety of useable, adjacent structures;
• Sufficient open, level space;
• Access to transportation routes;
• Safety and security;
• Tranquility (facility's quality to accommodate resting off-duty personnel); and Environmental considerations.
• Minimum size in Montana, UTTF 1 prefers about 2 acres, 400" by 200', prefers paved surface with water drainage. The USAR FOG suggests an area about150' x 110' area is minimum needed to set-up the BoO.

   Preferred size 400'x 200' (with a minimum of 150' x 150')

USAR Base of Operations Diagram

CACHE

LOG

COMMAND

COMM

GEN

GEN

WASH

COMMUNITY

GEN

BOOT WASH

WASH

HEAD & SHOWER

MEDICAL

A

B

C

D

E

F

G

H

I

Utah Task Force One Contact information

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2651 South 600 West
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Salt Lake City Fire Dispatch
Dispatch Center 801-799-4231
Fax 801-799-3684

Common Benchmarks, Tactics and Critical Factors for Wildland Urban Interface

Wildland Fire Behavior and Weather Interpretations

Structure Protection in the Interface - Triage Factors

Common Benchmarks & Tactics for Interface

1. **Fire Control and Primary All Clear**

Strategy and Tactics and Orders
Offensive when FFs are in LCES and the hazard is behaving.
Go defensive when FFs cannot do LCES or fire isn't behaving.

Evac Warn/Order	Defend Structure	Attack the Fire
LCES & predict FBx Accountability Deny Access	LCES & predict FBx Triage LCES by home Primary Search- Prep	LCES & predict FBx Pick fight favoring FFs Protect Exposures

To Do:

- ☐ **Establish On Deck**, forward deploy, brief, recon(TI), improve egress, establish Triage
- ☐ **Access & Egress** - open up new access & egress - in and out, mark routes
- ☐ **Check for extension**, all sides, spotting, downwind, upslope, burned/unburned line
- ☐ **Check for extension in exposures**-layers /voids/Loss Control(TI)

- ☐ **Supply water to pumper** (Offensive - lay in, or 1st tanker, direct connect)
- ☐ **Secondary Search/All Clear** - Occupant / Customer Accountability - Customer care
- ☐ **Rehab** - set up, connect w/EMS
- ☐ **Loss Control**
- ☐ **Assign -** ☐**Liaison** ☐**PIO** ☐**Customer Care**

2. **Loss Stopped**
☐ Loss Control- Clean up, cover up, store(w/SCBA)
☐ Check for extension(TI)

3. Incident Stabilized & Customer cared for
☐ Customer Care/Recovery Assistance to customer- **connect**

Local Incident Management in the Interface - Critical Factors for ICs in the Interface (2007-11-03)

Risk Management	Nothing savable - no risk to FFs - Protecting savable property - Risk a little - Protect savable lives - Risk a lot					
Critical Factor	**Discernable**	**Clearly present**	**Serious Hazard**	**Extremely Severe**	**Fatal**	**Unknown**
Safety Zones	Site specific, and Okay(for apparatus, for personnel)					Anything else
Lookouts	Can see hazard and FFs					Anything else
Communications	First call, immediate answer(within crew, adjoining crews, to supervisor)					Anything else
Escape Routes	Site specific, and Okay					Anything else
Slope	Fire at above top of slope		Flat		Mid slope, Fire below FFs, down slope	
Aspect	NNE	E	SE	S or SSW		
Wind	Calm		>10 mph	>20 mph	>30 mph (higher winds = extra SZ - defensible space)	
SAW Alignment	None(no two or more factors in alignment)		2 factors in alignment		3 factors in alignment	
Able to see FFs	Can see all FFs and fire		Can not see some FFs		Can not see FFs	
Spoting	None	Any	Some	More	Lots	
Fuel	None/Sparse		Grass		Canopy	
IC's Instict	Okay	Uneasy	Nervous	Stressed	Oh Shit	

Wildland Fire Behavior and Weather Interpretations

(Thanks to Eric Kurtz, Sonny Stiger, Tim Murphy and JP Harris)

Winds - **<u>Major factor in spread of fire, spotting</u>**.
Breeze - concern if fire is in light fuels (grass).
>15 mph - can cause fire in dry 1000hr fuels to run.

Aspect - The direction a slope faces. Major factor in intensity. South-West - lots of afternoon solar pre-heat, will burn hard& fast

Slope - The steeper the slope, the harder and faster a fire will burn.

Adjective Class - Overall index of fire danger.
☐ High, ☐Very High, or ☐Extreme are important.

Red Flag Warning, Fire Wx Watch, Front coming through, Severe Wx Warning
Big deal! winds >= 15mph, shifting winds.
Red Flag Warning - significant event, 4-6 hours out

Temperatures: Maximum at 85°F or above is noteworthy

1000 hr fuels - % Fuel Moisture in 3" and bigger fuels
12% or less is critical, % Fuel Moisture in fuels <1/4"(grass, brush) <7% is critical fire behavior indicator

Burning Index - Temps and winds – Rate of fire spread 60 + is noteworthy

Energy Release Component – How hot will the fuels burn? 50 + is noteworthy

Haines Index - Probability of extreme fire behavior 5 or 6 rating out of max. of 6 is critical

Relative Humidity - < or = to 20% is critical, MPB affected <20% (Sonny)

Humidity Recovery - Especially in light fuels(grass).
40% or less - Active burning, intensive patrol.

Safety Zone – MPB affected – 8X Flame Height
POI >= 60% (MPB stands)

Structure Protection in the Interface - Triage Factors

Positives

+ A structure on a ridge with the roadway or driveway on
   the opposite side from the approaching fire.

+ A structure with 100 feet or more of clearance and no ornament
vegetation
   near the weak points of the structure.

+ A structure where safety zones are obvious (large green areas or natural
   barriers).

+ Fire Approaching from a higher elevation than the structure you're
   protecting, with little or no wind.

+ A backing fire (fire burning against the wind toward your location).

+ A north or east aspect.
   Because of lower fuel temperatures, & higher fuel moisture
   Structures on these aspects are generally safer to protect
   provided wind speed is low (less than 15 mph)

+ An available source of water, such as a hydrant, private water tank,
   swimming pool, spa, or garden hose supply.
   We recommend connecting to a hydrant if one is available and you plan
   on staying.

Negatives:
- Any structure on a slope(mid-slope structure) with the fire approaching
   from below.

- A structure that is in a draw (the terrain in an in-turn), or in a saddle.

**Structure Protection - Interface –
Negative Triage Factors**

- A structure that is w/o defensible space, or in a saddle.

- A structure that will require locating your engine between the structure and the fire without adequate defensible space.

- A structure that has considerable vegetation (ornamental or native) impinging on it.

- A structure that has an LPG tank that is impacted or exposed with brush or other combustibles.

- A structure or road that has trees surrounding it, or branches entwined from tree to tree, giving the structure or road the appearance of being in a tunnel or cave.

- A steep slope below the structure.

- Heavy fuel below your location.

- A structure that looks like a junkyard with considerable flammable, easily ignitable material, such as old construction wood, piles of brush or leaves.

- A south, southwest, or west aspect(the direction the slope faces). These aspects are the most hazardous on which to defend a structure & will require additional defensible space.

- Time of day which should be considered as a unit with aspect. We highly recommend Campbell's Fire Prediction System class to improve your size-up or triage ability.

- Fuel type and height. Sagebrush will burn much faster than the heavier fuels, especially if they have   grasses as a component of their fuel bed. These are considered light, flashy fuels.

- No water source or limited water source.

Remember, don't bet crew member lives, or apparatus, on water supply or a hose line

- A wood-sided structure or one with a wood shingle roof

Notes:

These are a few of the many negatives and are just that. They're not red lights, but yellow lights. However, if you have numerous yellow lights, you might have to re-think. "Do the tactics still match the current conditions?" Re-evaluate your position, and reaffirm the location of safety zones - and the time and distance to reach them - for all members. After establishing LCES and making a fire behavior prediction use any available time to mitigate negatives, such as native or ornamental fuel, removing combustibles that would perform as a host for spot fires or spread.

Thanks to Battalion Chief John P.(JP) Harris, County of Los Angeles Fire Department (ret.) for writing this stuff down and sharing it.

Notes:

Hazard Zone Command

Standard Assignment for Recon

Standard Briefing by IC

Critical Factors for Larger Incidents

Command Helpers

Haz Zone Command 1 Hr ET Conversation

MMA Task Forces

MMA FD Transport Ambulances

Haz Zone Logistics and Finance

Unified Command

Media Guide

Public Call Centers

Standard Assignments for Recon – Situation Status

If Command will be sending out crews to learn about what is happening in an area, here's some standard considerations for that assignment.

Risk management plan based action
FFs may:
- ➢ risk a lot to protect a save-able life,
- ➢ risk a little to protect save-able property, or
- ➢ risk nothing to save lives or property already lost

Stay together - Company/TF-ST/Sectors -Division-Groups

Communication - first call, immediate answer (talk-in-up-sideways) / Don't deploy beyond your comm / Simple, to the point communications, use CAN reports

Trigger points - Hazard behavior - Withdrawal from hazard

Don't fishhook yourself or your company

Rally plan -- Decision points, locations, comm plan x 3, updated

Push information to Plans (up) - Push situation status-CAN reports

Do the situation status - triage - don't get sucked into it

Tell us what will be needed to resolve problems - solutions

Pre-plan what to do, when you don't know what to do

On-Deck crew(s) or RIC organic to TF-ST / Division-Groups

Tracking/Accountability – <u>Written</u> who, where, when, what

Reporting to/on what frequency - affirmed contact –
 Go only as far as your commo – commo is your ticket to ride

Standard Briefing – IC to Arriving Help

Your direct supervisor is _____ .

You directly supervise _____ .

Our customer is _____ .

Communications - first call, immediate answer (in-out-up-down-side)

"Mayday" Procedure – Fire fighter in any immediate life safety need

Area of operation _____ .

Adjacent forces _____ .

Staging _____ .

Base of operations _____ .

Affirm risk management plan, why

RISK A LOT, RISK A LITTLE, RISK NOTHING

Logistical support – how _____ .

What _____ .

Service interruption time line - push-pull _____ .

Rally plan – decision points, locations, comm plan x 3, updated

Check in – demob _____ .

Tracking(written - who, where, when, what) procedures

Map information _____ .

Escape routes _____ .

Safety zones _____ .

Thresholds/Decision points _____ .

Local issues - emerging, ongoing, historical, sensitive points

                                                    .

Planning cycle - strategy/planning/briefing/gather intel

Operations cycle –
When are you going to start working?   .

Stop working when?   .

Known local contacts in area of operation   .

                                                    .

Hazards in area of operation –
Known   .

Suspected   .

Historical hazard behavior prediction   .

Record personnel time, equipment time

Purchases - Incident name, print your name, Organization name, date & time

Notes:

Thoughts on Critical Factors for Large Incidents

Determination that something is a large incident, and that you will need mutual aid should flow directly out of the incident size-up.

Questions to ask yourself during size-up:

1. Is this (or will it soon be) geographically large?   Y   N
2. Is this gonna take more than 8 (?) hours?   Y   N
3. Is the weather an additional problem?   Y   N
4. Does this involve a technical specialty   Y   N
    (haz mat, tech rescue, etc)
5. Is this politically sensitive (ex: school, nursing home, etc)?   Y   N
6. Is there another political body that will have an interest? Y   N
7. Is there a probability/possibility that I will be overwhelmed?   Y   N

If the answer to any of these is yes, you need mutual aid. Move on to the following questions:

1. How much of what resource do I need?
    - Firefighting (geography, intensity of work)
    - Rescue (intensity of work)
    - EMS
    - Law Enforcement
    - Specialties
        i. Haz Mat
        ii. Tech Rescue
        iii. Large equipment
    - Strategic reserve

2. How much management help do I need?
    - Gee, I can't figure out the answer to #1
    - Geographical/functional divisions
    - Liaisons with other agencies or political bodies
    - PIO
    - Safety
    - Senior Advisor ((your name here) control)
    - Gee, I wish someone was managing the immediate operations while I figure all this out

3. Meeting management
   - Some place as quiet as possible
   - Everyone who needs to be there is there, but there are no extras (this is not a spectator sport
   - Whoever's conducting the meeting needs to be fierce about keeping it on track and only as long as possible
   - IC needs to listen to options, but then be decisive and end the discussion

4. Information dissemination
   - In writing if possible
   - Consistent message(s) to everyone
   - Deliver just once if possible to assemble everyone who needs to hear it
   - As simple as possible and still have enough detail to get the right work done
   - Confirm understanding

Thanks to Fire Chief Jane Ellis, Stevensville Fire(ret.)

Hazard Zone Command

Ed Burlingame (Flathead Co) – Plans, Logistics, Safety
Bob Burlingame – Commo, logistics, planning, safety, Haz Mat
Rich Cowger (Stillwater Co) – IC Support, Ops, PIO, Liaison, Safety, Plans
Brian Crandell (FSTS) IC Support, Ops, Safety, PIO, Liaison, Plans, Finance
John Culbertson (FSTS) – Command support, Haz Mat, other stuff, too.
Larry Detienne – Sheridan Co. - c 406-480-5350, dispatch 406-765-1200
Mike Doto (Silver Bow) – Logistics, Ground support
Bob Drake (L&C Co.) – Finance, Logistics, Plans, PIO
Jane Ellis (Rav Co) – IC Support, Finance, Plans, PIO, Liaison
Ross Fitzgerald (Power) – Logistics, Operations
Bob Fry (L & C Co.) – IC Support, IC Liaison, PIO, Ops, Plans, Safety
Britton Gray (YNP) – Structural IC Support, Ops, Safety, Plans
Kraig Hansen IC Support, Ops, Planning 945-3834
Steve Harada (Roosevelt Co) – IC Support, Operations, Safety
John P. Harris – 760-631-4329, 760-522-0298, will come to MT when asked,
can be in MT in 4-12 hrs, interface, structure protection
Jason Jarrett (Gall Co) – IC Support, SAR & LE Liaison, Operations,
Safety, PIO, Plans, Commo, AAGG
Craig Jepson – 406-498-5444, all around good guy
John Klippel IT support, c 253-7048
Tom Kuntz (Red Lodge) – IC Support, Liaison, PIO, Plans
Terry Larson – Logistics, Operations, Safety, Plans – Tech
Spec (heavy equipment, rigging), Haz Mat
Gary Mahugh(Flathead) IC Support, Ops, Planning Ops
Dave Maser (L&C Co) – Plans
Dave Mason (FSTS) – IC Support, Structural, Operations
Jim Mastin – Structural – IC Support, Ops, Water Supply
Sue Mergenthaler (L&C Co.) – IC Support, Finance, Logistics, Liaison
Victor Miller – Blaine Co. w 406-357-3250 h 406-353-2819 c 406-945-2310
Brian Nelson – Wibaux FD – IC Support, handy guy
Kevin Ore (L&C Co) – Safety, Ops, Interface – Structure Protection
Jerry Prete (FSTS) – IC Support, PIO Safety, Ops, go'fer
Ed Shindoll (Broadwater Co) – IC Support, Structural
Bruce Suenram (Rav. Co) – IC Support, Plans, PIO, Safety, GIS
Scott Waldron (West Yellowstone) – IC Support, Ops, Safety, Interface –
Structure Protection c#640-1033
Butch Weedon (Gore Hill, ret.) IC Support, Ops, Plans
Bill Wegner (L&C Co.) – Logistics, Operations
Doug Williams (Ft Benton) – Plans, Safety, PIO

Command Helpers 1 Hour ET Conversation Checklist

Standard Command Situation Status, Forecast, and Action Planning

1) What is the deal here?
What are the Conditions?, Actions?, Needs? (CAN)

What are the customer's needs?
> Who are they?
> What do they want?
> Who/what are they connected to?
> What/who is our Management Staff connection to customers?
> What is at risk?

What is the applied Risk Management profile at this incident?
Immediate/Intermediate/Long-term
What is our resource status?
> Fire fighters, MS? #, duration, later increments
> Other FDs
> Customer self help
> Customer - neighbors
> Customer - contractors
> Coverage plan for effected FDs
> Logistics indigenous/in the pipe line/available

Who has the jurisdictional responsibility for this incident?
Current Assumptions – Strategic (MS), tactical (crews)
Current Actions:
> Strategy, strategic goals, tactical objectives and tactics?
> Effectiveness? How to improve?
> Efficiency? How to improve?

Who are we connected to in relation to outcomes/hazards?
> (i.e. Northwest Energy, landowner)

2) What are three forecasts of outcomes?
   Related intervention options?
   Assumptions?
How do we get our neighbors (FDs) home?

How do we get home?
How do we get customer referred/handed off (NGOs)/stabilized?
Intervention options - Immediate/intermediate/long term
assumptions/impacts
What are our strategic goals and what are our strategy options?
What objectives can we affect?
Tactical requirements to complete objectives?
What resources do we have to work with?
Risk Management Profile for options from no intervention to
Maximum intervention
What is do-able (positive outcomes/influences) with what we have
available?
Is there a role for a responsible private individual (owner/contractor etc.)
in this incident?
Can we reach agreement with them about alternatives and preferred
alternative?
How effects FFs
How effects customers
How effects routine service delivery (us and neighbor FDs)
How are we living with a bad situation?
What is the highest value we can get for the time fire fighters are going to
spend here?

3)   Command Plan for Incident -
What are the challenge and verify time frames for this escalated incident?
Who will challenge and verify? When?
What is the command helper plan for this incident?
Have we conferred with every available management staff? Recently?
Fully informed?
Have we called (phone)/talked to every member to see how they can
contribute to the plan?
Is there a person responsible for this incident?
What is the standard logistics plan for this incident?
Drinking water? Sanitation? Food? Shelter?
Communications? Fuel? Transportation? Coverage? Relief? Rehab
(med)?
What is the sustainable water supply plan for the extended operations.

History of long duration:
Any event with ongoing operations at the 1 hour elapsed time mark.
USFS calls with a smoke/fire in the National Forest and asks for Help.
Hay stack fire / Buried slash pile/ Tire fires.
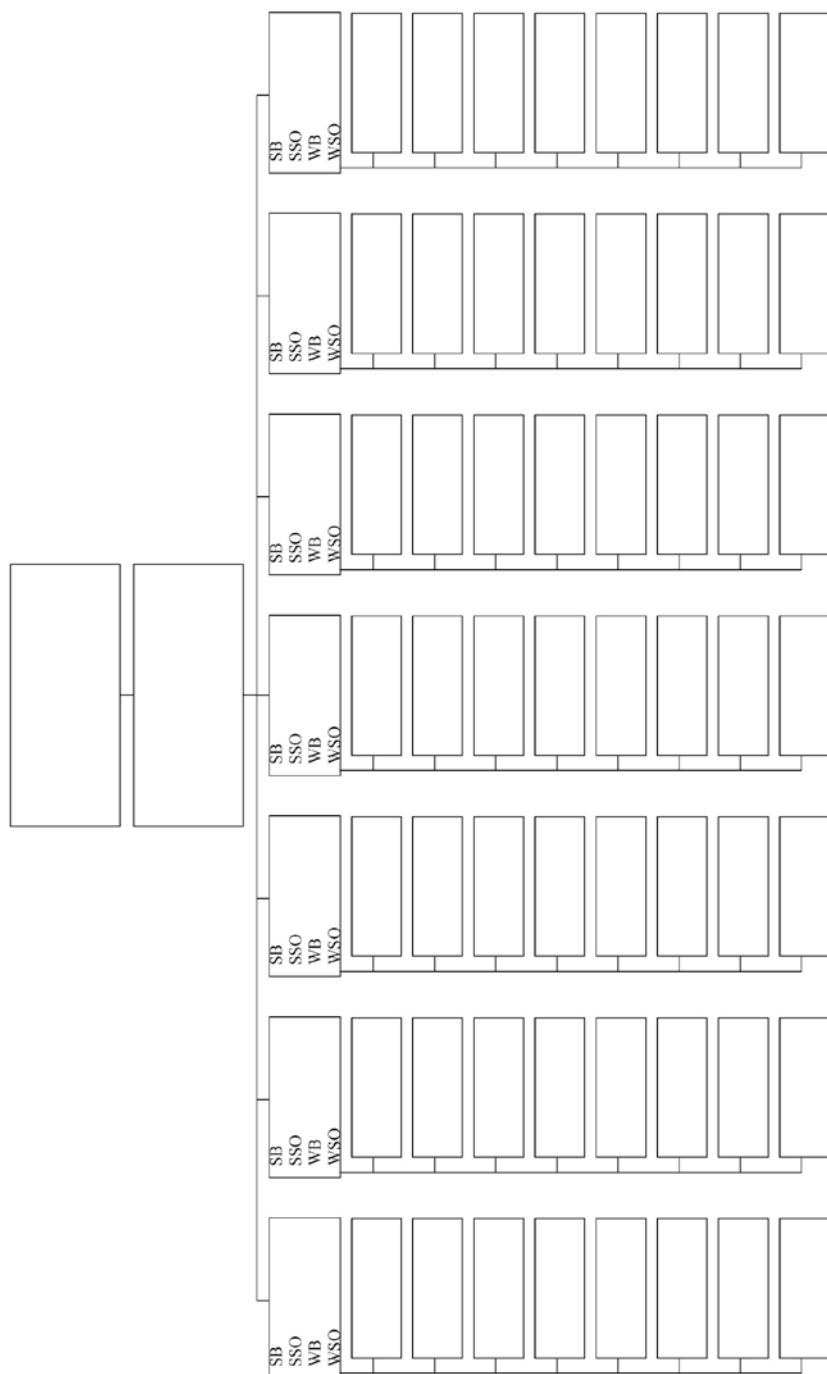House fires that don't respond to offensive operations within 20 minutes.
Response to a mutual aid extended/escalated operation.
Out of county dispatches (first crew back home at alarm time plus 12 hours)
Road blockage, serious, need heavy equipment.

Hazard – Behavior & Potential Prepared by:	Location	___/___/___ @ _____ Date Time
Hazard Location – Hazard Behavior & Current Location Hazard Zone Exposed Not Involved		
Weather – Wind-Direction/Speed Temp		
Risk Management Model – Firefighters may, in a calculated manner:		
Risk their lives a lot to protect a save-able life		
Risk their lives a little to protect save-able property		
Risk their loves at all to protect what is already lost		
Critical Factors: see MMA Blue Book for hazard specific critical factors People involved or exposed Weather – wind and temp		

Strategic Goals

☐ Responder operate safely

☐ Provide for the safety of involved and exposed members of the community

☐ Stabilize hazard, minimize spread of the hazard

☐ Limit impact of hazard

☐ Inform community & media about what is happening resulting from the incident

☐ Respond in a manner that is cost effective

☐

☐

Safety Notes – Who is assigned to Safety

Item	Location	Resolution
☐ Wear PPE	Incident wide	All properly worn
☐ Crews stay together	"	Stay with crew, look for boss
☐ Communication connection	"	Slow down to go faster, click it
☐ Driver slower– Seatbelts fastened	"	Awareness and barrier from
☐ Respect traffic		
☐		

☐ EMS Plan– Report medical emergencies to your supervisor as a "Mayday". Use EMS people in your crew to provide initial care, arrange transport (fly/drive)

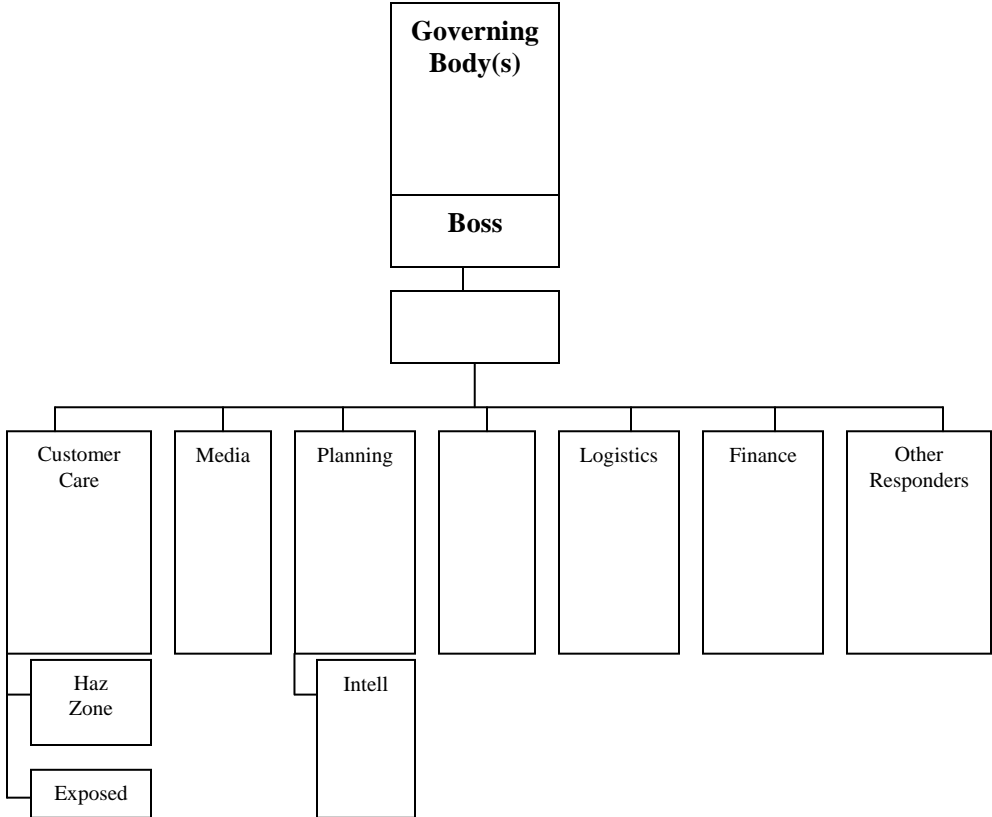# Organization, Staffing & Communications Plan

Setting around the event

Customer Care (Haz Zone Involved & Exposed) Contact Numbers & Email		
Reverse notification, AM		

Logistics		
Fuel		
Food & Drinking Water		
Porta-Potties, handwashing		
MMA		
Comm-Xtra Port, Rpts, AM		

Planning	Contact Numbers & Email	
Haz Behavior		
Intel		
GIS – maps		
Weather Service		

Finance	Contact Numbers & Email	
Admin		
Compliance		
Legal Information		

Responding Agencies	IC's Contact Numbers & Email	
LE		
Roads/Public Works		
Utilities		
Weather		
MDOT		
Engineering Community		

Governing Body(s)

Boss

Customer Care · Media · Planning · Logistics · Finance · Other Responders

Haz Zone · Intell · Exposed

Bosses	Contact Numbers & Email	

Governing Body(ies)/Elected Officials	Contact Numbers & Email	

Media	Contact Numbers & Email	
Reverse 911		
Tech – Twitter		

Customer Care	Contact Numbers & Email	
Family Care - Responders		

Task Forces available through Montana Mutual Aid

250 Fire Fighters

Lewis and Clark and Jefferson Counties Rescue Task Force
50 Fire Fighters and 6 Management Staff
Point of Contact: Lewis and Clark Co. Fire Coordinator (see page 4)   ask for "Maximum Rescue Deployment Mutual Aid Run Card"

Flathead County: 25 Firefighters and Command Staff
Call Flathead Dispatch 406-758-5610 and ask that they page: Gary Mahugh, Chief 2501

Gallatin and Park Counties Rescue Task Force
50 Fire Fighters and 12 Management Staff in 6 or more vehicle
Points of Contact: Call Gallatin County 911 Center at 406-582-2124 or 582-2100, ex 2 ask the dispatcher to page one of the following - Chief Todd Kitto, (Amsterdam Fire) or Chief Jason Revisky (Rae Sourdough FDs)

Hi Line Task Force: 25 Fire Fighters and Management Staff
Phillips County - Clark Kelly, h 654-1969, w 654-2087
Mike Flatt ,County Chief c 390-1646, w 673-3252, Phillips County Dispatch 654-1211
Malta Chief Bill Rock 654-1610
Blaine County - Kraig Hansen Fire Chief, 357-3691 or cell 945-3834
Valley County – Chris Knodel- 263-4179, dispatch 228-4333
Dan Carney Valley Co. Fire Warden 263-7301
Glasgow City- Chief Brandon Brunelle, 263-2726, 230-2472, 228-2141, 228-4333
Fort Peck – Chief Landon Holte 228-4333, cell 671-8578
Roosevelt Co Rural VFD - Fire Warden Steve Harada 650-2222, Shawn Eggar 523-3337 939-5769
St. Marie VFD – Robert Esaias Asst Chief 230-0054 cell Culbertson VFD-Alan Aspenlieder, Chief 790-0888 cell Bainville VFD-Lyle Lambert, Chief 769-7039

Cascade County and Points North Rescue Task Force
20 Fire Fighters and Management Staff
Points of Contact Manchester FD Leonard Lundby or Gore Hill FD Command Staff at Cascade Co 911 454-6879 or Joe Zahara

Stillwater and Carbon Counties Rescue Task Force
20 Fire Fighters and Management Staff
Rick Cowger (Columbus FD, 406-321-1180) @ Stillwater County 911 Center
406-322-5326 or Tom Kuntz(Red Lodge FD, 406-855-6198) @ Carbon County
911 Center @ 446-1234

Missoula Co - 15 Firefighters and Management Staff
Points of Contact: Joe Calnan (Frenchtown FD) Missoula Co Disp 406-258-
4760, c - 406-240-5759

Silver Bow County Rescue Task Force
15 Fire Fighters & Management Staff
Mike Doto, c 491-9368, Mike Leary @ BSB 911 #782-4224
Dave Kneebone, c 498-5312

Eastern Montana Rescue Task Force
40 Fire Fighters and Management Staff
Wolf Point, Shawn Eggar Chief c 939-5769 w 525-3337, Asst. Chief Allen
Richard 650-8660
Plentywood, Larry Detienne, Cell 480-5350, Randy Guenther Chief- Medicine
Lake c- 489-0399, Sheridan Co. Dispatch 765-1200
Glasgow City- Chief Brandon Brunelle, 263-2726, 230-2472, 228-2141, 228-
4333
Valley Co. Long Run, - Chris Knodel- 263-4179, dispatch 228-4333
Mobile cascade port air comp, generators, bottled water & 6000 gal. tender,
1000 gpm engine
McCone Co. /Circle VFD, Jess Beery Chief, 939-3318 c, 485-3313 h
West Glendive FD , Richie Crisafulli c 939-1650, Dawson Co. 911 – 377-2364
Sidney VFD & Richland Co Chief Larry Christensen c 489-4629, LEC 433-2919
Assistant Chief Rob Gilbert
Terry FD – Dwight Tague, c 951-6165, h 635-5702, 911 Center- 788-7101
Wibaux FD – Brian Nelson, c 701-218-0267 or 701-872-6648, h, 406-795-2605,
911 Center -795-2222
Baker FD - Randy Hoeke, c-978-3473, h 788-2566, w 778-2167, 911 Center -
778-7139
Glendive FD – George Lane, c 939-3340, 911 Center 377-2364
Broadus VFD – Raymond Ragsdale Chief 935-2242

Ravalli County - 5 engines, 25 firefighters and command staff
Rex Olsen c 550-0938, Jim Knapp Corvallis FD c 360-4371, Ravalli Co. 911 406-
363-3033, Fire Warden Charley Lamson 239-7384, Brad Mohn 360-4379

Montana Fire Department Based EMS Transport Resources

Carbon – Red Lodge
Stillwater - Columbus
Flathead – Whitefish, Evergreen, Olney, Kalispell, Marion, West Valley, Big Fork, Big Mountain
Gallatin – Big Sky Fire, Rae Sourdough(BLS), Three Forks Ambulance, West Yellowstone Fire
Lincoln – Fisher River

Notes:

Hazard Zone – Logistics Support

Stuff folks have that they will share - you call, they haul, that's all.
Drinking water – In the possession of the FD. .5 liter, or more per bottle, by case or pallet, note: it takes about ½ pallet of drinking water per day for a TF.
Eastgate F.D. (L& C Co.) 1 pallet, .5l bottles
West Yellowstone FD (Gallatin Co.) 1 pallet, .5l bottles
Valley Co. Long Run, bottled water
Rae Sourdough Fire, bottled water
SCBA compressor and fill station mobile trailers -
Ravalli County – Three Mile FD
Lewis Clark County – West Valley FD
Silver Bow County – Centerville FD
Gallatin County – multiple air cascades, no mobile compressors
Valley Co. Long Run – portable air compressor 6,000 gal tender, 1000 gpm engine
Motor Fuel – Mobile
Eastgate FD – 500 gallons/100 gallons fuel tender, fill to order
Rae Sourdough Fire – 100 gallons diesel fuel tender
Hand sanitizer (bulk or single towelettes)
Toilets – portable
Incident Command Post – mobile
Lewis and Clark County – trailer
Flathead County - trailer
Gallatin County – Trailer thru Gallatin County Fire
Gallatin County Sheriff – Command Vehicle ("6-CV"), truck mounted
Red Lodge – "The Bus"
Safety Equipment – PPE (gloves, N-95 mask, eye protection)
Hand tools – (sledge hammers, pry bars, shovels, buckets, claw hammers, wonderbars, Channel loc pliers, etc)
Generators and lights
Small Generators – Valley Co Long Run
Extension cords – 12/3 or better, 100'
Markers – permanent, dry erase, duct tape, spray paint, logging crayons
Barrier Tape – "Fire Line", "Hazard", etc.
Search Camera –
Flathead County thru Creston FD
Batteries - AAA, AA, C, D
Combustible Gas meters
Gallatin County FDs – at least 10
Mobile Cascade – Valley Co. Long Run

Rae Sourdough Fire – 8 x 6,000psi, fill station
Serious Service Truck
Vaughn FD – 180 gallons gas, 200 gallons Diesel fuel, welder, genset lights, tools, air impact wrench (big), torch, air compressor
Flat bed truck with piggy back fork lift
Vaughn FD – 20 ft flatbed, for moving palletized stuff
Mask wipes – Wolf Point FD
Class A foam – Wolf Point, Rae Sourdough Fire

Notes:

Critical Issues for Large Incident Finance

1. Will it be necessary to pay for more resources than the host district's budget can absorb?

   - Will the duration exceed MMA ability?
   - Will even basic logistics (food, fuel) exceed the local budget?
   - Are there specialized resources that can only be gotten by paying?

2. If yes to any of the above, then you need to find a financial partner. Notify all the appropriate local officials as soon as possible.

   - Fire District Trustees
   - City Council
   - County Commissioners
   - DES Coordinator – make sure they are making state level notifications if the incident will exceed all local resources collectively
   - District's Attorney
        Special Note: If the incident is haz mat, determine if there is a "responsible party". If there is, retain an attorney with special expertise in environmental law as soon as possible.

3. Do you need additional financial record keeping help?

   - Does the District already have a really handy financial person? Probably needs to be more than whoever pays the monthly bills.
   - Is record keeping assistance available from the County Auditor's office?
   - Can you find someone through MMA that can help guide financial record keeping?

4. Keep meticulous records of what is expended. You must be able to justify the reimbursement you will eventually be asking for.

- Personnel Info
    i. W-9
    ii. I-9
    iii. Timesheets and some indication of what they were doing

- Equipment Info
    i. Time used and purpose
    ii. Have a contract, or signed release
    iii. Be sure who owns the equipment
    iv. Be sure operator is covered by work comp
    v. Sole proprietor – if payment will be over $600, get soc sec #

- Activity logs and Incident Action Plans
- If you missed info early in the incident, get it captured as soon as possible. Don't wait until the end of the incident because no one will remember then.

5. Possible funding sources

- County 2-mil Disaster Levy
- State – Governor's Disaster Fund
- Federal – FEMA
- These all will pay for extraordinary costs: people and equipment not normally on the jurisdiction's payroll
- Haz Mat – Owner/shipper is responsible for "all necessary costs", which means you can recover regular time of regular employees, too. With a haz mat incident, be prepared for a long legal fight that will involve not only the responsible party, but their attorneys. This may create cash flow issues that will need to be shared with the County, and maybe the State.

6. Wildland Fires

- DNRC – Co-op program, County Assist
- FEMA fire grants
- Be careful about signing cost sharing agreements
- Be careful about agreeing to become part of unified command. Be clear about whether or not that means you're accepting a part of the financial consequences of <u>all</u> the command decisions that are made.

7. Get a Disaster Declaration in place as soon as possible

- Should be handled by the County DES Coordinator. You may need to answer questions for the County Commissioners before they will adopt it.
- If it's needed, get it in place early. Be sure it dates to the beginning of the incident. Most funding sources will not cover costs incurred before the date of the incident.

8. Be prepared to be audited, maybe several years later

- Keep complete file on the incident, including activity logs, time sheets, incident action plans, copies of invoices, claims, etc
- Do not try to work from your memory.

9. Be prepared for damage claims after the incident

- Do not deny claims out of hand. Being nice and listening to Mrs or Mr Smith may make the issue go away, or may minimize the cost.
- Having good activity logs will help establish whether or not the damage was actually caused by the incident.

Thanks to Fire Chief Jane Ellis, CPA, Stevensville Fire (ret.)

Hazard Zone Command – Unified Command

Example of a Unified Command procedure

Gallatin County Incident Management System
UNIFIED COMMAND

Purpose: An Incident Management System (IMS) is hereby adopted for the purpose of appointing officials from local government to be in charge of response and recovery operations for specified emergencies and disasters. The Gallatin County Incident Management System (GCIMS) is a system of systems, generally organized by jurisdiction or functional discipline. (Ex. Gallatin County Fire Council standard operating procedures)

Components of the IMS: The incident management system has a number of components. These components working together interactively provide the basis for an effective IMS concept of operation:

- Common terminology
- Modular organization
- Integrated communications
- Unified command structure
- Consolidated action plans
- Manageable span-of-control
- Predesignated incident facilities
- Comprehensive resource management

Unified Command: Unified Command is a system to address the operational needs of any given event. The role of the unified command participants is to create an integrated package to respond to those needs.

The need for a unified command structure is brought about because:

- Incidents have no regard for jurisdictional boundaries or functional disciplines. Virtually every response involves multiple functional disciplines and often multiple jurisdictions.

- Individual agency responsibility and authority is normally legally confined to a single jurisdiction and functional discipline.

The concept of unified command simply means that all agencies who have a jurisdictional responsibility or a functional discipline responsibility at a multi-jurisdictional incident contribute to the process of:

- Determining overall incident strategic goals
- Selection of strategies
- Insuring that joint planning for tactical activities will be accomplished.
- Insuring that integrated tactical operations are conducted Making maximum use of all assigned resources

Where there are multiple jurisdictions and/or functional disciplines operating on an event, every effort should be made to adopt standard operating procedures that address multiple agency interoperability. (ex. GCFC/GCSO Joint Response to Violent Incidents SOP) (Gallatin County Communications Plan)

Selection of Unified Command Participants: The proper selection of participants to work within a unified command structure will consist of:
- Any jurisdiction or discipline who's safety of a responder is affected.
- Any jurisdiction or discipline who has customers affected by the event.
- Any jurisdiction or discipline who's workload is affected by the event.
  - Money already spent
  - Resources already committed
  - Committed to spend money
  - Committed to providing additional resources

The criteria can, and should be reviewed and verified periodically throughout the incident.

Responsibility of Unified Command Participants: It is the responsibility of the participants in the unified command group to represent their individual jurisdictions, responders, or customers needs. These needs will be the basis for identifying strategic goals and tactical objectives to mitigate the incident at hand.

Participants must have either:

- Direct "decision making authority" for the agency
  - Able to commit money and/or resources

Or

- Immediate access to someone within your agency who does have that authority.

Consider using C.A.N. (Conditions, Actions, Needs) reports as an initial means of exchanging information between agencies.

*** The intent of having the above mentioned personnel as part of the Unified Command Group is an effort to make efficient and accurate decisions in a timely manner. ***

Media Tips

Interview Tips

Be prepared, write down notes and review before interview.
Be concise.
Use the words "_____ Fire Department". Message.
Be honest. If you don't know, say so!
Take opportunities to promote FD & human interest stories.
Remember, everything is on the record.
Be courteous and helpful to the media.
Be yourself.
If you need help, ask for a PIO.
No sunglasses. - Turnouts OK.

Fire Information

For injuries/fatalities - DO NOT release names until next of kin is notified
and IC says its okay to release names.
Good response times/time under control
Address and unit number
Cause and dollar loss - per investigator (only if known)
Do not give out name of occupant/owner
Conditions on arrival/damage, Specifics of operations
Fire prevention issues/smoke detectors
Unusual hazards/problems
Relocation of residents
Number of FD units at incident
Human interest/exceptional performance
With OK from IC/Safety, provide media w/close vantage
Each Alarm = 10 FD units/30 fire fighters

MT Fire Service Mutual Aid – Media Guide

EMS Information

For injuries/fatalities - DO NOT release names until next of kin is notified
and IC/PIO says it's OK to release names.
Good response times
Injuries & treatment
Specifics of operations, Unusual hazards/problems
Human interest/exceptional performance
Coordinate information with other agencies
Numbers, genders, hospital, condition of patient(s)
IF CLEARED BY IC/PIO

Haz Mat Information Chemical/Product

Good response times and number of units
Types and quantity of chemicals
Hazards to public/environment
Cause of release
Specifics of operations
Area evacuated
Anticipated length of operation
Human interest/exceptional performance
General chemical information (see Chemical & Physical Prop)

Rescue Information

Good response times
Age, Gender, no names, injuries, resident or tourist
Cause of incident Specifics of operations - Unusual hazards

Thoughts on Public Info Call Centers

Missoula County 911 Director Jane Ellis (ret.)
11/3/07

Big piece of customer service

Information sources
- Decide at the beginning what sources are official and what info can be given out. Call takers need to adhere to that party line.
- Sources
    - Local Fire, Law Enforcement, Public Health
    - State Agencies
    - Federal Agencies
    - Don't repeat info from the general public, but it may be valuable to pass on to Operations
- Have to have cooperation from Operations to get good current info
- Background Information
    - Good maps with named roads, topography and incident boundary
    - Websites
- Develop a "scout" position who goes out in the field to gather info from Ops

Staffing
- Call Takers don't all need to be responders. Helpful if some of them are. Great use for light duty people
- CT's need excellent phone skills, lot of empathy
- Need to not gossip
- Willing to stay within the party line
- Sharp enough to pass info off to Ops when it seems important
- Find people available for large blocks of time, means less training
- CT's should use call-backs when they don't know

- Training
  - How to talk to stressed people
  - Brief on evacuation policies and procedures
  - Jargon of the incident
  - What they might expect fro questions
  - Brief on any technology they might be using

Physical Facilities
- Must have a phone system where you can publish one number and have multiple pick-ups
- White boards for rapidly changing info
- Wall space to hang maps
- Notebooks for each Call Taker to keep info in
- Computers with access to internet
- Access to TV news is helpful

NOAA National Weather Service Forecast Assistance

NOAA operates National Weather Forecast Centers in Missoula, Great Falls, Glasgow and Billings. These centers can provide valuable spot weather forecast information to All-Hazard incidents.

Spot weather for an incident can be obtained in two ways:

- ➢ A direct call to the local forecast center.
- ➢ Submission of a "Spot Weather Request" from the closest center's website.

A phone call to the center would be the preferred method. This would allow direct connection with a center meteorologist. They could than establish who needed the information, type of incident, what type of meteorology product was required and a call back number for updates or follow-up.

Request Template

Incident Name: _____

Date: _____ **Time:** _____

Requesting Agency: _____

Requesting Official: _____

Contact Person: _____

Phone Number: _____

Fax Number: _____

Incident Type: Wildfire ☐ Haz-Mat ☐ Flood ☐ SAR ☐

Other ☐ Describe: _____

Reason for Request

Reason for Request

(*)Must choose either Wildfire or one of the Non-Wildfire reasons

☐ Wildfire

Non-Wildfire

☐ Under the Interagency Agreement for Meteorological Services (USFS, BLM, NPS, USFWS, BIA).

☐ State, tribal or local fire agency working in coordination with a federal participant in the Interagency Agreement for Meteorological Services.

☐ Essential to public safety, e.g. due to the proximity of population centers or critical infrastructure.

Location

(*)Lat: _____ (*)Long: _____

(*)Elev:_____ Top: _____ Bottom: _____

(*) Aspect: _____ 7.5' Quad: _____

Legal: (T/R) _____ Size: (Acres) _____

*Enter Lat/Lon (WGS84/NAD83 preferred), Legal(T/R) also acceptable.

FUEL

Type: _____

Sheltering

Full ☐

Partial ☐

PRIMARY FORECAST ELEMENTS

(What/When do you need?)

TDA   TNT   TMR(Today, Tonight, Tomorrow)

☐ ☐ ☐ Clouds / Weather

☐ ☐ ☐ Chance of Wetting Rain

☐ ☐ ☐ Temperature

☐ ☐ ☐ Relative Humidity

☐ ☐ ☐ 20 Foot Wind

☐ ☐ ☐ Smoke Dispersion

What weather information do you need and in what time frame(s)?

_____

_____

_____

_____

Weather Service Regional Offices

Missoula 406-329-4840,
Spot Weather: http://spot.nws.noaa.gov/cgi-bin/spot/spotform?site=mso

Great Falls 406-453-2081
Spot Weather: http://spot.nws.noaa.gov/cgi-bin/spot/spotform?site=tfx

Glasgow 406-228-4042
Spot Weather: http://spot.nws.noaa.gov/cgi-bin/spot/spotform?site=ggw
or http://www.wrh.noaa.gov/firewx/?wfo=ggw

Billngs 406-652-0851
Spot Weather: http://spot.nws.noaa.gov/cgi-bin/spot/spotform?site=byz

Your Response Information

Your Assistance Information

Your Response Notes

Adjoining State Contacts

MMA Radio Plan

Roles during a Montana Mutual Aid Deployment

☐ Person (s) who receive the request for help from an Incident
  Commander

- Get a helper - Get 2 phone lines, one for incoming only, prefer
  landlines
- Send scouts out ahead of fire trucks

☐ Person (s) who locate and contact MMA help for an Incident
  Commander

☐ Person (s) to assemble MMA Task Forces at home

☐ Person (s) who go with MMA Task Forces to incident

☐ Person (s) who go to incident commander ahead of MMA task
  forces, and help the requesting IC receive & deploy the MMA
  Task Forces

Connect, stage and get briefed, Scout(hazard, logistics, commo, etc)

☐ Person (s) who move information from the IC back to the homes
  of the MMA Task Forces during deployment

☐ Person (s) staying back to help facilitate and connect the
  needs of the responding mutual aid companies, and the
  requesting incident commander.

Other roles:
☐ Home response area covered during deployment
☐ Keep connected to responding command helpers
☐ Find "On Deck" help
☐ Facilitate logistical support (fuel, food, water, etc)

Assisting Department	**Assisting Department**
Department Name/County:	Department Name/County:
_____	_____
Task Force Leader: _____	Task Force Leader: _____
Stay Behind Contact: _____	Stay Behind Contact: _____
Stay Behind Phone: _____	Stay Behind Phone: _____
Resource	Resource
Unit/Type: _____	Unit/Type: _____
Date: _____ Time: _____	Date: _____ Time: _____
Destination: _____	Destination: _____
Staging Location: _____	Staging Location: _____
Incident Type: _____	Incident Type: _____
Travel Radio Channel: _____	Travel Radio Channel: _____
Incident Check-In Radio Channel: _____	Incident Check-In Radio Channel: _____
Assisting Personnel	Assisting Personnel
Crew Leader: _____	Crew Leader: _____
Firefighters: _____	Firefighters: _____
_____	_____
_____	_____
Assisting Department	**Assisting Department**
Department Name/County:	Department Name/County:
_____	_____
Task Force Leader: _____	Task Force Leader: _____
Stay Behind Contact: _____	Stay Behind Contact: _____
Stay Behind Phone: _____	Stay Behind Phone: _____
Resource	Resource
Unit/Type: _____	Unit/Type: _____
Date: _____ Time: _____	Date: _____ Time: _____
Destination: _____	Destination: _____
Staging Location: _____	Staging Location: _____
Incident Type: _____	Incident Type: _____
Travel Radio Channel: _____	Travel Radio Channel: _____
Incident Check-In Radio Channel: _____	Incident Check-In Radio Channel: _____
Assisting Personnel	Assisting Personnel
Crew Leader: _____	Crew Leader: _____
_	
Firefighters: _____	Firefighters: _____
_____	_____
_____	_____

Assisting Department
Department Name/County:

_____
Task Force Leader: _____
Stay Behind Contact: _____
Stay Behind Phone: _____
Resource
Unit/Type: _____
Date: _____ Time: _____
Destination: _____
Staging Location: _____
Incident Type: _____
Travel Radio Channel: _____
Incident Check-In Radio Channel: _____
Assisting Personnel
Crew Leader: _____
Firefighters: _____
                      _____
                      _____

Assisting Department
Department Name/County:

_____
Task Force Leader: _____
Stay Behind Contact: _____
Stay Behind Phone: _____
Resource
Unit/Type: _____
Date: _____ Time: _____
Destination: _____
Staging Location: _____
Incident Type: _____
Travel Radio Channel: _____
Incident Check-In Radio Channel: ____
Assisting Personnel
Crew Leader: _____
Firefighters: _____
                      _____
                      _____

Assisting Department
Department Name/County:

_____
Task Force Leader: _____
Stay Behind Contact:_____
Stay Behind Phone: _____
Resource
Unit/Type: _____
Date: _____ Time: _____
Destination: _____
Staging Location: _____
Incident Type: _____
Travel Radio Channel: _____
Incident Check-In Radio Channel: _____
Assisting Personnel
Crew Leader: _____
Firefighters: _____
                      _____
                      _____

Assisting Department
Department Name/County:

_____
Task Force Leader: _____
Stay Behind Contact: _____
Stay Behind Phone:_____
Resource
Unit/Type: _____
Date: _____ Time: _____
Destination: _____
Staging Location: _____
Incident Type: _____
Travel Radio Channel: _____
Incident Check-In Radio Channel: ____
Assisting Personnel
Crew Leader: _____
Firefighters: _____
                      _____
                      _____

Acknowledgements

Mutual Aid Contacts for Nearby States

Idaho: Larry Simms, Fire Chief Hauser Fire Department, ID
North Idaho Fire Chiefs 1-208-773-1174 hauserfd@cda.twcbc.com

Wyoming: Teton County Fire , 24 hour dispatch Teton County 911 1-307-733-2331, Office 1-307-733-4732

South Dakota:

_____

North Dakota: Rob Knute Minot Rural Fire Asst Chief and director of ND state fire school

Washington: Spokane County Fire District 4 Office 1-509-467-4500
info@scfd4.org

Mutual Aid Box Alarm System(MABAS) :
CEO Jay Reardon Office 1-630-717-2744 Cell 1-847-727-6331

Canada:

_____

Montana Fire Service Mutual Aid

Montana Mutual Aid Frequencies

Identifier	Function	National Designator	Tx (Mobile Perspective)	Rx	Notes
Gold	Check-In/Staging	None	153.9050	153.9050	
Maroon	Command/Control	VFIRE21	154.2800	154.2800	
Coral	Fireground #1	VFIRE22	154.2650	154.2650	
Scarlet	Fireground #2	VFIRE23	154.2950	154.2950	
Copper	Fireground #3	VFIRE24	154.2725	154.2725	**Note 1, 2 & 3**
Burgundy	Fireground #4	VFIRE25	154.2875	154.2875	**Note 1, 2 & 3**
Crimson	Fireground #5	VFIRE26	154.3025	154.3025	**Note 1, 2 & 3**
Red	MT State Fire Mutual Aid	None	154.0700	154.0700	
Neon	General Mutual Aid and Coordination	None	157.4250	157.4250	**Note 4**
Ruby	Fire Repeater	None	159.830	153.830	**Note 5**
Garnet	Fire Repeater Control	None	159.3450	159.345	**Note 5**
Tan	Medical Air-Ground	VMED28	155.3400	155.3400	
White	Hospital - Ambulance	None	155.2800	155.2800	
Pink	EMS Dispatch EMS Command & Control	None	155.3850	155.3850	

Notes

Note 1	Secondary to adjacent 7.5khz licensed channels. Use caution when assigning channels that are close in frequency and geographical proximity.
Note 2	Maximum mobile power is 100 watts
Note 3	Narrowband configuration only
Note 4	Maximum mobile power is 40 watts, narrowband configuration. Not available in multiple Northern Tier Counties due to FCC limitations. See *Mutual Aid and Common Frequencies Manual 2011*.
Note 5	Establishment of the Ruby/Garnet repeater requires equipment and a change in frequency configuration.

Montana Interoperable
Narrowband Frequencies
(*FCC License Required*)

Frequency	Name	National Designation	Usage	Restriction Notes
172.2250 Base Tx 170.4750 Base Rx	**Alpha**	None	General Use Multi-Agency Mobile Repeater	15 watt
172.3750 Base Tx 170.5750 base Rx	**Bravo**	None	General Use Multi-Agency Mobile Repeater	15 Watt
154.4525	**Charlie**	None	General Purpose Interoperability for Fire, EMS, Law including Local, State & Federal	15 Watt
155.7525	**Delta**	None		15 Watt
158.7375	**Echo**	None		15 Watt
159.4725	**Fox**	None		15 Watt

Other Frequencies, their use and restrictions are available in the
Mutual Aid and Common Frequencies Manual 2011 as well as *National Interoperable Field Operations Guide, version 1.4*

National Non-Federal VHF Interoperable Channels *

Description	National Designator	Frequency	Tone
Calling	VCALL 10	155.7525 Tx/Rx	CSQ/156.7
Tactical	VTAC 11	151.1375 Tx/Rx	CSQ/156.7
Tactical	VTAC12	154.4525 Tx/Rx	CSQ/156.7
Tactical	VTAC 13	158.7375 Tx/Rx	CSQ/156.7
Tactical	VTAC 14	159.4725 Tx/Rx	CSQ/156.7

*May be used when user holds an FCC Public Safety License per Part 90

North Dakota Interoperable Radio Zone 5

North Dakota utilizes a standard configuration in "Zone 5" of their radios for mutual aid use.

North Dakota Statewide Interoperability Bank/Zone 5

	Rx/Tx Freq	Tx/RX CTCSS Tone	Primary/Intended Use	Common Name (National Designation)
CH1			Not Used	
CH2	155.475	156.7	State Radio NCS and Incident Command	S3VLAW31
CH3	155.475	156.7	State Radio NCS and Incident Command	S3VLAW31
CH4	151.1375	156.7	Incident Command Net (Alternate/Spare)	VTAC11
CH5	154.4525	156.7	Incident Command Net (Alternate/Spare)	VTAC12
CH6	158.7375	156.7	Operations Section Chief Net	VTAC13
CH7	155.7525	156.7	Staging Area Manager Net	VCALL10
CH8	155.370	146.2 CSQ	Law Command (Lead Tactical Law Enforcement Official)	LAWCMD
CH9	155.430	192.8	Law Enforcement Tactical 1	LAWTAC1
CH10	155.505	192.8	Law Enforcement Tactical 2	LAWTAC2
CH11	155.4825	156.7	Law Enforcement Tactical 3	VLAW32
CH12	154.295	156.7	Fire Command (Lead Tactical Fire Official)	SVFIRE23
CH13	154.2725	156.7	Fire Tactical 1(Fire Div/Branch/Group)	VFIRE24
CH14	154.2875	156.7	Fire Tactical 2 (Fire Div/Branch/Group)	VFIRE25
CH15	154.3025	156.7	Fire Tactical 3 (Haz-Mat)	VFIRE26
CH16	154.280	156.7	Fire Tactical 4 (Alternate/Spare)	VFIRE21
CH17	154.265	156.7	Fire Tactical 5 (Alternate/Spare)	VFIRE22
CH18	155.340	156.7	EMS Command (Lead Tactical EMS Official)	S5VMED28
CH19	155.3475	156.7	EMS Tactical 1 (EMS Div/Branch/Group)	VMED29
CH20	159.4725	156.7	EMS Tactical 2 (EMS Div/Branch/Group)	VTAC14
CH21	155.160	156.7	Search & Rescue (SAR) Ground Operations	SARWFM

Notes

National designators utilize the following format:

V=VHF radio service, Fire, Law & Med self-explanatory, 31, 21, 29 etc are the frequency designator

SVLAW31, SVFIRE23, S5VMED28 are North Dakota equivalents to the National Designator assignment. See: *National Interoperable Field Operations Guide, version 1.4*

Exposure Reduction – Decon after fires

John Culbertson, PhD, MT Fire Training School

Do the following to reduce exposure to toxic byproducts of structure fires.

To minimize skin absorption of contaminants during (or after) a fire response:

- Wear NFPA 1971/1981 compliant protective ensembles for structural fires during knockdown and overhaul for all fire responses.
- Wear long hoods that are unlikely to come untucked during operations.
- Wash hands immediately and shower as soon as possible after fire suppression, overhaul, and investigation activities.
- Put on clean clothing after showering.
- Launder turnout gear routinely using purpose built PPE extractor or a professional service. Do not launder this gear at home.
- Clean other equipment that could contact the skin if it is visibly soiled.
- Clean SCBA facemasks after each use using cleaners approved by the manufacturer.

To minimize the potential inhalation of contaminants off-gassing from contaminated gear:

- Remove SCBA (and hood) last when doffing gear after fire suppression activities.
- Doff gear before entering the rehab area.
- Store gear on the outside of the apparatus during the ride back to the station.
- Do not store gear in personal vehicles or living areas.

References:

Fent, K. et.al, (2014). *Systemic Exposure to PAH's and Benzene in Firefighters Suppressing Controlled Structural Fires.,*The Annals of Occupational Hygiene, 58, (7), pp 830-845.

Fent, K. et.al. (2013). *Evaluation of Dermal Exposure to Polycyclic Aromatic Hydrocarbons in Firefighters.,* Report No 2010-0156-3196, U.S. Department of Health and Human Sercices.

Notes