



THE
COTTONVILLE
FIRE

MAY 5, 2005

FINAL REPORT

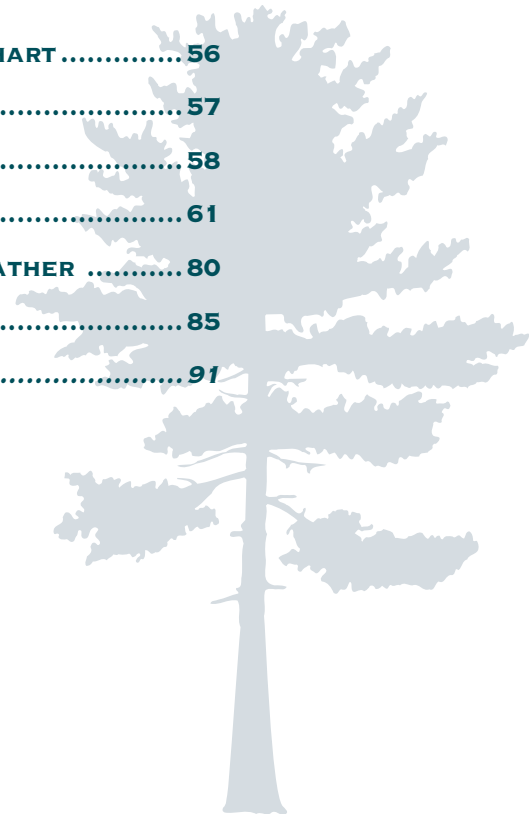


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INTRODUCTION – COTTONVILLE FIRE



On May 5, 2005, a forest fire occurred, originating in the Town of Preston in Adams County. Because of the size of the fire, the amount of timber and structural damage it caused, as well as the magnitude of the response to the fire, the Wisconsin Department of Natural Resources – Division of Forestry decided to conduct a formal review of the fire and the suppression efforts that resulted.

The team assembled to conduct the assessment included the following people

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West Central Regional Forestry Leader

Mike Luedeke
Northern Regional Forestry Leader

Steve Courtney
Area Forestry Leader, Wisconsin Rapids Area

Mike Folgert
Area Forestry Leader, Peshtigo Area

Ed Forrester
Area Forestry Leader, Cumberland Area

Russ MacDonald
Assistant Unit Manager, Michigan DNR

James Barnier
Fire Suppression Specialist

Rick Bucklew
Law Enforcement Specialist

Trenten Marty
Director, Bureau of Forest Protection

Blair Anderson
Chief, Forest Fire Management

The team accumulated information on the fire, ranging from weather information to dispatch records to accounts of experiences from many of those who worked on the fire. Opportunities were presented to most personnel on the fire to orally present their experiences and concerns related to the fire. All had the opportunity to provide written input. The assessment of the effort was divided into seven sections, with the full team addressing and discussing all issues. A team member was assigned to develop each section into written form. The Wisconsin Rapids Area Forestry Leader, who served as IC on the incident, was not assigned a section. The team reviewed the document and its structure. The seven sections are –

Safety

Organization

Communications

Wildland Fire Suppression

Structural Protection

Air Operations

Law Enforcement

Identified issues will be addressed through assessment by teams (Forestry Operations Team, various specialist teams, ad hoc groups, etc), training, policy or a combination. Communication to the field will be a critical part of assuring that identified solutions find their way to the fire ground and become part of our standard operations. Such prescriptions will have to be “truthed” to be sure they are reaching the field, and are generating the anticipated successes.

It is important to recognize that most of the recommendations here are universal, and are recognized as better ways of managing our future operations throughout the state. A recommendation is not necessarily reflective of a shortcoming associated with the Cottonville fire effort, but an endeavor to move the fire management program forward.

SUMMARY

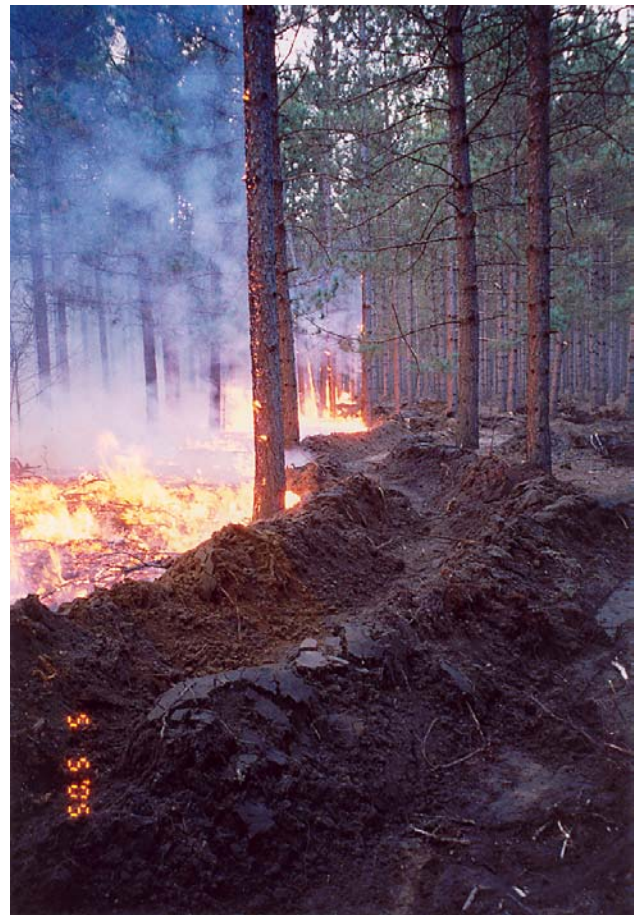
Weather in the Wisconsin Rapids area had been somewhat variable in the days preceding May 5th, the day of the Cottonville Fire. While there had been generally dry conditions for weeks before, National Fire Danger Rating System adjective levels had been at “Moderate” as recently as May 2nd. However, a dramatic change in conditions followed, and by the 5th, “Very High” and “Extreme” indicators occurred. In addition, the Fire Suppression Specialist observed and shared with fire management personnel some alarmingly high indicators generated through the Canadian Forest Fire Danger Rating System.

The Cottonville Fire was initially reported at 13:31 to the Adams County Sheriff as a structural fire. Despite rapid response, the fire ran over seven miles and burned 3,410 acres in the Towns of Preston, Big Flats and Colburn in Adams County before containment was declared. The resources at risk in this wildland urban interface area fire were extensive. By the time it was contained, at 12:30 the next morning, 90 structures were destroyed, including 30 residences, and 300 structures were saved. An extraordinary number of resources coordinated their efforts to suppress the fire –

- DNR –
 - 199 personnel
 - 76 engines
 - 38 tractor plows
 - 4 aircraft
- 22 fire departments
- 7 private dozers
- 5 crews
- 2 additional aircraft from out of state
- 18 other agencies and organizations
- \$287,000+ in suppression costs

Events of this magnitude invariably bring to light outstanding efforts. The Wisconsin Rapids Area has taken many steps that dramatically enhanced the effectiveness of the response to the Cottonville Fire.

Their preparation for an incident such as Cottonville has been diligent, thorough and effective. This includes extensive training of fire departments and other cooperators in the Incident Command System, and the specific responsibilities related to structural suppression organization. A mock fire and other exercises had cooperators well prepared for such an event, and it showed. Specific preparation for structural



protection, including training in organization of resources techniques to use with structures, as well development of structural maps, were invaluable in limiting the structural losses.

The actions of initial attack forces during the early minutes of the fire were superb, and set the stage for a successful effort.

The creation of the Forestry Team Leader position in the last reorganization demonstrated its value during this incident. Continued cultivation of this position statewide will yield great benefits to the fire program.

Technological advances clearly showed their application, as use of GPS units enhanced the ability to obtain intelligence on the fire, both currently and in retrospect. Additionally, the situation unit used IT resources effectively to produce and display maps of the fire.

But perhaps more than anything, the efficacy of the preparatory efforts was demonstrated by the safe manner in which the effort took place. There were only three very minor injuries during Cottonville, despite the presence of hundreds of personnel, nearly 200 pieces of equipment, and six aircraft, to say nothing of the hundreds of citizens that were evacuated under crisis conditions. Despite dangerously erratic fire behavior, the safety lessons endlessly reinforced in training bore fruit as no one was in harm's way, even when a wind shift caused a large blowup on the right flank early in the fire.

Even as these successes demonstrated the benefits of preparation and planning, they also pointed to needs that require even more emphasis. And the effort at Cottonville brought to light other ways to further improve the effort in the future, needs that are difficult to identify until an incident such as this takes place. It is one of the objectives of the review process to capture those issues, and address them in the field.

While evacuation was previously recognized as a need, and addressed in training, the time requirements and urgency associated with evacuation on an incident of this magnitude brought to light the need to better prepare and coordinate in the future, both within the department and with cooperating agencies.

Wildland suppressions efforts demonstrated some staffing and equipment shortcomings that need to be addressed to enhance the effectiveness of DNR suppression forces. The need for fine-tuning of line construction efforts became apparent.

Some of the organization and function within the Incident Command Team also needs some minor adjustment to manage incidents of this size and complexity even more effectively.

Some issues surrounding air operations need to be remedied. These relate to equipment, roles of personnel, and better incorporating the air effort into the overall suppression structure. Tactical questions related to use of air resources also arose.



SAFETY

From written documents to interviews with firefighters and Incident Management Team (IMT) members, there was a clear commitment to safety throughout this incident. Further, beyond the words, this review team found actions that clearly implemented the Department's expressed intent to manage a safe operation.

On several occasions, line construction was halted to observe what appeared to be dangerous fire behavior, and then continued only after the situation was safe or mitigated to make it safe. This use of situational awareness and the internalization of the LCES concepts by firefighters and leaders resulted in a safe operation in a dangerous environment.

The Incident Management Team (IMT), the Wisconsin Rapids Area and all firefighters assigned to this incident are commended for the training, leadership, interagency preparedness, and on-scene implementation of safety during the Cottonville fire.

Positives - Safety

- Incident Objectives called for a flanking attack, which was implemented by suppression forces keeping "one foot in the black".
- There was no attempt to attack the head of this fire during the first four to five hours. Any attempts to do so would have failed and clearly endangered firefighters.
- Burning out the line occurred as the tractor plows progressed most of the time. This was particularly true on the right flank in very dangerous fuels.
- Line Construction Groups stopped to observe the fire behavior when wind changes occurred. The minor amounts of time that these "halts" took were well worth it in terms of firefighter safety.
- When a tractor operator found that spotting had crossed the fire line behind them, they stopped to observe the fire behavior and plan a proper response. When they stopped, the blade of the tractor was in the black and escape was certain if conditions worsened.
- During one wind surge from the west, the right flank became a crown fire in a 15-18 foot tall Red Pine plantation, moving to the east 1,100 feet with extreme intensity. At this time, the right group had halted out of harms way and watched the fire make its run as no



firefighting force could have suppressed it. This change of wind direction with high intensity for a significant distance should be understood by all Wisconsin firefighters implementing flanking actions on fires.

- The Right Group Supervisor kept detailed data on the location of suppression forces with hand held GPS equipment. This would have provided the information for immediate and potentially life saving support during an emergency on the line.
- The structural team established a "rehab" unit for the volunteer firefighters doing structural protection. This is a clearly sound initiative and should be implemented statewide.
- Structural protection was done from "within the black" which greatly increases firefighter safety. The tactic was also successful in providing structural protection.
- The impact of the Initial Attack Incident Commander (IAIC) and Team Leaders early recognition that this was going to be a dangerous fire which would result in heavy resource orders and their early request for an IMT cannot be overemphasized as the basis for a safe operation.
- The pre-selected and improved Incident Command Post (ICP), with communications antennas erected before the incident, proved their worth, as the ICP was established quickly, reducing the chaos of extended attack, and also improved safety.

Lessons Learned - Safety

MAJOR

This category is intended to focus on big issues that are deemed needing early attention throughout the agency and partners. While these issues were identified on the Cottonville fire, they are believed to be common throughout the agency.

EVACUATION

Human life is the number one priority of all IMTs and all emergency response personnel. Given this recognition in the wildland urban interface (WUI), the evacuation information from the Cottonville fire received more attention than has occurred during past reviews.

It appears that evacuation takes much more time per structure than has been thought. Further, it appears that the number of law enforcement officers on duty in rural counties may not be adequate to safely evacuate people before the fire arrives at their home. (See additional comments in Law Enforcement).

Recommendation:

- ✓ The Division of Forestry should focus on evacuation as a major planning topic with partner agencies to find solutions that assure the provision of adequate evacuation staffing during the initial hours of incidents such as Cottonville. It is further recommended that this be completed by the spring 2007 fire season.

LINE HOLDING

On both the right and left flanks spotting occurred across the fire line behind the tractor plows. With “one foot in the black” these units were able to maintain LCES and were not in danger during the Cottonville fire. However, a small increase in fire intensity or topography can change the dynamics of the fire ground. Therefore, these spot fires behind the tractor plows have to receive increased attention on future fires.

The increased need for personnel to burn out line combined with a changing demographic and legal environment have resulted in a short supply of able emergency firefighters, which needs to be addressed. (See additional comments in Wildland Fire Suppression).

Recommendations:

- ✓ The Division of Forestry needs to address emergency firefighter shortages.
- ✓ Consider placing all wheel drive Type 4 engines in the Level of Protection 1 areas so that they can drive the rough fire line after the dozers have passed. From 1/3 to Ω of the Type 4 engines should be all wheel drive equipped in these areas.

YOUNG RED PINE AND JACK PINE DURING CROWN FIRE CONDITIONS

High-density pine types that have not been thinned, whether plantations or overstocked natural stands, are a design for disaster related to firefighter safety. These types support crown fires, which can change directions quickly, run up to seven MPH, and are of an intensity through which humans cannot live. Further, these dense forest stands are difficult to operate machinery through, and the slow rates of held line construction increase the exposure of equipment operators to accidents.

In these situations, even three tractor plows can build line on the ground and not open the canopy enough to prevent crown fire from crossing the line and entrapping firefighters.

Recommendations:

- ✓ The Division of Forestry should address the need for heavy dozers. (See additional comments in Wildland Fire Suppression).
- ✓ The Division of Forestry should open a dialogue with landowners who own large blocks of red and jack pine plantation related to management of these species for the safety of firefighters and the protection of their forests.
- ✓ The Division of Forestry should host discussions, internally and externally, about the nature of firefighting in these kinds of forest complexes, so that firefighters and landowners understand that this is a critical safety issue, and that tactically, the Department will utilize indirect attack or may suspend suppression efforts during the peak of the fire day. The results of these discussions should then be reduced to written instructions to the firefighters and implemented via training.

DEPARTMENT OWNED FIXED WING AIRCRAFT

While there were positives, such as alerting firefighters on the ground when the blowup occurred early in the fire, other issues related to department aircraft operation need to be addressed, including organization, communications, and command and control issues. (See additional comments in Air Operations).

- ✓ The Air ad hoc Team and the Aeronautics Section will resolve issues around aircraft organization, communications and command and control.

AIRCRAFT AS THE LOOKOUT

Some fire line supervisors expressed the strong view that having an aircraft overhead was an absolute necessity to fight fire in Wisconsin. Due to high winds, mechanical problems, fuel problems, pilot duty hours, and a host of other reasons, aircraft will not always be available to be the lookout on fires.

Recommendation:

- ✓ Aircraft should be used as a secondary, not a primary lookout. The Fire Management Section, working with the Fire Management Specialist Team, should develop training on how to fight difficult fires without the use of aircraft and still maintain compliance with LCES. This training should be part of the 2006 recertification training for rangers.

COMMUNICATION AND PLANNING COORDINATION

Generally, there was very good coordination between the IMT, the Region and the Command Center. However, small but significant gaps and confusion occurred about who was to do what among the IMT, the Region, the Command Center and, subsequently, the other regions. (See additional comments in Organization).

Recommendation:

- ✓ The Command Center, the regions and the areas should develop standard procedures for extended planning.

PHYSICAL FITNESS

Personnel on both flanks that were on foot reported being physically drained at the end of the day.



Recommendation:

- ✓ Continue efforts to establish improved standards for physical fitness of firefighters and fire line supervisors.

Other significant findings - Safety

FIRE DEPARTMENT BOSS/STRUCTURAL COMMUNICATIONS

Radio problems occurred between the Fire Department Boss (FDB) and Structural Branch. Communications breakdowns at this position have the potential to result in multiple injury or fatality incidents, as well as unnecessary loss of structures. (See additional comments in Structural Protection and Communications).

Recommendation:

- ✓ Address needs of FDB vehicle, including communications.

FIRE DEPARTMENT COMMUNICATIONS

Communications between DNR and fire departments, as well as among fire departments, must be improved through a wider implementation of the WISTAC frequencies and MARC frequencies. This potential major problem for firefighter safety will become more acute as agencies go to digital narrow band radios on varied schedules in the near future.

Recommendation:

- ✓ It is recommended that the emphasis of fire department grant programs be shifted to communications as a safety priority. Homeland Security funding may be a source of funding for these changes.

NIGHT OPERATIONS

There was a shortage of radio clamshells and batteries along with headlamps on the first night.

Recommendation:

- ✓ Areas should increase the local cache of these items to a total of one per each heavy unit, plus one for each anticipated heavy equipment cooperater.

PELTOR HEAD SET

One Peltor head set/radio combination or push to talk reportedly failed to work just at the point where the fire jumped the line behind a tractor plow.

Recommendation:

- ✓ Replace all existing Peltor headsets by spring of 2007.

FIRE BEHAVIOR FORECAST

A special fire behavior forecast was sent out by the Suppression Specialist via e-mail at 1137 on May 5th to the Area Leaders at Wisconsin Rapids and Black River Falls. This was a great initiative on his part, but the Rapids Area Forestry Leader (AFL) did not read it until 12:44, and the Black River AFL didn't see it until 13:36. Since area leaders are often out in the field on fires or readiness inspections, it is fortunate that they read it at all.

Recommendation:

- ✓ Continue to send out this information, but develop a standard procedure to be established by spring of 2006 related to critical fire weather transmissions to Bureau staff, Regional Forestry Leaders (RFLs), AFLs, the dispatchers, and to all firefighters, so communication is certain.

SINGLE ENGINE AIR TANKER (SEAT) DROPS

There are no reports that SEAT drops diminished fire intensity enough to increase firefighter safety on the line. While such resources should not be ignored, neither should they be depended upon solely for safety.

Recommendation:

- ✓ Adjust training and develop policy to assure that no tactical approach is taken that relies solely on SEAT drops for safety.



TRAFFIC SAFETY

There were several reports of traffic control problems on Highway 13 at County trunk C during the incident and when the dignitaries arrived at Pinelands School. (See additional comments in Law Enforcement).

Recommendations:

- ✓ Firefighters need to employ a defensive driving attitude to enhance safety, especially during the first hours of a fire when all available officers may be tied up doing evacuation so.
- ✓ During later shifts, the IMT, in cooperation with local law enforcement, needs to be aware of the impact on all incident activities that visiting dignitaries can have and plan to mitigate them.

EXTERNAL HEAVY DOZERS.

Recommendation:

- ✓ Private or other non-forestry large dozers and operators need proper communications and personal protective equipment. (See additional comments in Wildland Fire Suppression).

EYE SAFETY.

Recommendation:

- ✓ All fire personnel should be provided with safety glasses, a standard component of personal protective equipment (PPE), and expected to wear them at all times while engaged in firefighting activities.

ORGANIZATION

The purpose of this section is to study the organizational structure used during the Cottonville Incident to identify positive situations to be reinforced throughout our program and to identify potential changes or improvements.

All staff that participated in the incident and on the incident management team deserve a commendation for the excellent job they did in the organization and management of the Cottonville Fire and for their existing skill and knowledge of their particular assignment.

Positives-Organization

- ▶ There was early recognition by the Initial Attack Incident Commander that this fire would quickly become an extended attack fire and the Wisconsin Rapids IMT was promptly ordered.
- ▶ The Wisconsin Rapids IMT took command of the fire within the first hour of the fire initiating.
- ▶ Written incident objectives were developed and communicated by the IMT Incident Commander shortly after taking command.
- ▶ The pre-planned incident command post at the Big Flats Town Hall proved to be an excellent facility for management of the Cottonville Incident.
- ▶ Having only a single ICP, with all agencies under a single roof (DNR IMT; Adams County Emergency Management; law enforcement; Red Cross; Salvation Army), was very beneficial to the communications and coordination of efforts during this incident.
- ▶ The working relationship between the Red Cross and Salvation Army in Adams County is extraordinary and assisted in the clear delineation of roles and responsibilities of the organizations. This clearly had a positive effect on the individuals evacuated during the Cottonville Fire and the overall management of the incident.
- ▶ Support provided by the Pineland School District, Big Flats Fire Department Auxiliary, Salvation Army and Red Cross greatly facilitated the success of the logistics team and the overall mission of the IMT.
- ▶ The Forestry Team Leaders in the Wisconsin Rapids Area played critically key leadership roles during the Cottonville Fire, including Fire Department Liaison, Operations Section Chief,

and Deputy Plans Chief, who also filled in as Dispatch Group Area Supervisor.

- ▶ Early notification (within the first fifteen minutes of the fire being reported) of the Bureau of Forest Protection by the region that there was an initiating fire in a high hazard area was extremely beneficial in allowing bureau staff to make needed contacts to staff the command center.
- ▶ Internal partners from across the agency played key roles (law enforcement, public information officers, finance, safety officers and incident management team members) in support of the incident.

Pre-Fire Preparation-Organization

To develop a strong effective organization, an Incident Management Team must train, exercise and be prepared prior to the unexpected emergency need. Advance preparation is the key to any organizations success. Needless to say, any emergency situation requires extensive training to provide the basis on which to make sound decisions in the limited time frame that an individual has to make a correct and decisive decision. The Wisconsin Rapids IMT demonstrated the value of these principals of advance preparation and training, and they were utilized effectively during this emergency situation. Recent incident management training included a mock fire in 2002 in the Big Flats area, annual IMT refresher training, and IMT recertification in 2004 during Chronic Wasting Disease monitoring. In addition, prior to the Cottonville Fire, the Wisconsin Rapids IMT had been successfully activated for the Easton Tornado in 2004 and for the Emmons Creek Fire in April, 2005.

Pre-Fire Issues-Organization

PRE-ESTABLISHED INCIDENT MANAGEMENT TEAM (IMT)

Less than three years prior to the Cottonville incident, the Division of Forestry went through a reorganization process that brought a new AFL (the extended attack IC) to the Wisconsin Rapids Area. In addition, the reorganization created a new position within the Forestry Organization, Forestry Team Leader that is the first line supervisor in organized protection areas of the state. The Forestry Team Leaders in the Wisconsin Rapids Area played critically

key leadership roles during the Cottonville Fire, including Fire Department Liaison, Operations Section Chief, and Deputy Plans Chief, who also filled in as Dispatch Group Area Supervisor. In addition, the West Central Regional Forestry Leader ensures that annual IMT training is included in the current area work plans, and that fire planning efforts are a priority and are completed and reviewed prior to the fire season.

The Wisconsin Rapids IMT has great pride and camaraderie that has developed over time through training together and in its abilities to manage emergency situations. Several positive experiences can be gleaned from the Cottonville Fire that will benefit other teams across the state. These include the training with partners and encouraging their participation with our IMTs and encouraging volunteer organizations through Vocational Organizations Assisting in Disasters (VOAD) to develop delineation of duties prior to an emergency as has been done in Adams County.

One area that needs to be addressed is that there needs to be a process developed to test the ability to contact each IMT member in a timely fashion. During spring fire season this should be a weekly test process – activation of the pagers at a pre-designated time (i.e. Friday morning at 10:00am).

The size and complexity of incidents our IMTs are dealing with continues to grow. In order for these IMTs to effectively deal with these emergency situations, the Department needs to commit to supporting the Division's IMTs and encouraging individuals from across the agency to participate as members of the IMTs. This is not only for the incident itself, but also for the IMT training and individual position training. There were numerous key roles filled on the Wisconsin Rapids IMT by individuals from other functions within the agency. It is not so much that individuals from other programs are not interested in assisting in this IMT effort, but more a matter of budgetary issues relating to standby and overtime payment for other programs.

Recommendations:

- ✓ To be most effective, IMTs should train annually and practice as a team and with external partners (fire departments, local law enforcement and emergency management, Red Cross, Salvation Army, amateur radio clubs, etc.) and internal partners (fisheries, wildlife, conservation wardens and other non-fire forestry staff) prior to fire season.
- ✓ The Department should encourage outside agencies that we commonly interact with during emergency incidents (Red Cross, Salvation Army and Emergency Management) to adopt our system of utilizing color-coded vests to identify their personnel and who is the leader of the organization.
- ✓ The Department should actively engage in supporting the development and growth of Volunteer Organizations Active in Disasters (VOAD) in each county. This board is comprised of volunteer organizations that we rely on during emergencies and is actively working on delineation of duties of these volunteer organizations.
- ✓ When needed, IMT members should be notified by a written document (Operations Plan), as well as by another media (e. g., cell phone, pager, e-mail or voice message), that they are on call. That needs to be confirmed, and the procedure tested throughout the fire season.
- ✓ The Division of Forestry needs to continue to provide the training and experience opportunities so that Forestry Team Leaders can take key leadership roles on incident management teams and increase the overall organizational responsiveness to emergency situations. These key leadership roles need to have dedicated forestry personnel assigned to them, not only for the incident, but also for training.
- ✓ The Department needs to give priority to and commit to supporting the Division's IMTs and encouraging all individuals across the agency to participate as members of IMTs. This is not only for the incident itself, but also for the IMT training and individual position training.
- ✓ The Department needs to resolve the issue of funding standby and overtime payments for individuals assigned to IMTs from outside the Forestry Program and Department.

INCIDENT COMMAND POST (ICP)

The pre-selected site, Big Flats Town Hall, was close and functional to the incident, approximately 2 miles away from the fireline when it crossed Highway C. The ICP was relatively easy to find in light of the appropriate signing and location to the incident. The ICP was equipped with pre-established communication towers and with the Area's ICP trailer. There was an LE command post vehicle located immediately adjacent to the Big Flats ICP. The only significant drawback to this ICP site was the lack of landline phone lines for communication purposes or VPN connections. There were some radio communication issues at the ICP that were solved with the assistance of the DOT radio technicians.

Recommendations:

- ✓ Recognize communications problems early and have a communication specialist (DOT radio technician) as part of the IMT.
- ✓ Continue to identify and develop pre-established ICP locations in high hazard areas throughout the state.
- ✓ Pre-established ICP should have a minimum of six land phone lines for use in an emergency situation. High-speed Internet computer connections would be beneficial as the use of technology with our IMTs continues to expand.
- ✓ Important to gain knowledge of where pre-planned evacuation centers in the county are located. The ICP and evacuation center should not be in same facility, though it works when they are in close proximity.

Organization development during the Incident

This section assesses the various components of the Incident Command System structure as they developed and functioned during the Cottonville Fire.

- Forestry Command Center
- Command and General Staff
- Operations – Air Operations, Wildfire Branch/Line, Divisions, Line Construction Groups
- LE Branch
- Structural Branch
- Plans Section - Situation Unit and Resource Unit
- Logistic Section – Supply Unit and Service Unit
- Finance Section

FORESTRY COMMAND CENTER

Early notification by the West Central Region of the Bureau of Forest Protection that there was a fire in a high hazard area with potential to be a project fire was critical to the ability of the Forestry Command Center to effectively support the incident. Cooperation from the regions to support the Cottonville Fire with personnel and equipment was outstanding. Having the Regional Forestry Leader being physically located in the Wisconsin Rapids dispatch center, while being the primary contact with the Forestry Command Center was a key to the success of the interactions between the Region and the Command Center.

The decision to freeze all forest fire suppression personnel at their stations, statewide, by the Forestry Command Center until the situational needs at Cottonville and Cecil/Underhill could be determined by the affected regions needs to be assessed. There are significant benefits to be gained by releasing personnel far from the scene of the fire (4-5 hour drive) to eat supper, rest and/or pack for deployment.

There was some discussion regarding who should be restricting the air space on a large forest fire. (See additional comments in Air Operations).

The West Central Region and the Forestry Command Center on the Cottonville Fire needed to better communicate in regard to the demobilization of resources assigned to the fire. In addition, we need to develop policy and communicate to staff the expectations for their mobilization to an incident in another region. This would prevent repetitive ordering

of similar resources to those that were released from the fire the day prior, and unnecessarily holding stations open late, statewide, resulting in unnecessary fatigue for firefighters. This policy should clearly articulate the Division's policy in regard to whether personnel working on a fire should be demobilized to their home stations or required to spend time recuperating prior to being released to their home station.

RECOMMENDATIONS:

- ✓ Demobilization of resources mobilized by the command center from a forest fire should occur in consultation between the region and the command center to improve communication, expectations and coordination statewide.
- ✓ Develop a policy on expectations of personnel mobilized to a forest fire in another region through the command center in regard to length of assignment and work/rest guidelines prior to release to their home station.

COMMAND AND GENERAL STAFF

The initial attack incident commander made good decisions early on, recognizing this to be a project class fire and notifying the proper personnel of its potential size and resource needs. Transition of command from the initial attack IC to the extended attack IC consisted of a face-to-face briefing with a description of resources deployed and ordered. The Wisconsin Rapids initial attack IC's checklist was beneficial in facilitating this transitional meeting. The extended attack IC established clear objectives that were shared with the operations section and with the rest of the IMT.

The use of numerous public information officers (PIO), from several different agencies, was a positive for the IMT. There never was a designated lead PIO for the incident, which led to some question of who was in charge of the public information effort. In addition, press releases and media interviews from the incident utilized the home agency of the PIO, instead of a Wisconsin DNR spokesperson. The general public had the impression that the identified agency of the PIO was in large part responsible for the overall management and suppression of the Cottonville Fire.

Management of the evacuees by the IMT and Red Cross helped insure the success of the overall mission. Meeting with the evacuees at the Pineland School by the incident commander on the eve of the fire helped open channels of communication and sharing of information with the impacted landowners.

With an incident of this magnitude, there will be significant media coverage and, most likely, a visit to the site by the Governor and other dignitaries. (See additional comments in Law Enforcement).

Recommendations:

- ✓ As occurred on this fire, objectives should be clearly posted, explained and understood by all resources managing and suppressing the fire.
- ✓ A fire of this magnitude requires more than a single PIO to coordinate and deal with the requests for information from the public and media sources.
- ✓ A lead PIO should be appointed by the Incident Commander to provide a clear direction and understanding to the PIOs assigned to the fire.
- ✓ PIOs need to identify themselves as a spokesperson for the Wisconsin Department of Natural Resources IMT. Interagency PIOs and IMT members should identify themselves as working with the Department, which is the agency responsible for the incident.
- ✓ Incident commanders need to recognize the value of meeting with the impacted individuals of the incident early in the incident to provide them with information on the situation, as happened at Cottonville.

OPERATIONS

The decision to establish line construction groups initially was appropriate. Resource deployment by the Operations Section was timely during the incident, but continued emphasis on assigning additional tractor plows to the line construction groups as the fire progressed in hopes of increasing line production rates were affected by the law of diminishing returns. The lack of resources, both personnel and equipment, to adequately staff divisions behind the line construction groups became evident during this incident. (See additional comments in Wildland Fire Suppression).

There was minimal command and control of air resources utilized on the fire, as there was almost no organizational connection between Operations Section Chief and air operations. (See additional comments in Air Operations).

Use of the white portable repeater as a command frequency to the ICP worked well. This enhanced the cohesiveness of the organization, and helped overcome some of

the communications problems that perennially exist on all incidents. It is important to reinforce in training the need to use the phonetic alphabet when referring to divisions (alpha, bravo, charlie, etc.) during radio communications.

The transitions between day and night shifts were well thought out and executed. Replacements were given excellent briefings, many face-to-face, on status of fire, safety concerns and lookout situations. Assignments were clearly articulated.

Recommendations:

- ✓ The Division of Forestry needs to address emergency firefighter shortages.
- ✓ Develop Air Operations Branch Director position.

LAW ENFORCEMENT BRANCH

The initial attack IC saw early into the fire that law enforcement assistance for traffic control, evacuation and protection of the origin was needed. Adams County sheriff deputies were made responsible for ensuring roadblocks and evacuations were safely under way and securing the origin.

Initially the LE Branch assumed the fire investigation was completed since they had a responsible party in hand. A timely follow up investigation did occur whereby a statement was obtained from the responsible party and photos taken of the origin.

Once a local conservation warden arrived at the ICP, he worked effectively with the Law Enforcement (LE) Branch to integrate Department law enforcement officers into the overall effort. It was pointed out that having a resource locator board and the appropriate training would have been beneficial to the Law Enforcement Branch in order to track the resources and their assignments in the branch.

Several issues need to be addressed regarding evacuations. (See additional comments in Law Enforcement).

Development of criteria for the re-opening of the evacuation zone needs to have some additional thought process and discussion prior to the next spring fire season. (See additional comments in Law Enforcement).

Recommendations:

- ✓ Provide additional training for LE Branch Director regarding a fire investigation group.

- ✓ Provide a resource locator board for the LE Branch. The LE Branch needs to train with a resource locator to help recognize the locations of all LE resources on an incident and assess their availability for other assignments.

- ✓ Encourage the use of the structural zone maps for evacuation purposes.

STRUCTURAL BRANCH

For a Structural Branch Director (SBD) to be successful, they need a wide variety of information (current and expected fire activity, current and expected fire spread rates, structure locations, access, road limitations, hazards, fuels, existing safety zones, escape routes, communications, suppression resource availability and incident objectives). Since the structural branch was located in conjunction with the IMT they were able to receive this as a complete package. Recent structural boss training was provided in early April in Wisconsin Rapids. The training done with the structural branch personnel and fire departments paid dividends on this fire as “in-the-black” tactics were utilized successfully with the zone concept. Structural firefighters commented several times that the Adams County Structural Zone Maps were critical to the success of the structural branch during the Cottonville Fire.

Several valuable lessons were learned on this fire that should be adopted by other IMTs for use in the organization of the structural branch. Designating a Department liaison to the Structural Branch proved invaluable in the coordination of resources and tactics utilized on this fire. There was benefit to keeping fire departments within zones and not mixing fire departments within zones. This allowed fire departments to use their local tactical frequencies within the zones.

The Structural Branch assured that structural firefighters had opportunities for rehabilitation during the incident. (See additional comments in Structural Protection).

An issue of concern within the organization of the structural branch is the span of control of the fire department boss on the incident. There were nearly twenty different fire departments utilized across at least sixteen structural zones on an incident that was nearly seven miles long and over a mile wide.

Some shortcomings in FDB vehicles became clear and need to be addressed. (See additional comments in Structural Protection).

We do not currently provide sufficient training to fire departments on working with or around aerial fire suppression resources. As these wildland urban interface fires occur, the interaction of fire department personnel on the ground and aerial suppression resources dropping to protect structures will occur more frequently. Training should include aspects of organization of the aerial resources within the incident, safety for fire department personnel during an aerial drop, and how to request a drop on or near a structure.

Recommendation:

- ✓ Continue to recruit and train fire department personnel to fill the positions of Structural Branch Director and Fire Department Boss as part of the IMT.
- ✓ Encourage the use of Department personnel to serve as a liaison to the structural branch as a part of our IMTs.
- ✓ Make structural zone maps a priority.
- ✓ Adopt a statewide, consistent strategy for the use of the in-the-black tactics implemented through the structural zone concept.
- ✓ Provide additional structural zone maps (five) in the structural branch ICP kit.
- ✓ Evaluate span of control needs for incidents of this magnitude within the structural branch. Develop criteria, methodology and train personnel to permit the splitting of fire department boss role as fire department resources and structural zones involved exceed the span-of-control. This would greatly enhance the organizational structure and improve communications within the structural branch. It would also allow for the more timely release and re-assignment of structural resources during the incident.
- ✓ Develop and provide training to fire department personnel on the Department's aerial fire suppression resources.
- ✓ Evaluate the use of firefighter rehabilitation efforts currently utilized by structural fire departments for the Department's wildland firefighters.

PLANS SECTION

The primary function of the Plans Section is to provide fire maps, have an accurate resource accountability system, facilitate IMT briefing meetings, and stay "ahead of the curve" by planning for future needs, including demobilization.

Use of computer technology has significantly benefited the plans section and the incident management teams. There was a fire map projected on the wall of the ICP within the first half-hour of the ICP being established. Use of the new IMT color printers for storage and production of maps was a huge time saver for the situation unit personnel. The issue of administrator privileges on computers for IMTs needs to be granted, as again difficulties in utilizing the available technology to the fullest was hindered by the lack of the ability to utilize another agencies printer.

Intelligence information requests were made to DNR air attack by the plan section via radio. Due to competing demands and coordination of aerial suppression missions required of our DNR air attack pilots, providing an accurate account of the fire's progression throughout the fire run was challenging. (See additional comments in Air Operations).

The check-in function worked very smoothly, as resources arriving at the fire were checked in and, generally, given an assignment within 15 minutes of their arrival.

Often overlooked in our current IMT organization and training are the needs for documentation of the incident and development of a demobilization plan. The documentation unit needs to be started on Day one of the incident and each position within the organization needs to understand the needs of the documentation unit. In addition, demobilization plans need to be developed prior to resources being considered for release from the fireline. This begins with the Planning Section taking the lead on planning ahead 24 to 72 hours, and clearly stated demobilization objectives by IC.

In addition, we need to be cognizant that even though our IMT has been demobilized, there are still several agencies, including DNR, still actively involved in providing assistance to the landowners affected by the incident. An informational packet of where to go for resource needs or who to contact for certain situations would help ease this transition from the DNR IMT to local control of the incident.

Recommendations:

- ✓ Increase use of field observers to facilitate mapping of the fire and to provide of intelligence information to the situation unit.
- ✓ Resolve the issue with the computers utilized by IMT regarding administrator privileges in order to address situations occurring during the incident when not having computer support personnel available to assist. Alternatively, identify personnel with the knowledge, expertise and administrative privileges to be members of each IMT.
- ✓ Identify and train appropriate personnel to fill the role of documentation unit leaders on IMTs. It is critical to understand that these incidents are litigated for years after the smoke clears.
- ✓ The Department should develop an informational packet for agencies left on the incident that details key information for landowners affected by the fire. Examples of information needed were lists of heavy equipment companies, charred timber salvage companies, emergency cost sharing available, where to obtain forestry assistance, and permits needed to reconstruct homes or outbuildings.
- ✓ Clarify expectations for personnel from outside the region deployed to a fire in regard to the length of assignment and demobilization procedures to be utilized by the fire.
- ✓ Develop policy regarding personnel coming off-shift in regard to their traveling to their home or home station, and other work-rest issues.

LOGISTICS SECTION

The primary function of the Logistics Section is to ensure that all resources, both tactical and non-tactical, are ordered as requested and/or needed. The ICP trailer was prepared and well stocked to support the activities of the IMT during the incident. Logistics performance overall was excellent for meeting the needs of this fire. Support provided by the Pineland School District, Big Flats Fire Department Auxiliary, Salvation Army and Red Cross greatly facilitated the success of the logistics team and the overall mission of the IMT.

Due to the lack of phone lines, a cell phone was used by logistics and subsequently taken home by the individual when relieved. All calls for logistics came to this cell phone.

Recommendations:

- ✓ Logistics section chiefs should recognize that Red Cross and Salvation Army have relationships pre-established with area businesses that can assist in procurement of resources needed on a fire, especially food, water and ice.
- ✓ If cell phones are going to be utilized as the primary communication tool during an incident, the cell phone needs to be left at the incident site where the function is located for use during the entire incident.

FINANCE SECTION

The West Central Region has been a leader in development of a finance section to be a part of their IMTs. Utilization of these finance personnel as part of the IMT has improved the Department's ability to track costs of personnel, equipment and supplies utilized during an emergency incident.

Recommendations:

- ✓ The Department's IMTs should recruit and train members for development of a Finance Section within each IMT.
- ✓ Specifically train and exercise the Finance Section positions to promote a thorough understanding of the role the positions have in the incident and develop the section as a part of the overall team. Utilization of a finance section as part of mock fire exercises, simulations or IMT training will be critical to the successful development of this section.
- ✓ Discuss and decide who has authority to approve bills generated by the incident.

COMMUNICATIONS

The purpose of this section of the Cottonville Fire Review is to identify communication issues that occurred during the Cottonville Fire so that we can share these throughout the forest fire community and provide insight to potential training needs. In addition, we recognize communication problems and solutions that occurred during the incident so that mitigation strategies can be developed to address these items, minimizing the likelihood of having similar problems on future incidents.

Communication is the key to any successful organization, but adding the stress level that an emergency response creates, doubles the need for well trained responding resources, solid communication infrastructure and a clear set of task oriented objectives. Cottonville Fire, like any large incident, had communications issues arise that created problems for command staff and operations on the fire. The Cottonville Fire proved to be an incident not unlike any other large fire, but with additional complexity because of the largest air operation ever used on a Wisconsin fire.

Positives – Communications

The Wisconsin Rapids IMT should be commended for numerous items dealing with communication issues identified on the Cottonville Fire. These include:

- The establishment and functioning of a pre-established ICP with a low band antenna, DNR “portable” repeater antenna, and another high band antenna site.
- Functional testing of the communication systems at the Big Flats ICP, including antennas, radios, and cables, prior to the fire season.
- Excellent cooperation between initial attack incident commander and the local Team Leader to strategize and develop a successful structural organization during the developmental stages of the fire. Communication between the two was face to face.
- Although there were two communication link failures between Structural Branch and Fire Department Boss, effective efforts to find a radio communication link led to the communication gap being limited to a manageable level.
- The early communication plan developed by the initial attack IC/Line Supervisor prior to the IMT taking over the fire.



- Communication between H Division and County Sheriffs Department to evacuate citizens in the path of the fire.
- The early development and accurate mapping of the incident. This information provided the wildland, structural and law enforcement branches with needed information for successful deployment of the resources.
- Early communication between the Regional Coordinator in the dispatch center with the Command Center for notification and equipment.
- Wisconsin Rapids Area scheduled training efforts in wildland fire suppression tactics for fire departments proved to be advantageous in structural protection and a benefit to all fire departments.
- Intelligence provided by aerial platform was critical to the support of the IMT.
- The ICP was established and running within the first hour of the incident.
- Ability to move needed resources to an ongoing incident and provide for initial attack coverage was critical.
- Ongoing communication at the ICP by Structural, Law Enforcement and Wildland branch with all IMT sections.
- Forestry program use of cascaded portable radios to emergency firefighters was extremely valuable.
- Support dispatcher position was critical during the incident.
- Communication between the Regional Forester – Area Dispatcher – Fire IC was greatly enhanced by the Regional Forester’s location within the dispatch office.

Issues – Communications

The following communication related issues have been identified during the Cottonville Fire Review that need to be addressed locally, regionally or statewide for future program improvement. These can be incorporated into program improvement initiatives either through training or program policy development. These communication issues are grouped into six broad categories:

- Tactical/Operations
- Aerial Resources
- Incident Command Post
- Command Center
- Radio
- General

TACTICAL/OPERATIONS

There was some difficulty experienced in radio communications during the Cottonville Fire. Wildland tactical communications occurred on white-alpha, red and brown. White was used as the command frequency, red for both right and left groups and H division and brown for all other divisions. The structural communication started on low band and Firecom. Low band radios failed during their initial use due to power supply deficiency. In the first attempt to resolve the communication breakdown, a decision was made to utilize the repeated MARC frequency, which failed because of improper programming. Finally, the structural branch settled on the local county emergency management repeated frequency for structural branch to fire department boss and Firecom, local fire department tactical frequencies and WISTAC for fire department boss-to-zone boss communications. Air resources were using red for air to ground, 122.925 for Air Tanker to intelligence aircraft. Frequency 122.850 was initially used for the intelligence aircraft to situation unit but because of the high volume of communications on both 122.925 and 122.850 it was decided to use one frequency to better access the best time for calling the aircraft from situation unit.

During this incident a number of heavy dozers were used without radio communications.

Lack of utilizing phonetic names for divisions (A - Alpha, B - Bravo, etc.) during the incident caused some difficulties. "B" and "D" and "E" Division all sound the same when a phonetic alphabet is not used. This resulted in confusion when "B-Division" instead of "Bravo Division" was transmitted over the radio.

Recommendations:

- ✓ There needs to be a statewide radio communications plan for incidents of this magnitude to insure effective communications.
- ✓ The Division of Forestry needs to secure additional radio frequencies to utilize for tactical operations, specifically structural zones, and for air-to-ground communications.
- ✓ Private or other non-forestry large dozers and operators need proper communications. (See additional comments in Wildland Fire Suppression).
- ✓ Nomenclature and terminology utilized in tactical operations (A - Alpha, B - Bravo, etc.) needs to be reviewed and reinforced.

AERIAL RESOURCES

Several issues arose on the Cottonville Fire dealing with communication, coordination and utilization of aerial resources. This fire involved the first major use of single engine air tankers (SEATs) and CL-215 in a suppression role on an extended attack fire in Wisconsin. The use of the SEATs and CL-215 pointed out several communication and training issues regarding these resources that we need to address as a program. Lack of communication and coordination between air attack and operation section chief / line boss and structural branch caused safety concerns that need to be addressed within the program. Responsibilities for communication, intelligence and air attack were managed differently than addressed in training. (See additional comments in Air Operations).

The use of the National Guard helicopter was offered to the incident and declined. This was a decision made prior to the fire season because the ground resource and the air attack position did not have sufficient training to provide for a safe working resource.

Recommendations:

- ✓ Air attack needs to have better communications with Line/Operations and the second DNR aircraft as to the status of fuel needs to avoid both aircraft leaving for fuel at the same time, and about the frequency plan to better coordinate communication.

- ✓ Conduct statewide training for forest fire and Aeronautics personnel regarding use of heavy helicopters (Blackhawks) and CL-215 and CL-415 in forest fire suppression. Issues that need to be addressed include:
 - Capabilities and limitations
 - Drop prioritization
 - Communication, coordination and control of air resources assigned to a forest fire
 - Safety issues

INCIDENT COMMAND POST

The Cottonville Fire was the first incident over 1,000 acres since the late 1980's. This incident management team was deployed and operational within the first hour of the incident. There are several communication related issues that occurred that need to be addressed and strategies and recommendations developed to mitigate for future incidents.

Radio communication from the structural branch to fire department boss was conducted on "low band radios", which have significantly higher power requirements than VHF "high band" radios. These radios should be direct-wired to a power supply from the engine (as opposed to a cigar lighter power supply) to provide for communications with the ICP and alleviate critical problems during the incident.

Recommendations:

- ✓ Dedicated FDB vehicles need to be equipped with properly installed communications equipment.
- ✓ Weather reports/updates need to be communicated to the field from the ICP when received from dispatch.
- ✓ Have additional phone lines planned with the local telephone company to provide at least six hard line phones for each preplanned ICP statewide. Options may include satellite phones if available.

COMMAND CENTER

The Forestry Command Center was activated for two fires on this day. As with most activities that are not utilized often or frequent training opportunities utilized to keep proficient, there are issues that arise that the program needs to address.



Recommendations:

- ✓ The Command Center needs to better coordinate communications. (See additional comments in Organization).
- ✓ During IMT training sessions, more emphasis should be placed on the Incident Action Plan, to provide a better planning tool for additional resource needs.
- ✓ During incident management team evaluation exercises, Forestry Command Center activation should be requested as part of the exercise, and at least annually the Command Center should have a practical exercise in conjunction with an IMT evaluation.

RADIO

Radio communication problems and issues on the Cottonville Fire were identified as a critical issue that we need to address as a program. Radio communications are a critical link in the safety net for personnel involved in forest fire suppression efforts. One incident involved a radio failure in the left group. (See additional comments in Wildland Fire Suppression).

As mentioned before, the structural branch experienced radio communication problems very early in the fire. Low band radios failed, the repeated MARC channel did not function adequately, and they finally settled on the county fire frequency.

It was noted that the Wisconsin Rapids Dispatch Group had programmed their radios with a “project” fire group, which helped those area resources with common frequency grouping. Incoming resources, out of area, did not have the same configuration and were forced to find a group that would work for them.

Recommendations:

- ✓ Since Peltors are approaching ten years of age, it is time to research the potential for better headsets and to establish an operational life and a rotational cycle for them. Division of Forestry
- ✓ Replace all existing Peltor headsets by spring of 2007. Division of Forestry
- ✓ Every operator’s Peltor headset should be tested with morning radio checks.
- ✓ Replacement schedule should be developed for the Peltor headset’s life span.
- ✓ Portable and mobile radios need to have at least one “project fire” group standardized statewide and shared with cooperators.
- ✓ Emergency firefighters utilized the cascaded portable radios (old Kings), and the Bureau should consider the replacement of these.
- ✓ Low band radios, when used, must be hard wired to the vehicle’s battery or other direct power supply to avoid radio failure.
- ✓ During IMT training sessions, every section chief and selected others should be taught how to reset the breaker on a portable repeater.

GENERAL


Recommendations:

- ✓ During an incident, when communication problems/issues are identified, mitigation strategies to address these problems need to be developed.
- ✓ Satellite phones should be evaluated to find an easy-to-use and functional product during Wisconsin fires. The satellite phone the area did have was not used.

WILDLAND FIRE SUPPRESSION

The ground based wildland fire suppression effort was primarily a flanking action using tractor plow units in a direct attack mode with burnout followed by various resources to hold the line. Line construction groups were formed to construct the initial line along both the left and right flanks with divisions formed behind the groups to hold, reinforce, and mop-up the fire's perimeter. Firefighters encountered intense fire behavior conditions with rapid spread rates with crowning and spotting. Air operations were provided to observe and support line construction efforts. The fire was contained during the evening of the first burning period after making a run of seven miles and was up to 1-1/2 mile wide through highly volatile pine timber types.

Positives – Wildland Fire Suppression:

- The Initial attack IC's initial order for resources was outstanding, with a total of eight heavy units, two heavy dozers, four rangers and a SEAT placed within the first 13 minutes. Clarity of resource ordering was excellent (e. g., "I need four more heavy units for a total of eight"). This early ordering of suppression resources was instrumental in allowing for an appropriate response to a rapidly escalating incident.
 - Early recognition of the project fire potential, including notification of the Area Forestry Leader, selection of an incident command post location, and ordering of the incident management team within the first 15 minutes.
 - Assignment of first three tractor-plows to the right flank was appropriate. A Right Group Supervisor was immediately assigned. The first two tractors were assigned to plow line and the third to widen the canopy gap. Tractors were kept together.
 - Burning out the line was performed in conjunction with line construction. Emergency firefighters were used effectively to actually burn out or carry spare drip torches. Emergency firefighters were rotated to provide relief and keep a "fresh" person on the torch at all times. Although fire line personnel encountered increased fire intensity due to burn out operations they were able to maintain LCES at all times and ensure holdable line.
- 
- Use of Garmin Map 76S GPS unit by the Right Group Supervisor was excellent and provided much valuable information to assist with effective line construction and navigation around barriers. A Garmin GPS unit was used effectively to identify location of resources in relation to obstacles such as streams. Resources easily navigated around these barriers. Line was tied into streams, burned out and held prior to moving forward.
 - Use of face-to-face briefings upon assignment of resources addressing incident objectives, communications frequencies, and safety.
 - Attention to safety and maintenance of situational awareness by line personnel who encountered intense fire behavior, spotting, and breakouts, as well as other hazards including venting propane tanks, and burning structures.
 - Division/Group supervisors continually assessed fire behavior conditions and paced line construction efforts to ensure the safety of their personnel. Resources were held back along the right flank during a temporary wind shift while the fire was making a major crowning run, which pushed the right flank 1,100 ft east, south of Chicago Ave.
 - Several agency mechanics were assigned to this incident to support and repair suppression resources. A number of minor breakdowns occurred throughout this fire, but the majority of resources were able to be field repaired and placed back into service after short delays.

Issues – Wildland Fire Suppression

USE OF EMERGENCY FIREFIGHTERS

The first four heavy units that arrived on scene for initial attack did not have emergency firefighters. Had these units been fully staffed with emergency firefighters four additional trained firefighters would have been available to operate Type 4 engines, burn out and/or hold line.

The emergency firefighters that were at the fire were used to burn out line and were not available to operate DNR engines. Type 4 engines were not used in any significant manner on this fire.

Broadly, many difficulties arose from the lack of emergency firefighters. Burning out the line, patrolling established line and operating Type 4 and Type 7 engines are some of the roles that have been filled in the past by emergency firefighters. But in the current climate, temporary, day-to-day employment is not sufficient to attract an adequate force of emergency firefighters to fill these roles. These emergency firefighters need to be prepared for, equipped, and trained in burnout operations and engine operation.

Recommendation:

- ✓ Pursue a budget initiative to expand the number of seasonal emergency firefighters, increase rates of pay, and expand training and qualifications to improve availability and use of trained firefighters throughout organized protection areas.

HEAVY DOZERS

The DNR heavy dozer assigned to the WCR was not available at the outset of this fire. This unit had been released from fire duty and reassigned to habitat operations several days prior to this fire. On the morning of this fire the Area Forestry Leader did request this unit to be made available for fire operations by the upcoming weekend. The difficulty of effectively sharing an initial attack dozer between programs was highlighted during this fire. These units are needed to enhance control lines and facilitate the use of engines in line holding efforts.

A number of private dozers were utilized. However, some operators lacked training, some dozers lacked lights for night operations and some operators were not equipped with PPE. Friendship station has a dozer PPE kit available which is provided to private dozer operators at the beginning of each fire season.



Recommendation:

- ✓ One forestry heavy dozer dedicated to fire control operations needs to be permanently staffed and readily available in each LOP 1 protection area.
- ✓ Private dozer operators need to be trained and equipped with full PPE, including nomex, gloves, hard hats, eye protection, fire shelters and portable radios. Dozers need to be equipped for night operations, including lights.

RADIO IDENTIFIERS

A number of incident personnel reported problems with the radio terminology used to identify division supervisors. (See additional comments in Communications).

Recommendation:

- ✓ Use a phonetic alphabet during all radio communications.

LINE CONSTRUCTION STANDARDS

On both flanks the first two to three tractor plows were utilized to plow furrows with subsequent units utilized to open the canopy gap and then to construct drivable break. Width of firebreaks was largely determined on the ground by division/group supervisors. There were no parameters or standards established for acceptable breaks other than the standard “mineral soil”. Heavy dozers would have been valuable in enhancing breaks.

Line construction rates along the right flank started out at 90ch/hr but slowed to about half that, largely due to fuel types and fire behavior conditions. Tractors needed to hold up and/or return to catch breakouts and spot fires a number of times. At one point the entire right group was diverted to plow around a ten-acre spot fire. Line construction groups did not meet the agency standard of 80ch/hr as a result. Under certain circumstances, it may be

appropriate to “drop” a unit from the line construction group to hold line and function within a division

Recommendation:

- ✓ Recognize the agency standard of 80 chains per hour is a rule of thumb and may not be achievable in all fuel types under all fire behavior conditions. Line must be constructed in a safe manner at all times.
- ✓ Ops Chiefs, Line and Group supervisors need to establish and communicate minimum standards for width of mineral soil breaks, and width of canopy gaps for various fuel types along the flank.
- ✓ Recognize that there is a point of diminishing returns when adding more resources to a line construction group does not increase line production rates. Immediate staffing of divisions behind groups with tractor plow units and other suppression resources is critical to hold and improve line, while allowing the line construction group to move forward.
- ✓ Heavy dozers should be available and ordered early and be used to support tractor-plows, strengthen holdable line, and to increase overall production rates.

DIVISION SUPPORT BEHIND LINE CONSTRUCTION GROUPS

Division support behind the line construction groups lacked adequate resources. The B-Division supervisor was assigned approximately two miles of fireline without having any suppression resources until two hours into the fire. Several initial attack Type 7 and Type 4 engines were available at the fire origin that could have been used had there been sufficient staffing. This would have required having drivable break and engine operators available.

Recommendation:

- ✓ In all training, reinforce the need to establish divisions and immediately assign resources to hold and patrol line behind groups. Assign adequate resources to mop-up and patrol behind burnout crews. Without these resources to hold the division, groups cannot be safely utilized.

HAND CREW AVAILABILITY

Lack of hand crew availability is recognized as a problem statewide. All available state crews were used on this fire.

Recommendation:

- ✓ Continue efforts to support the training of hand crews through universities, technical colleges, and prison work crews. Utilize trained crews for initial attack and mop up on a routine basis each year. Consider ordering crews through GLFFC or NIFFC for pre-positioning during extreme fire danger conditions or in the early stages of the first operational period.

TOOL CACHES

Fire caches were not effectively used, nor were they readily available. Three hours into the fire a resource order was placed through Tomahawk for the fire cache trailer but it was learned that nothing was readily available. More than one hour after placing the order Tomahawk called to advise that there is no decent cache anymore and asking for specific needs. The cache order was canceled and a decision made to use the area fire cache instead. However, more than another hour and a half went by before a vehicle could be located to transport the fire cache from Wisconsin Rapids to the ICP.

Recommendation:

- ✓ Fire cache content and availability needs to be pre-determined in advance of fire season. As with any equipment order, clearly articulate needs when calling Tomahawk for fire cache equipment. Follow up on the fire cache study report from several years ago to determine the availability and content of both area and Tomahawk fire caches.

LEFT FLANK INITIAL LINE CONSTRUCTION AND RADIO FAILURE

The first tractor plow on the left flank plowed approximately ¹/₂ mile from the fire origin to Chicago Ave. before additional tractor-plow support or holding crews arrived. A portion of this line was lost without the operator's knowledge. During this time the "push to talk" switch failed leaving this operator without radio communications. Left Group Supervisor and air attack were unable to alert him to a break over. "Emergency Traffic" message was clearly communicated over the radio but never heard by the operator who began plowing back along his line and against the grain after he reached Chicago Ave. When this operator encountered the break over he went inside the black and returned towards the origin where he joined up with other units. The radio malfunction was identified at that time and problem mitigated by placing this unit between two other tractor-plow units.

Recommendation:

- ✓ Do not engage in line construction in pine fuel types with only one tractor-plow unit until supporting resources are in place, size-up completed, and an assignment briefing provided. The decision to begin line construction should be made only after performing a risk assessment and considering the equipment operator's experience level, fire behavior conditions, fuels, visibility, and potential for breakouts. Initial actions may include construction of a short (<100 yards) fireline with the operator doubling back and forth to widen and continually check that the line will hold before proceeding further.

LEFT GROUP TACTICS ALONG STREAM BOTTOMS:

After reaching CTH C, the left flank of the fire burned adjacent to the Roche-A-Cri creek with an incident objective established to keep the fire east of the Roche-A-Cri. The left group supervisor appropriately scouted the line then met with E-Division supervisor to determine a plan of action. They determined that it was best to keep the line construction group east of the stream and use the division to suppress any fire that crossed the stream. The line construction group proceeded north along the east bank of the Roche-A-Cri, which was found to have effectively contained most of the flanking fire. Although this technique worked for this particular fire it must be recognized that had this barrier not held the line construction group

would have found itself on the wrong side of the stream, unable to carry out its primary objective of constructing line as the fire progressed, and thus, largely ineffective.

The group also encountered some difficulty along the stream bank due to terrain and limited visibility as darkness set in. At one point approximately ¹/₂ mile of line had to be constructed against the grain south of Bighorn Ave. and at another point the group thought they were following the Roche-A-Cri when they had actually followed a feeder stream causing them to become temporarily misdirected as to their location. In at least one location, bladed line was constructed through the burned area with black on both sides with the objective of allowing drivable access for mop-up.

Recommendation:

- ✓ Include stream bottom tactics in Division/Group supervisor training and recognize conditions when it is acceptable to place line construction groups on the same side of a stream or river as the fire, as opposed to placing these resources across the river from a fire, which is often more desirable.
- ✓ Division/Group supervisors should be trained, have access to, and routinely use GPS units to navigate and track their line construction progress. The Garmin Map 76S GPS units should be standard issue and included in all line packs.

H DIVISION ROLE

Early on, the H-Division supervisor was forced to actively engage almost exclusively in performing evacuations due to the rapidly spreading fire and unavailability of adequate law enforcement resources. Under the circumstances, this was perfectly appropriate. The H-Division supervisor was familiar with the fuel types in this area and quickly recognized the futility of trying to stop the fire's forward progress. As a result, no suppression resources were assigned to the H-Division, nor was there an opportunity to make a stand to stop the fire until after the fire crossed Beaver Ave. After this point the fire behavior moderated enough to allow H-Division to order resources, make an effective stand and stop the fire's forward progress. Although the focus on evacuation was appropriate, given the number one incident objective of life safety, the design of H-Division's intended responsibility is to focus on suppression opportunities that may become available due to changes in fuel types, fire behavior or weather conditions.

Recommendation:

- ✓ Review agency guidance and training specific to the H-Division regarding agency priorities and expectations of this position, and revise as appropriate. Recognize the interaction of this position with structural and law enforcement branches, as well as the need for continual scouting ahead of the fire's path and determination of resource needs to be anticipated well in advance.

LINE CONSTRUCTION PERSONNEL ENCOUNTERING WUI HAZARDS

Division/Group supervisors and tractor plow operators encountered a number of wildland-urban interface hazards including venting LP tanks, underground power lines, utility cables, burning buildings, burning vehicles and other hazards. After dark, some difficulty was encountered locating the fireline in WUI areas after fire department units protecting buildings had knocked down visible flames. Difficulty was encountered using heavy dozers in such areas due to hazards being encountered. A number of personnel questioned the priority that should be given to line construction vs. structural protection and in some cases line construction progress was delayed in order to plow lines around threatened buildings.

Recommendations:

- ✓ Include WUI hazard identification, as well as appropriate safety and mitigation methods in training, simulations, and pre-fire season operational meetings. Provide Hazardous Materials awareness training to all first responders. Provide additional guidance on the priority between forward line construction progress vs. diverting tractor-plow resources to protect structures that are immediately threatened.

NIGHT OPERATIONS

Strobe lights on tractors, personal strobes, and reflective striping on Nomex were mentioned as highly effective and desirable to improving personal safety, especially after dark. A number of personnel who began working on this fire in the early afternoon were unprepared for continued operations after nightfall. Shortage of clamshells, batteries, and headlamps were evident and had to be ordered. Line location in WUI areas and along stream banks was challenging. Snag hazards were encountered, communicated and addressed. Some resources that had been ordered for night operations had to be immediately placed on the fireline earlier than

anticipated since the fire had not yet been contained. Complete transition to night shift operations was lengthy, with the decision to transition two divisions at a time with briefings taking place in the field.

Recommendations:

- ✓ All fireline personnel should be self-prepared and equipped for functioning over an entire operational period including into the first evening, including food and water. Fire caches should contain extra supplies including headlamps and batteries for extended attack operations. The occurrence of transition to night shift operations needs to be clearly identified and communicated to all incident personnel.

LINE CONSTRUCTION GROUP PREPAREDNESS

Personnel on both the right and left groups were on foot the entire seven-mile length of the fire for over a ten-hour period. A number of personnel stated that they were pushed to their limits. At least one firefighter working on a burnout crew had to be released from the fireline due to foot irritations. The Operations Chief's intent on this fire was to continue line construction group operations until the fire was contained. With respect to personnel safety and line construction group effectiveness, there is a need to define expectations regarding length of assignment for group supervisors, burnout crews and tractor-plow operators.

Recommendations:

- ✓ Group leaders must be aware of the capability and limitations of their resources to go the distance. IMTs must set reasonable expectations for duration of assignment and must plan ahead to rotate personnel before fatigue or injury results. Ultimately, the agency needs to adopt work-rest guidelines.
- ✓ All division/group supervisors should have line packs readily available at all times and need to be prepared for extended operations away from the truck. Develop agency standards for line packs to include drinking water, first aid kits, extra batteries for portable radios and GPS units, clam shells, personal strobes, headlamps, etc.
- ✓ Implement the agency physical fitness proposal without delay.
- ✓ Adopt the concept of periodic rehabilitation for DNR firefighters.

MECHANICAL PROBLEMS WITH FIRE SUPPRESSION EQUIPMENT

A number of minor equipment failures were encountered throughout the fire, none of which compromised safety or significantly hampered overall suppression operations. These included a broken radiator hose, broken plow pin, broken plow beam, stuck exhaust flapper, failed starter, failed water pump, and a broken mold board, all on tractor-plow units. The LeMay center Superintendent was working with H-Division and was diverted several times to make field repairs. Several mechanics and an equipment fabricator from Friendship, Black River Falls and Tomahawk were ordered and available at ICP. The Tomahawk shop truck, supplied with additional plows and repair parts was ordered, although it took several hours to get this unit on the road after being requested. Timely repairs or replacements were made on most units, which could be placed back into service after short delays. One tractor-plow unit had to be taken out of service for the day after plowing approximately one mile due to a broken radiator hose. A John Deere replacement hose could not be found and the mechanic would not install a non-genuine replacement part.



Recommendations:

- ✓ Anticipate equipment breakdowns and order resources accordingly. Agency mechanics should be prepared and equipped to perform field repairs and should have common replacement parts readily available. Suitable replacement parts should be considered for temporary installation when practical and a name brand part cannot be readily located.
- ✓ The LeMay Center shop truck should be equipped with common replacement parts and ready for dispatch in a timely manner during fire season. LeMay Center should communicate the availability and qualifications of their personnel to the field in order to improve communications and expectations.
- ✓ A mechanic should be available for immediate dispatch to an incident of this proportion during acute fire weather.

STRUCTURAL PROTECTION

Fire department resources provided critical structural protection to the residences, outbuildings, and other improvements threatened by the Cottonville Fire. In less than five hours, this fire burned across more than 3000 acres in three rural townships in Adams County with a total estimated population of over 2400 (Town of Preston – 1360, Town of Big Flats – 946, and Town of Colburn – 181). This land use and residential development pattern is common across large areas of central as well as northern Wisconsin.

Although structural involvement was initially limited during the first hour of this fire, more than 100 residential buildings in a sub-division (Trout Valley) located 2.5-3.0 miles down wind of the fire path were given high consideration as fire department resources were deployed early in this incident. Geography, a wind shift, and suppression efforts helped protect this sub-division.

But by the time control was achieved after a fire run of nearly seven miles in five hours, this forest fire would directly threaten almost 400 structures. The greatest structural involvement on this fire occurred during the second and third hour as the fire grew in size and progressed into more residential areas within the Town of Big Flats.

A post-fire assessment by fire department personnel determined that 30 residential structures were destroyed (9 permanent & 21 seasonal), 60 out buildings were destroyed, 15 structures damaged, and a number of vehicles damaged. The Structural Branch estimated that approximately 300 homes were saved within the 19 structural zones formally established during this fire.

Only two fire departments (Adams Fire District and Big Flats Fire District) were initially dispatched to this fire, which was reported as a structural fire. But eventually apparatus, fire fighters, and officers from 19 fire departments from Adams, Juneau, Portage, and Wood Counties responded to support structural suppression actions. These same fire departments also provided personnel to staff the Structural Branch positions within the Incident Command Post (ICP) at the Big Flats Town Hall.

Table 1 provides a cumulative summary by fire time of the fire department resources, number of zones established, and structures involved within the fire perimeter, as well as within all 19 structural zones established.

Table 1 - Cottonville Fire - Structural Protection Resources

May 5, 2005
(cumulative totals by fire time)

FIRE TIME	FD ARRIVAL	ZONES ESTABLISHED	PARCELS W/FIRE¹	PARCELS W/ZONE²	FD APPARATUS	FD PERSONNEL
1 st hour	4	1	20	30	20	47
2 nd hour	5	6	53	143	26	70
3 rd hour	9	9	81	185	36	115
4 th hour	11	13	96	239	41	127
5 th hour	19	19	101	317	62	180

Data source: Steve Coffin, WDNR Wisconsin Rapids Forestry Team Leader 8/2005.

¹Number of parcels with structures within the fire perimeter.

²Number of parcels with structures in zones all or partly in the fire perimeter.

Early in the timeline of this fire, fire department resources were limited. But even with the modest resources available, the organization of the Cottonville Fire Structural Branch section developed early and was adequately staffed to support this wildland fire. Early action by Division of Forestry Team Leaders to anticipate and to activate development of the Structural Branch component of the Wisconsin Rapids Area IMT was key to the relatively rapid staffing of this structural organization. Also key to this effort was the availability of fire department officers trained not only in ICS, but also in specific roles in Operations within the Structural Branch section.

The Friendship Forestry Team leader initiated early contact with the Big Flats Fire Chief at the fire origin and assisted with discussions that led to the assignment of the Big Flats Fire Chief as the Fire Department Boss (FDB). The Chief joined

the Team Leader to gain an early assessment of the fire development and potential structural protection needs.

And after helping deploy Structural Branch resources at the ICP, the Wisconsin Rapids Forestry Team Leader recruited both a vehicle as well as support staff to operate the FDB vehicle. Within 70 minutes of the fire origin, a FDB vehicle was on scene and initiated operations to establish zones with assigned fire department resources as well as to coordinate suppression tactics. The Big Flats Fire Chief eventually joined the small team in the FDB vehicle and coordinated the assignment of resources to zones on the fire ground. Three zones (Old Dump, Backlash, and Jasmine) were established within 87 minutes along with two water fill sites (Big Flats Town Hall and 6th Ave & CTH C).

The Fire Department Boss position was supported as follows:

1 Fire Department Boss	=>	local Fire Department Officer
1 WDNR FDB liaison	=>	local WDNR Team Leader
1 Radio operator	=>	local fire department member
1 FDB van driver	=>	local fire department member
Rome Fire Department Heavy Rescue and Command Vehicle Board mounted low-band radio		

Structural Branch Section was activated within 45 minutes after start of this fire and rapidly added staff to support the FDB team. The Structural Branch team was supported in the Incident Command Post by the following resources:

1 Structural Branch Director	=>	local Fire Department Officer
1 Log Recorder	=>	local Fire Department Officer
1 Radio Operator	=>	local Fire Department Officer
1 Resource locator	=>	local Fire Department Officer
1 Assignment Manager	=>	local Fire Department Officer (ret.)
2 SBD runner/helpers	=>	local fire department members

Structural Branch kit from the WDNR Wisconsin Rapids IMT Trailer

These two teams operated with these resources for the duration of this fire.

The following section reviews key issues that contributed to the success or reveals opportunities for improvement of the structural branch operations on this fire. These issues were developed from statements offered at the fire department review held on June 28th, the WDNR Cottonville fire review on July 28th, or from narratives submitted by fire department and agency resources assigned to this fire.

Positives – Structural Protection

The Wisconsin Rapids Area Dispatch Group is commended for the following major successes -

- ▶ The heavy investment of team resources in fire department training.
- ▶ The advanced work done by the Wisconsin Rapids and other Dispatch Groups to develop pre-designated structural zone maps for high fire risk areas.
- ▶ The work done by the Structural Branch Team to recruit initial attack coverage for structural fire protection to fill in behind fire departments committed to the Cottonville Fire.
- ▶ The Structural Branch for this innovation of rest & recovery for structural fire fighters.
- ▶ The investment of “In the Black” training provided by the Wisconsin Rapids DG Team.
- ▶ The innovation of the structural branch team to resolve a radio communication problem.

Structural Protection – Pre-Planning and Training

In general, all fire departments included in the debriefing strongly endorsed the value of wildland pre-suppression training. In particular, they valued the advanced level training provided by the Division of Forestry employees in Incident Command System, wildland tactics, and communications. A prime example of the training was the 2001 Mock fire exercise sponsored by the Department in this proximate location that clearly provided development of structural branch team experience and confidence. Additional comments offered both during the structural fire debriefing, as well as by written statements reinforce that fire department training has been a strong focus of the Wisconsin Rapids Dispatch Groups core work and significant effort has been consistently invested in fire department training. Fire departments recognize the value of training and have actively participated in this formal training.

IMPORTANCE OF DNR INVOLVEMENT WITH PROVIDING TRAINING TO FIRE DEPARTMENTS

As the density of Wildland Urban Interface in Wisconsin increases and the Division of Forestry continues to rely on local fire departments for structural protection, the role to provide training for local fire departments will remain critical to ongoing protection of resources in Wisconsin. Some basic training

may be provided through other educational agencies, but regular organizational and tactical training events, as well as simulation exercises provided by Area DG and local FRU team members should be strongly supported by the Division.

The Wisconsin Rapids Area has developed and implemented a formal Training Guide for Fire Departments within this Area. This training plan outlined a progressive sequence of course work, simulations, and practical exercises to improve organizational and tactical readiness of local fire departments. This plan not only provides the opportunity to maintain currency in Wisconsin forest fire tactical methods but also fortifies ongoing trust building between local fire departments and local WDNR FRU team members. This training plan included a mock fire exercise which was conducted within the Town of Big Flats in 2001, and which offered fire and emergency response agencies the opportunity to practice the activation of resources under an incident command system for a large forest fire in the Friendship FRU. The regular turnover of both fire department and WDNR personnel requires that the Dispatch Group maintain a commitment to a frequent cycle of structural fire training activities outlined on this FD Training Guide. The growth of the wildland urban interface across the state will increase fire department interest and importance for participation in this training for all dispatch groups.

Recommendation:

- ✓ Emphasize and support commitment of WDNR resources to forest fire readiness training for all of Wisconsin’s rural fire departments and encourage each Dispatch Group to develop a formal Fire Department Training plan. Share the Wisconsin Rapids Dispatch Group Fire Department Training Plan with all Area Forestry Leaders and staff as a working template.

VALUE OF STRUCTURAL BRANCH SECTION TEAM TRAINING

Members of the structural branch section reinforced the value of the training and simulation exercises that brought members of several different fire departments together to train as a unit. This provided a core group of fire department officers and members who have worked together in a variety of roles. Members are familiar with their counterparts and have the experience to substitute into different roles within the structural branch. An interesting observation that reinforces this

team approach is the fact that fire department officers from Adams, Portage, and Wood Counties readily formed the Structural Branch Team on the Cottonville Fire.

Recommendation:

- ✓ Encourage the formation and group training of structural branch teams using countywide or multi-county fire department members to fill a variety of roles for this section. Team members should have opportunities to cross-train for several roles in the structural branch team to provide flexibility in SB team roles.

VALUE OF PRE-DESIGNATED STRUCTURAL ZONE MAPS

Zone bosses, the FDB, and the Structural Branch team all reinforced the value of having a paper map of the pre-designated structural zones for this incident. A supply of current zone maps (produced 2/2005 and distributed spring, 2005) available for use on the fire grounds as well as within the ICP was vital to both strategic as well as tactical level suppression planning. These maps saved time, provided a consistent base map to plan and coordinate suppression resources, and aided navigation for non-local FDs.

Recommendations:

- ✓ Support development of a statewide timeline to complete structural mapping in high risk WUI areas within Wisconsin’s Intensive and Extensive Protection Areas.
- ✓ Give priority for structural mapping projects within the Division’s Hazard Mitigation Project Funding and seek cooperative efforts with local and county agencies.
- ✓ Establish minimum standards to provide statewide consistency for structural zone maps.

FIRE DEPARTMENT BOSS VEHICLE

The FDB vehicle used on this fire was a heavy rescue and command vehicle recruited for this purpose from a local fire department. The vehicle was large enough to accommodate the FDB team, was equipped with a command compartment with a work table, and was equipped with an on-board generator, but offered limited maneuverability and restricted communication capabilities. There were communications problems with the low band radio (See additional comments in Communications). There is no dedicated FDB vehicle within the Wisconsin Rapids DG outfitted with radios or other equipment

needed to support the FDB functions. Most other dispatch groups across the state also lack a dedicated FDB vehicle readily available for to support the FDB team.

Recommendation:

- ✓ Encourage a consistent statewide standard for a dedicated FDB vehicle with proper communications and support the operation /equipping of such vehicles through the fire department grant process.

ORDERING OF FIRE DEPARTMENT APPARATUS COMBINATIONS

Specific fire apparatus and combinations of apparatus appeared to be more effective in use on the “In the Black” tactics. The desired combination or task force of fire department apparatus for structural zone protection appears to be an engine, a pump-on-the-run tanker, and a brush truck. Maneuverability and ability to pump on the run were important features repeatedly noted by the responding fire departments. Attempts should be made to keep task force combinations from single fire departments intact for the duration of the fire operational period.

Recommendation:

- ✓ Reinforce the standardization of a fire department task force concept for structural zone operations. Include training on the formation and deployment of task force combinations to support structural zone operations when using “In the Black” tactics.

AWARENESS OF STRUCTURAL ZONE ORIENTATION TO PROJECTED FIRE PATH WHICH INFLUENCES THE PLANNING OF ZONE RESOURCES AND WHERE TO STAGE RESOURCES TO ENTER ZONES AFTER FIRE FRONT PASSAGE

The path of this fire across zones had a direct impact on the number of apparatus required to provide prompt action on structures. In several instances, the zones aligned parallel to the direction of the head fire and allowed fire departments to follow the flaming front to sequentially take action on structures. In several other instances, the head fire entered a zone on a broadside, which created a high demand for simultaneous action to many of the structures. Thus orientation of zones in relation to fire direction has significant influence on the size of resources that should be assigned to a zone.

Recommendation:

- ✓ Emphasize structural branch awareness of zone orientation vs. fire direction when assigning resources to designated zones.

USE OF ZONE BOSS PACKETS

The Wisconsin Rapids DG IMT trailer carried a supply of Zone Boss packets within the structural branch kit but this supply was not discovered till late in this fire. These packets provided maps, resource tracking aids, and summary of tactical methods to consider that would have been useful in preparing zone bosses for deployment.

Recommendation:

- ✓ Develop awareness and training procedures to assure use of zone boss packets. Examine the possibility of carrying a supply of these packets in the designated FDB vehicle within each DG.

TRIAGE DECISIONS FOR STRUCTURES AND DECIDING WHEN TO ENTER STRUCTURES TO SUPPRESS FIRE INVOLVED BUILDINGS

Fire Department personnel did conduct structural triage as they deployed resources during this fire. Previous training offered by the Department did provide guidance on building assessment, defensible space, apparatus access, and fire fighter safety, which helped zone bosses decide when and where to dedicate fire resources during this fire. It appears that guidance was used appropriately.

Recommendation:

- ✓ Continue to provide structural triage for forest fire situations as a routine element of fire department training.

WILDLAND PPE VS. STRUCTURAL PPE FOR FIRE DEPARTMENT RESOURCES

Some fire departments provide only conventional structural personal protective equipment to their firefighters. Since structural PPE is heavier, continued use leads to premature firefighter fatigue or forces firefighters to compromise safety by shedding this bunker gear protection during protracted wildfire operations.

Recommendation:

- ✓ Continue to encourage fire departments to equip their firefighters with wildland PPE through the FD grant program and carry this PPE when seasonally appropriate.

PRIVATE DRIVEWAY INGRESS/EGRESS FOR FIRE APPARATUS

Narrow and long driveways with soft surfaces caused some access challenges for fire departments operating within their assigned zones. A stronger and more uniform driveway policy with routine inspections would help support improved protection of structures relying on these driveways, as well as improve firefighter safety for apparatus attempting to protect structures.

Recommendation:

- ✓ Continue support for local efforts to implement countywide zoning ordinances that lead to minimum driveways standards which will improve access for emergency vehicles, for firefighter safety, and for protection of structures. Seek interest from Wisconsin's insurance industry to also support this effort. Other standards may be appropriate to incorporate in such ordinances, as well.

CONFUSION OF LOCAL ROAD NAMES

Road names within this fire led to some confusion in locating structures and zones. Similarity of road names and difficulty in understanding directions, especially for out-of-area personnel, reduced fire department efficiencies. Using similar names such as Brown Deer Avenue and Brown Deer Court provided the opportunity for confusion.

Recommendation:

- ✓ Prior to deployment, out of county emergency personnel need to be briefed on local road naming protocol to avoid confusion and response delays. Structural maps could also assist with explaining local road naming protocols.

Structural Branch – Tactical Operations

RECOGNITION BY THE STRUCTURAL BRANCH TEAM TO MANAGE THE “BACK FILLING” OF EMPTY STRUCTURAL FIRE HOME STATIONS

As the Cottonville Structural Branch team reacted to the requests to supply fire department resources to the structural needs of this wild fire, they also accepted the responsibility to arrange for “backfilling” of depleted fire stations by recruiting mutual aid coverage for fire departments assisting on this wildfire.

Recommendations:

- ✓ Include “backfilling” considerations when planning simulation training for structural branch teams. Also, develop a fire department resource directory for a multi-county area that can be used as a reference to order resources for mutual aid for structural suppression on wildfires as well as for “back filling” for fire departments that have exhausted local resources.

FIREFIGHTER “R & R”

The Structural Branch Team recognized the physical strain and related safety impacts resulting from an extended operation by firefighters. In response, an organized rotation of rest and recovery (R&R) was developed to allow firefighting units in the zones to come to the ICP for food, drinks, and other relief. In past practices, food and drinks were often sent out to drop off points on the fire hoping that all firefighters would eventually have access to such resources but on this fire, firefighters were brought back to one location to refresh body, mind, and equipment. After a 30-45 minute “rehabilitation” at the ICP, these units would be reassigned back to pre-R&R zones to continue patrol and mop up operations. Note that the R & R station should be separated from the ICP to avoid noise and commotion generated by this effort.

Recommendations:

- ✓ Incorporate the R & R for structural firefighters as a part of Structural Branch section training. Give consideration to initiating R & R on large forest fires earlier in the first operational period, perhaps starting the rotation within the first four hours.
- ✓ As fire departments complete their rotation for R & R, attempt to reassign the same fire department(s) units back to the zone that they were patrolling. This will provide efficiencies by allowing fire fighters familiar with a zone to resume work by focusing on what remains to be overhauled and not starting work in an unfamiliar zone.

USE OF “IN THE BLACK” TACTICS IN STRUCTURAL ZONES

This fire marks the first large-scale tactical deployment of “In the Black” (ITB) structural suppression tactics in Wisconsin. An early decision was made by the FDB team to direct all fire departments responding to this fire to apply suppression efforts only after passage of the head fire within specific assigned zones.

This tactic was uniformly accepted and applied by most fire departments and appears to have provided a significant increase in safety for fire fighters working to protect structures. The apparent ease of implementation of this tactic suggests that advanced training on this tactic provided by the Wisconsin Rapids DG provided adequate instruction to allow safe and effective use. Fire department resources remained committed to this tactic for the duration of this fire.

This fire also provided some real time measures of fire department production rates under the ITB system as well as the ability of fire departments to sustain this tactic. Average time for entry after the passage of the initial flaming front was generally estimated at 5-10 minutes by many fire fighters. Observations by fire fighters using this tactic confirmed that most structures were able to survive the initial flaming front but remained at risk to fire contact from the second front of ground fires burning fuels immediately adjacent to buildings. Such experiences can help train fire departments to improve detection criteria and build effective fire prone property guidance for property owners.

The success of ITB tactics suggests that new fire detection technologies should be tested to determine if they could speed up fire department assessment of fire ignition on structures that survive the passage of the flaming front. Devices such as heat sensors, IR cameras, or other devices may allow fire departments to more efficiently screen buildings for hidden fire and help determine when additional overhaul is needed.

ITB tactics versus pre-treatment requires a tradeoff in fire department resources available for evacuation. This forces the ICS Operations team to balance the need for post flaming front structural suppression against the need for citizen evacuation and pre-treatment tactical deployment ahead of the flaming front. These two competing needs for fire department resources require unified decision making between structural branch, wildfire operations branch, and the LE branch, which is responsible for evacuation.

Recommendations:

- ✓ Provide additional training on “In the Black” tactics to fire departments. Provide guidance to zone bosses to help recognize the difference between the head fire flaming front and the lateral, flanking fire. This could be addressed during fire behavior

training. The intent would be to provide fire departments with simple criteria to identify when to safely enter zones and not delay entry too long for ITB tactics. Also develop a list of “at risk” structural features that can help fire departments efficiently screen buildings as they inspect structures immediately behind the flaming front.

- ✓ Research, purchase, test, and help support fire technology that can assist fire departments to improve efficient deployment of “In the Black” tactics, as well as help screen structures for hotspots that if not detected, would rekindle and risk loss of a “saved” structure. Consider including such technology in the fire department grant priorities.
- ✓ Research and establish guidelines to determine the minimum period to maintain active surveillance for delayed ignition in structures after passage of the flaming front. These guidelines are needed to help plan fire department staffing needs for post-fire surveillance into extended operational periods. More importantly, these guidelines will help determine when citizen reoccupation of “saved” structures is secure. This effort will help reduce the risk of premature reentry of citizens into residential structures.

AWARENESS OF SPECIAL HAZARDS WHEN USING “IN THE BLACK” TACTIC

ITB tactics reduce exposure to serious fire conditions but do require fire fighters to operate in smoky conditions with poor visibility, hot and pressurized LP tanks, compromised utility lines and power pedestals, snags, and combustion of a variety of chemical products stored in outbuildings. These conditions require a heightened awareness.

Recommendation:

- ✓ Post flaming front hazard awareness training should be included in the ITB training package.

ADEQUACY OF WATER SUPPLY SITES FOR STRUCTURAL PROTECTION

Two water refill sites were established for fire department apparatus working this fire. These two water sites appeared to be sufficient to handle the water needs but may not have been adequate if additional structural involvement occurred. The rate of water consumption at each structure varied but an average of at least 500 gallons of water was used at each structural deployment in the zones. This level of water use reflects a more

moderate water consumption level than was previously suggested, based on pre-treatment tactics. This rate of water use will influence the pace of structural protection within zones, the number of apparatus needed in each zone, and the planning for pump capacity to provide water during a fire with significant structural involvement.

Recommendation:

- ✓ Provide training to structural branch teams to help them forecast water needs for ITB tactics and locate secure water sites.

Structural Protection - Communications

ZONE COMMUNICATIONS AND INTEROPERABILITY OF COMMON TACTICAL RADIO FREQUENCIES

Common radio frequencies are needed on large incidents to support a communications network for multiple emergency response agencies. The small number of common radio frequencies shared between local fire departments hampered communications within zones between units from different fire departments. Additional simplex (truck to truck) frequencies such as the WISTAC frequencies should be installed to help reduce radio congestion on FIRECOM or other local county simplex frequencies and allow fire departments from neighboring counties to communicate.

Recommendation:

- ✓ Encourage the addition and/or installation of 3-5 new statewide simplex frequencies to improve communication on common radio frequencies among fire departments from adjoining counties working on large mutual aid incidents such as a forest fire.

STRUCTURAL BRANCH TO FDB RADIO COMMUNICATIONS

The board mounted low band frequency radio experienced technical failure early in this fire. (See additional comments in Communications).

Recommendations:

- ✓ Resolve technical issues with maintaining dependable low band communications, testing equipment prior to and during fire season.

COMMUNICATIONS TO INFORM STRUCTURAL TEAMS OF AERIAL SUPPRESSION EFFORTS

A number of fire department personnel reported that they were “washed” by water, foam, or retardant drops from aerial tanker operations. Aerial suppression actions on the Cottonville Fire did occur but regular communications to fire departments providing advance notice of aerial suppression events was lacking. Many of the drops were not communicated to fire departments working in zones on structural protection. These drops surprised fire department personnel since advanced notice of these drops was not provided to structural or wildland fire fighters working on ground suppression actions. Consistent use of roof top identifiers for structural apparatus will help aerial resources confirm location and identity of ground resources.

Recommendation:

- ✓ Provide advanced notice of aerial suppression actions through Structural Branch section to fire department personnel working in zones. Determine the communication path needed to inform fire department resources of aerial suppression efforts and incorporate this communication issue in future IMT and fire department training exercises. Reinforce use of roof top identifiers for FD apparatus.

Structural Branch - Organization

UTILIZATION OF DNR TYPE 4 ENGINES FOR STRUCTURAL PROTECTION RESOURCES

Most of the DNR Type 4 engines remained unused after the tractor plow units were deployed to line construction groups or division assignments. These Type 4 engines could be deployed for structural protection, for initial attack, patrol in cold zones, or pre-treatment in advanced zones. Since the assigned driver for these units is typically the tractor-plow operator, a trained force of “seasonally” available operators must be developed. LTEs and/or fire department members could be trained as operators. With trained operators, these Type 4 engines should become apparatus that are routinely assigned to support zones or other assignments on large forest fires.

Recommendation:

- ✓ Identify LTEs and fire department members as potential engine operators. Conduct routine training with these operators to develop familiarity with operation of these Type 4 engines and certified designated

operators. Fortify the fiscal and organizational support for more maintaining a core of trained, experienced LTEs targeted to support Wisconsin’s forest fire suppression program.

ROLE OF FIRE DEPARTMENTS IN POST- INITIAL ATTACK OPERATIONAL PERIODS

Fire departments assigned to zones understood their assignment to suppress fire and conduct overhaul actions around structures. But diligence to this task and maintaining resources committed to routine patrol after suppression and overhaul diminished rapidly as fire departments searched for more urgent assignments. A number of “hold over” fires were discovered adjacent to structures in the first, second and third operational periods. If left undetected, these could lead to loss of the structure and/or threat to occupants who have reoccupied these structures.

Recommendation:

- ✓ Investigate the need for extended patrol in “cold zone” using fire department resources. Establish acceptable standards on when to release “cold zone” patrol and allow citizen reentry. Investigate use of out-of-area fire departments or other agencies to sustain “cold zone” patrol past initial operational periods.

ASSESSMENT AND DOCUMENTATION OF STRUCTURAL DAMAGE

Assessments of structural damage, loss, and threat were completed independently both by the structural branch section and by the American Red Cross team on this fire. These two assessments generated different estimates of buildings lost, damaged, threatened, saved, or not involved. This inconsistency of the two assessment systems should be resolved. Consolidation of the post fire assessments would provide efficiencies in conducting the assessments, offer improved confidence in the information collected, limit discrepancies, and offer consistency of use across the state.

Recommendation:

- ✓ Explore the opportunity to develop a mutually agreeable structural damage assessment system that can be consistently applied across Wisconsin. Establish structural assessment criteria, a field collection worksheet, identify the who, when, and how of conducting this assessment, and incorporate into DNR, fire department, and external partner training exercises.

AIR OPERATIONS

The most extensive use of aircraft in Wisconsin forest fire history occurred on the Cottonville fire.

Initial attack aerial resources consisted of a DNR fixed wing aircraft operating as air attack and a contracted Single Engine Air Tanker (SEAT), a Dromadier. Both aircraft were based at the Necedah Ranger Station (approximately 15 air miles from the origin) when the fire was reported. A second DNR plane was called in for additional support, and late in the day a third DNR plane was brought in to standby at the Wisconsin Rapids airport. A second SEAT, an Air Tractor 802, based at Black River Falls, and a CL-215 air tanker with lead plane from Minnesota were ordered within the first hour of the fire. Hence, at the peak of air operations, six fixed wing aircraft operated over the Cottonville Incident at one time.

The initial SEAT load delivered by the Dromadier was foam and thereafter retardant was used until the fill site was changed to Friendship. All loads from the Friendship airport thereafter were foam. The Air Tractor SEAT filled at Necedah and all loads were retardant.

Response time for the Minnesota CL-215 was approximately two hours.

The initial attack DNR plane operated as air attack, providing direction for early SEAT drops, giving intelligence information to initial attack ground forces and acting as a lookout for resources assigned to the left and right groups. When the second DNR aircraft arrived over the scene, he was assigned to direct all air tankers and to provide intelligence information to the situation unit leader at the Big Flats Incident Command Post (ICP). The initial attack DNR plane then stayed at a lower altitude to provide information on fire behavior, fire progression and breakouts to the left and right Group Supervisors.

Initial SEAT drops were directed on the head of the fire but proved ineffective. Thereafter, drops were utilized for flank support and structural protection.

After a determination by air attack that the CL-215 drops would be ineffective on the head fire, it was also assigned to work structural protection and flank support.

Later in the day, as fire intensity decreased, the CL-215 was utilized by H division to support ground resources to slow and control the head of the fire.

Positives

- ▶ Both DNR aircraft and the SEAT were ordered promptly by the initial attack IC and dispatched quickly. The IC recognized air resources would be critical and ordered accordingly. The DNR aircraft had the smoke in sight less than five minutes after the fire was reported. The SEAT was in the air with the Cottonville smoke in sight in only eight minutes. There was early recognition that a heavy air tanker would be appropriate and the Minnesota CL 215 was ordered within the first hour after ignition.
- ▶ A second DNR aircraft in Madison had been placed on standby for project fire duty. This had been pre-arranged earlier that morning between the Region and the Central Office. There was early recognition by the initial attack IC that the fire would quickly stretch the capabilities of one DNR aircraft, and an order was placed for a second support plane promptly.
- ▶ The initial attack DNR plane provided excellent intelligence information to the ground forces on the left and right groups. This included an excellent size-up and critical, accurate information on fire behavior and rate of spread. Air attack recognized safety of the ground resources as a top priority, as evidenced by radio traffic and incident narratives.
- ▶ Reloading of the SEATS was done efficiently and safely and turn-around time was well within acceptable guidelines.
- ▶ The Rapids patrol pilot had installed a dash-mounted video camera in the aircraft the morning of the fire. This resulted in some excellent fire behavior and fire spread footage within the first hour of the fire. This will be invaluable for future training of tractor-plow operators and all operations personnel, particularly in regard to what to be prepared for in a 15–20 year old red pine plantation, Wisconsin's most volatile and dangerous fuel type.

Issues – Air Operations

AIRCRAFT CAPABILITY AND NUMBER

The second DNR aircraft on scene at Cottonville did not have an adequate fuel supply capacity as needed for lengthy project fire duty. This caused a problem when both DNR aircraft had to leave the scene at the same time for fuel. The second aircraft on scene should have been able to cover while the first left to refuel. With both aircraft being gone at the same time, it was difficult to provide adequate intelligence, direction for air tankers, and support of line operations. Neither DNR aircraft gave line or operations enough lead-time regarding leaving the scene so that alternatives could be incorporated into operational planning.

Also, the second aircraft on scene was not adequately equipped with suitable maps to provide detailed intelligence to the Situation Unit.

Recommendations:

- ✓ Obtain adequate numbers of aircraft and the right type for proper support of the forest fire program.
- ✓ All should have a minimum of a five to seven hour fuel supply.
- ✓ All aircraft assigned fire patrol should have adequate maps on board for statewide coverage.
- ✓ The Division of Forestry needs to acquire enough aircraft and employ enough trained pilots to provide two additional air attack planes on any given project fire day. One needs to cover the northern half of the state and one the southern half. These are in addition to the ten regular patrol route aircraft. Department of Transportation aircraft have characteristics that have proved to be insufficient for fire program needs.

PILOT TRAINING AND EXPERIENCE

On a statewide basis, a large number of our full time DNR pilots have not had the opportunity to work on project fires, especially with the magnitude and complexity of air operations that existed at the Cottonville Incident. This is an even greater problem in the ever-changing LTE pilot ranks.

Intensive simulation focusing on the air attack position has not been developed or conducted.

In Wisconsin, opportunities for pilots to gain experience directing SEATS and, even more so, CL215s is limited.

There has not been adequate dialog and joint interagency training to fully understand each other's air operations procedures and ground suppression tactics and techniques.

Recommendations:

- ✓ Develop and implement focused air operations training for Wisconsin pilots. This should include objective specific simulation exercises where each pilot serves as air attack on a complex incident.
- ✓ The Division of Forestry should explore opportunities through the Great Lakes Forest Fire Compact to involve Minnesota and Canadian pilots in additional interagency air operations training.
- ✓ Increase knowledge and understanding by all pilots of each agencies operational procedures and tactics through joint training and formal exchanges.
- ✓ Forestry Air ad hoc Team needs to determine single engine air tankers (SEAT'S) tactical use on project class fires and provide direction for training regarding utilization of this resource.

PROJECT FIRE AIR OPERATIONS ORGANIZATION

Prior to the Cottonville incident, previous air operations training for complex incidents had promoted the concept that the first DNR aircraft on scene would become air attack and provide direction to initial attack SEATS and helicopters and give intelligence information to the IC and other line resources. If an ICP became established, air attack would also supply intelligence information to the Situation Unit Leader.

If a second DNR aircraft was available to the incident, they would be assigned the sole responsibility of gathering information for the Situation Unit. This would free up air attack to focus on air tanker and helicopter tactics and safety, provide fire information to ground resources and serve as an aerial lookout.

On the Cottonville incident, when the second DNR aircraft arrived at the scene, he was directed to handle the air tankers as well as provide information to Situation Unit at ICP. Attempting to do both tasks caused significant lapses in providing accurate information on fire progression to the ICP. At one time, inaccurate information using road names was given to the Situation Unit regarding location of the head of the fire.

The first aircraft then flew at a low altitude and focused on being a safety lookout for the right and left groups.

Recommendations:

- ✓ Review and, as appropriate, revise priorities for air operations personnel.
- ✓ Future training sessions and simulations for pilots and operations personnel need to reemphasize the guidelines for air attack assignments on complex incidents, including ICS, forest fire suppression terminology, and expectations for the air platform.
- ✓ Develop an air attack simulation training course for pilots and conduct it annually.
- ✓ Group Supervisors and all operations personnel need to be well aware that air attack will not be able to provide them with continuous lookout service due to other responsibilities. It is quite possible the incident will only have one DNR aircraft assigned or, worst case scenario, none. Becoming overly dependent on this resource could easily lead to safety issues arising when the aircraft may leave for refueling or other emergencies.
- ✓ Other measures such as using ground personnel as lookouts may be needed to mitigate the aircraft working elsewhere.
- ✓ Due to the large number of tasks air attack must perform on a complex incident, the Division of Forestry may need to consider assigning a qualified, fire experienced, aerial observer to assist the pilot.
- ✓ Develop and train personnel to fulfill the role of Air Operations Branch Director for developing the critical communication linkage between the Operations Section Chief and the aerial resources in the ICP during large incidents.
- ✓ The Situation Unit should supplement their intelligence gathering capabilities with more ground field observers with effective radio communication.
- ✓ Decide whether pilots should use the lat-long system, legal descriptions, or road names, and develop a standard for their use.

COMMAND AND CONTROL OF AIR OPERATIONS

Air attack made the decision on how air operations were to be organized without involvement or approval from the Operations Chief or Line Supervisor. Both DNR aircraft were at times operating independently from Operations. There was an extended period where Line could not reach air attack on the radio to direct air resources to the highest priority. DNR aircraft did not always monitor both air-to-air and air-to-ground frequencies. Communications with ground forces as to which aircraft had what responsibilities was not made clear on a consistent basis.

Recommendations:

- ✓ In training, emphasize Operation Section's responsibility for aerial resource operations, including the need to assign resources and to assure that field units are appropriately apprised of their specific activities, from both safety and tactical perspectives.
- ✓ Aircraft need to monitor air-to-air and air-to-ground frequencies for safety reasons.
- ✓ Future pilot training needs to emphasize the importance of concise radio communications, limited to essential traffic.
- ✓ Aircraft need to have programmed an "air guard" frequency for emergency only traffic. Development of an air resources communication plan should be referred to the Aeronautics section and radio communication specialist for specific recommendations.

AIRCRAFT TECHNOLOGY STANDARDS

There are currently no established uniform guidelines for technical equipment to be carried on fire patrol aircraft.

Recommendation:

- ✓ The Air ad hoc Team should develop a standard list of equipment and supplies for fire patrol aircraft to carry (examples: video cameras, live feed to the ICP, digital cameras, air drop map pouches, film supply etc).

WORK/REST GUIDELINES FOR PILOTS AND NIGHT OPERATIONS

Currently, Wisconsin has no DNR pilot work – rest guidelines. There is no requirement to follow the National NWCG standards of a maximum of eight hours flight time per day and two days rest within 14 duty days. Fire patrol pilots are often required to fly early

morning missions for other functions or other non-fire forestry operations such as Gypsy Moth suppression for several days in a row. When a critical or long fire patrol or project fire occurs on those same days, then pilot fatigue can become a safety risk.

The initial attack pilot on the Cottonville fire flew in excess of 12 hours for the day.

He returned to home base well after midnight and was required to be back on duty the next day. The value of having the aircraft over the fire at night after flames were no longer visible is questionable.

Recommendations:

- ✓ Evaluate the value of DNR aircraft for night operations. They may or may not provide an important service depending on night fire behavior. Aircraft needs for the following day needs to be incorporated into this decision.
- ✓ Improve awareness of work/rest issues in future operational training.
- ✓ Refer the issue of work /rest guidelines for pilots to the Air ad hoc Team for a recommendation.

AIR SPACE COORDINATION, CLOSURE, AND TRAFFIC PATTERNS

The request for air space closure could have been done sooner and coordinated through Rapids Dispatch. Early in the fire, a news media helicopter was over the fire scene and had to be signaled by air attack to leave.

The overall air traffic pattern was not familiar to the Minnesota aircraft. The circling of the DNR air attack aircraft at a low altitude over the left and right groups was not familiar to them and initially confusing.

Recommendations:

- ✓ Operations needs to assure action is taken early in a project fire to request air space closure. This should be requested through Dispatch who may in turn ask the Command Center to coordinate. This should be standard procedure on all large fires.
- ✓ If multiple aircraft are assigned to the incident, Operations needs to confer with air attack to assure that established procedures to assure an efficient and safe air traffic pattern are being implemented.

AIR ATTACK CAPABILITIES

The Cottonville incident had up to six fixed-wing aircraft operating over the fire at one time. This number of aircraft can easily overload our air attack pilot who must fly their own plane, coordinate all other air traffic, as well as provide intelligence information to Line and the ICP.

Recommendations:

- ✓ Operations needs to be aware of this overload potential, as well as individual pilot capabilities.
- ✓ It may be appropriate to order two CL215s and when they arrive, return the SEAT aircraft to initial attack duty elsewhere. The lead plane with the CL215s can coordinate their mission and with the SEATS returning to initial attack, there would be more time for air attack to focus on intelligence to Line and the ICP. With an adequate and nearby water source, the CL215's will be more effective on an extended fire and SEATS are better suited to initial attack.
- ✓ In the future, consider the use of the CL215 lead plane, temporarily, as air attack while the DNR aircraft leaves the scene for fuel. While this did not work at Cottonville, cross training may produce sufficient understanding of Wisconsin tactics and roles that such an effort may be possible in the future.
- ✓ Incorporate these points into future training sessions.

ROOFTOP IDENTIFIERS FOR STRUCTURAL RESOURCES

Ground structural resources in the Red Oak zone were not given adequate notice of SEAT retardant drops allowing them to clear the area. Neither the SEAT, delivering the retardant, or air attack could identify the ground structural resources in order to contact them by radio.

Recommendations:

- ✓ Retardant drops should not occur prior to the area being cleared of personnel and equipment. Reemphasize this safety issue in future training and pre-season fire meetings.
- ✓ Encourage fire departments to use the rooftop identifier system that was developed several years ago. Utilize the Fire Dept. Advisory Council to help get this accomplished.

LAW ENFORCEMENT

In reviewing the actions and performance of all law enforcement agencies involved in the Cottonville Fire, the one thing that stood out was the excellence of performance in job duties during a very stressful situation with the few people to deal with the issues at hand, especially in the early stages of the fire. Local volunteer fire department and DNR fire control personnel also need to be commended for their assistance to law enforcement in the early stages of the fire. Issues about law enforcement that were discussed during the Cottonville Fire reviews mostly reflected concerns for the safety of the public as well as the need to protect and warn those in the projected path of the fire. All in all, it was a job very well done. The fact that there were only a few minor injuries over the course of the chaotic event speaks volumes for the law enforcement efforts, as well as the suppression effort. Officers from the Wisconsin State Patrol, DNR, local police departments and Sheriff's offices from several surrounding counties responded. The discussion points that surfaced during the fire reviews will be analyzed thoroughly in an effort to enhance future efforts with law enforcement during forest fire suppression. It should be noted that the protection of life, property and resources, in that order, was never compromised.

Evacuation

The obvious number one concern of both fire and law enforcement personnel is the protection of life, including the evacuation of people in the projected path of the fire. It was noted by several fire control and law enforcement personnel that in the beginning stages of this fire, they were virtually in a race with the oncoming front of flames in their efforts to evacuate people from harm's way. Had a higher percentage of the residences been occupied, the challenge would have been even greater, and the resources involved in evacuation may have been overwhelmed.

INSUFFICIENT LAW ENFORCEMENT PERSONNEL

There were insufficient law enforcement personnel on duty and available during initial stages of the fire to perform evacuation duties. This is perceived to be a likely scenario in most counties of this state.

Recommendations:

- ✓ Train the DNR's conservation wardens and state park/forest natural resource officers to assist in evacuation.
- ✓ Train volunteer fire department members as first responders to assist in evacuation. However, increased use of "in the black" tactics will result in fire departments increasingly being behind the flaming front, where they will be significantly less helpful with evacuation.
- ✓ Educate local emergency management personnel with the need to address evacuation in extensive and intensive areas.

TIME REQUIREMENT

There was a lack of awareness of the time required to complete the evacuation of residents.

Recommendation:

- ✓ Establish training for state, county and local enforcement agencies for better understanding of the time required to conduct evacuation.

RESIDENCE CHECK INDICATION SYSTEM

There is a need for a universal symbol created and utilized to indicate to all personnel that a residence has been contacted and evacuated (e. g., ribbon on fire or house number).

Recommendations:

- ✓ Develop a checked residence indication system, and train in its use.
- ✓ Work with emergency management personnel to ensure the consistent universal recognition of the system developed.

RESIDENT NEEDS

Personnel need to be better prepared to deal with people on life support systems. Personnel need to be made aware of the three P's (Pets, Purse and Prescriptions) in relation to the short time residents have to evacuate in such situations.

Recommendation:

- ✓ Train evacuation personnel in the needs of evacuees during emergencies.
- ✓ There needs to be a process developed to provide information on the number residences evacuated to allow Red Cross and Salvation Army to appropriately plan on facilities for the evacuees and meals.

Traffic control/Road closure

This was an issue that added to the stress of the duties of law enforcement and fire personnel from the time of the first response. Onlookers were found to be in the way of the very first fire response units. In today's age of scanners, it should be expected that some of the general public may beat fire suppression units to the scene of the fire. The problems that are created by some of these thrill seekers may never be eliminated. Using all available law enforcement personnel in the evacuation of residents creates a shortage of manpower to establish road closure. Once the road closures were established, deciding who could go back into the fire area, and when, had to be determined.

RESIDENTS RETURNING TO HOMES

There needs to be a discussion of the potential hazards for residents wanting to go back into the scene. This needs to be worked out between the incident commander and law enforcement branch director. As an example, ignitions of forest vegetation, garden sheds and outbuildings were happening up to 24 hours after the flame front had passed. There needs to be criteria established for how long to keep people out. It was also noted that, since it was a Saturday when the roads were reopened, there were many more onlookers than there would have been during a weekday. The pass system did not function well at Cottonville.

Recommendation:

- ✓ Reassess criteria for when it becomes appropriate to allow residents to return to their property. There is a delicate balance to the needs and safety of the suppression resources with the needs of the evacuees to return to their property. Guidance and direction that could be provided to the IC prior to an incident would be extremely useful in assisting in making the decision to re-open an evacuation zone.

DIGNITARY VISITS.

Visits from dignitaries can generate a separate set of problems.

Recommendation:

- ✓ When there is a scheduled dignitary visit, there needs to be consideration of enforcement issues and discussion between the IC and the law enforcement branch director with regard to potential problems, including traffic congestion, and safe travel and media activity.

Investigation

Overall, identification of the fire cause and origin was done well. First responding fire and law enforcement personnel were quick to protect the area surrounding the origin. First responders also did interviews of the property owners at the origin, as well as neighboring residences. There were pictures taken to document the fire scene and follow-up interviews with written statements taken within the first few hours of the start of the fire. Investigators verified the statements taken, as well as the photo evidence, by examining the fire indicators for origin determination.

ORIGIN AND CAUSE INVESTIGATOR

There is a need to get a trained investigator in wildfire origin and cause determination to the scene of the origin of a fire, especially one of this magnitude and/or complexity, as soon as possible. This person should be designated as the lead investigator and should expect to run the investigation from start to finish.

Recommendation:

- ✓ Train law enforcement personnel from Forestry, Parks and the Wardens in origin and cause determination to increase the likelihood of having someone available at a moment's notice and able to commit to assist in such an incident.

ASSIGNMENT TO INVESTIGATION

Initial attack fire control personnel, as well as those in the command structure, need to recognize early in the incident that assignment and commitment of personnel to the law enforcement investigation is vital.

Recommendation:

- ✓ Fire control personnel have to make a concentrated effort to commit to the investigation at the outset of the fire. As an organization, we tend to focus more on putting the fire out than on investigating origin and cause.
- ✓ Include training for the LE Branch Director to help recognize the need to develop a fire investigation group with fire origin and determination expertise as soon as possible to identify, secure, and protection the origin area.

MEDIA INFORMATION

There needs to be a uniform understanding of what information regarding the investigation of the fire will be given to the media.

Recommendation:

- ✓ Establish standards as to how to determine what fire information should be released, and when, and train public information folks in those standards.

OTHER VALUABLE POINTS

OF DISCUSSION

There were several other issues that came to light throughout the discussions of the Cottonville fire.

Recommendations:

- ✓ Continue to establish and maintain good working relationships with state, county, and local law enforcement entities.
- ✓ Reinforce the need for the law enforcement branch director to work closely with Plans, Operations, Red Cross and DEM.
- ✓ Use conservation wardens and state park/ forest natural resource officers to perform law enforcement duties on project fires whenever possible.
- ✓ If the county SO uses its own incident command trailer, keep it in the vicinity of the ICP. The law enforcement branch director needs to be under the same roof as the incident commander.
- ✓ Contact the local district attorney as soon as possible with the status of the law enforcement investigation, as well as any potential charges.
- ✓ Offer further training for state, county and local law enforcement officials with regard to the Incident Command System.

CONSOLIDATED RECOMMENDATIONS

High Priority Recommendations

1. The Division of Forestry should focus on evacuation as a major planning topic with partner agencies to find solutions that assure the provision of adequate evacuation staffing during the initial hours of incidents such as Cottonville. It is further recommended that this be completed by the spring 2007 fire season. *Ranger Recert, Division of Forestry, Area.*
2. The Department needs to give priority to and commit to supporting the Division's IMTs and encouraging all individuals across the agency to participate as members of IMTs. This is not only for the incident itself, but also for the IMT training and individual position training. *Department*
3. Continue to identify and develop pre-established ICP locations in high hazard areas throughout the state. *Area*
4. There needs to be developed a statewide radio communications plan for incidents of this magnitude to insure effective communications. *Division of Forestry*
5. Conduct statewide training for forest fire and Aeronautics personnel regarding use of heavy helicopters (Blackhawks) and CL-215 and CL-415 in forest fire suppression. Issues that need to be addressed include:
 - ✓ Capabilities and limitations
 - ✓ Drop prioritization
 - ✓ Communication, coordination and control of air resources assigned to a forest fire
 - ✓ Safety issues*Training, Division of Forestry*
6. Pursue a budget initiative to expand the number of seasonal emergency firefighters, increase rates of pay, and expand training and qualifications to improve availability and use of trained firefighters throughout organized protection areas. *Division of Forestry*
7. Private dozer operators need to be trained and equipped with full PPE, including Nomex, gloves, hard hats, eye protection, fire shelters and portable radios. Dozers need to be equipped for night operations, including lights. *Area*
8. In all training, reinforce the need to establish divisions and immediately assign resources to hold and patrol line behind groups. Assign adequate resources to mop-up and patrol behind burnout crews. Without these resources to hold the division, groups cannot be safely utilized. *Ranger Recert, Area*
9. Group leaders must be aware of the capability and limitations of their resources to go the distance. IMTs must set reasonable expectations for duration of assignment and must plan ahead to rotate personnel before fatigue or injury results. Ultimately, the agency needs to adopt work-rest guidelines. *Ranger Recert, Area*
10. Emphasize and support commitment of WDNR resources to forest fire readiness training for all of Wisconsin's rural fire departments and encourage each Dispatch Group to develop a formal Fire Department Training plan. Share the Wisconsin Rapids Dispatch Group Fire Department Training Plan with all Area Forestry Leaders and staff as a working template. *Ranger Recert, Area*
11. Support development of a statewide timeline to complete structural mapping in high risk WUI areas within Wisconsin's Intensive and Extensive Protection Areas. Establish minimum standards to provide statewide consistency for structural zone maps. Make structural mapping a priority in the Division's Hazard Mitigation Project Funding. *Fire Management Team, Division of Forestry*
12. Provide additional training on "In the Black" tactics to fire departments. Provide guidance to zone bosses to help recognize the difference between the head fire flaming front and the lateral, flanking fire. This could be addressed during fire behavior training. The intent would be to provide fire departments with simple criteria to identify when to safely enter zones and not delay entry too long for ITB tactics. Also develop a list of "at risk" structural features that can help fire departments efficiently screen buildings as they inspect structures immediately behind the flaming front. ... *Division of Forestry, Region*

13. Research and establish guidelines to determine the minimum period to maintain active surveillance for delayed ignition in structures after passage of the flaming front. These guidelines are needed to help plan fire department staffing needs for post-fire surveillance into extended operational periods. More importantly, these guidelines will help determine when citizen reoccupation of “saved” structures is secure. This effort will help reduce the risk of premature reentry of citizens into residential structures.
 *Fire Management Team, Division of Forestry*
14. Develop and implement focused air operations training for Wisconsin pilots. This should include objective specific simulation exercises where each pilot serves as air attack on a complex incident. Future training sessions and simulations for pilots and operations personnel need to reemphasize the guidelines for air attack assignments on complex incidents, including ICS, forest fire suppression terminology, and expectations for the air platform.
 *Fire Management Team, Division of Forestry*

15. Develop and train personnel to fulfill the role of Air Operations Branch Director for developing the critical communication linkage between the Operations Section Chief and the aerial resources in the ICP during large incidents. *Division of Forestry, Region.*
16. Fire control personnel have to make a concentrated effort to commit to the investigation at the outset of the fire. As an organization, we tend to focus more on putting the fire out than on investigating origin and cause. *Area*
17. Establish training for state, county and local enforcement agencies for better understanding of the time required to conduct evacuation. *Area*
18. Include training for the LE Branch Director to help recognize the need to develop a fire investigation group with fire origin and determination expertise as soon as possible to identify, secure, and protection the origin area. *Training*

OTHER IMPORTANT RECOMMENDATIONS

Safety

1. The Division of Forestry needs to address emergency firefighter shortages.
..... *Division of Forestry*
2. Consider placing all wheel drive Type 4 engines in the Level of Protection 1 areas so that they can drive the rough fire line after the dozers have passed. From 1/3 to 1/2 of the Type 4 engines should be all wheel drive equipped in these areas. *Fire Management Team*
3. The Division of Forestry should address the need for heavy dozers. (See additional comments in Wildland Fire Suppression).
..... *Division of Forestry*
4. The Division of Forestry should open a dialogue with landowners who own large blocks of red and jack pine plantation related to management of these species for the safety of firefighters and the protection of their forests. *Region*
5. The Division of Forestry should host discussions, internally and externally, about the nature of firefighting in these kinds of forest complexes, so that firefighters and landowners understand that this is a critical safety issue, and that tactically, the Department will utilize indirect attack or may suspend suppression efforts during the peak of the fire day. The results of these discussions should then be reduced to written instructions to the firefighters and implemented via training. *Division of Forestry, Region*
6. The Air ad hoc Team and the Aeronautics Section will resolve issues around aircraft organization, communications and command and control. *Air ad hoc Team*
7. Aircraft should be used as a secondary, not a primary lookout. The Fire Management Section, working with the Fire Management Specialist Team, should develop training on how to fight difficult fires without the use of aircraft and still maintain compliance with LCES. This training should be part of the 2006 recertification training for rangers.
..... *Fire Management Team, Ranger Recert*
8. The Command Center, the regions and the areas should develop standard procedures for extended planning. *Division of Forestry*
9. Continue efforts to establish improved standards for physical fitness of firefighters and fire line supervisors. *Division of Forestry*
10. Address needs of FDB vehicle, including communications. *Area*
11. It is recommended that the emphasis of fire department grant programs be shifted to communications as a safety priority. Homeland Security funding may be a source of funding for these changes.
..... *Division of Forestry*
12. Areas should increase the local cache of these items (clamshells, battery sets and headlamps) to a total of one per each heavy unit, plus one for each anticipated heavy equipment cooperator. *Area*
13. Address problems with Peltor headsets.
14. Continue to send out this information (special fire behavior forecast), but develop a standard procedure to be established by spring of 2006 related to critical fire weather transmissions to Bureau staff, Regional Forestry Leaders (RFLs), AFLs, the dispatchers, and to all firefighters, so communication is certain. *Fire Management Team*
15. Adjust training and develop policy to assure that no tactical approach is taken that relies solely on SEAT drops for safety.
..... *Division of Forestry*
16. Firefighters need to employ a defensive driving attitude to enhance safety, especially during the first hours of a fire when all available officers may be tied up doing evacuation so. *Area*
17. During later shifts, the IMT, in cooperation with local law enforcement, needs to be aware of the impact on all incident activities that visiting dignitaries can have and plan to mitigate them. *Area*
18. Private or other non-forestry large dozers and operators need proper communications and personal protective equipment. (See additional comments in Wildland Fire Suppression). *Area*

Organization

1. To be most effective, IMTs should train annually and practice as a team and with external partners (fire departments, local law enforcement and emergency management, Red Cross, Salvation Army, amateur radio clubs, etc.) and internal partners (fisheries, wildlife, conservation wardens and other non-fire forestry staff) prior to fire season. *Area*
2. The Department should encourage outside agencies that we commonly interact with during emergency incidents (Red Cross, Salvation Army and Emergency Management) to adopt our system of utilizing color-coded vests to identify their personnel and who is the leader of the organization. *Area*
3. The Department should actively engage in supporting the development and growth of Volunteer Organizations Active in Disasters (VOAD) in each county. This board is comprised of volunteer organizations that we rely on during emergencies and is actively working on delineation of duties of these volunteer organizations. *Area*
4. When needed, IMT members should be notified by a written document (Operations Plan), as well as by another media (e. g., cell phone, pager, e-mail or voice message), that they are on call. That needs to be confirmed, and the procedure tested throughout the fire season. *Area*
5. The Division of Forestry needs to continue to provide the training and experience opportunities so that Forestry Team Leaders can take key leadership roles on incident management teams and increase the overall organizational responsiveness to emergency situations. These key leadership roles need to have dedicated forestry personnel assigned to them, not only for the incident, but also for training. *Division of Forestry*
6. The Department needs to resolve the issue of funding standby and overtime payments for individuals assigned to IMTs from outside the Forestry Program and Department. *Department*
7. Recognize communications problems early and have a communication specialist (DOT radio technician) as part of the IMT. *Area*
8. Pre-established ICP should have a minimum of six land phone lines for use in an emergency situation. High-speed Internet



computer connections would be beneficial as the use of technology with our IMTs continues to expand. *Area*

9. Important to gain knowledge of where pre-planned evacuation centers in the county are located. The ICP and evacuation center should not be in same facility, though it works when they are in close proximity. . *Area*
10. Demobilization of resources mobilized by the command center from a forest fire should occur in consultation between the region and the command center to improve communication, expectations and coordination statewide. *Division of Forestry*
11. Develop a policy on expectations of personnel mobilized to a forest fire in another region through the command center in regard to length of assignment and work/rest guidelines prior to release to their home station. *Division of Forestry*
12. As occurred on this fire, objectives should be clearly posted, explained and understood by all resources managing and suppressing the fire. *Area*
13. A fire of this magnitude requires more than a single PIO to coordinate and deal with the requests for information from the public and media sources. *Region*
14. A lead PIO should be appointed by the Incident Commander to provide a clear direction and understanding to the PIOs assigned to the fire. *Region, Area*
15. PIOs need to identify themselves as a spokesperson for the Wisconsin Department of Natural Resources IMT. Interagency PIOs and IMT members should identify themselves as working with the Department, which is the agency responsible for the incident. *Area*

16. Incident commanders need to recognize the value of meeting with the impacted individuals of the incident early in the incident to provide them with information on the situation, as happened at Cottonville. *Area*
17. The Division of Forestry needs to address emergency firefighter shortages. *Division of Forestry*
18. Develop Air Operations Branch Director position. *Training, Region*
19. Provide additional training for LE Branch Director regarding a fire investigation group.
20. Provide a resource locator board for the LE Branch. The LE Branch needs to train with a resource locator to help recognize the locations of all LE resources on an incident and assess their availability for other assignments. *Area*
21. Encourage the use of the structural zone maps for evacuation purposes. .. *Ranger Recert, Area*
22. Continue to recruit and train fire department personnel to fill the positions of Structural Branch Director and Fire Department Boss as part of the IMT. Reinforce structural branch training by using exercises or simulations that bring together structural branch members. *Area*
23. Encourage the use of Department personnel to serve as a liaison to the structural branch as a part of our IMTs. *Area*
24. Make structural zone maps a priority. *Division of Forestry*
25. Adopt the use of the in-the-black tactics implemented through the structural zone concept. ... *Division of Forestry*
26. Provide additional structural zone maps (five) in the structural branch ICP kit. *Area*
27. Evaluate span of control needs for incidents of this magnitude within the structural branch. Develop criteria, methodology and train personnel to permit the splitting of fire department boss role as fire department resources and structural zones involved exceed the span-of-control. This would greatly enhance the organizational structure and improve communications within the structural branch. It would also allow for the more timely release and re-assignment of structural resources during the incident. *Fire Management Team*
28. Develop and provide training to fire department personnel on the Department's aerial fire suppression resources. *Area*
29. Evaluate the use of firefighter rehabilitation efforts currently utilized by structural fire departments for the Department's wildland firefighters. *Fire Management Team*
30. Increase use of field observers to facilitate mapping of the fire and to provide of intelligence information to the situation unit. *Area*
31. Resolve the issue with the computers utilized by IMT regarding administrator privileges in order to address situations occurring during the incident when not having computer support personnel available to assist. Alternatively, identify personnel with the knowledge, expertise and administrative privileges to be members of each IMT. *Division of Forestry, Region*



32. Identify and train appropriate personnel to fill the role of documentation unit leaders on IMTs. It is critical to understand that these incidents are litigated for years after the smoke clears. *Training, Area*
33. The Department should develop an informational packet for agencies left on the incident that details key information for landowners affected by the fire. Examples of information needed were lists of heavy equipment companies, charred timber salvage, emergency cost sharing available, where to obtain forestry assistance, and permits needed to reconstruct homes or outbuildings. *Fire Management Team*
34. Clarify expectations for personnel from outside the region deployed to a fire in regard to the length of assignment and demobilization procedures to be utilized by the fire. .. *Fire Management Team, Ranger Recert*
35. Develop policy regarding personnel coming off-shift in regard to their traveling to their home or home station, and other work-rest issues. *Fire Management Team*
36. Logistics section chiefs should recognize that Red Cross and Salvation Army have relationships pre-established with area businesses that can assist in procurement of resources needed on a fire, especially food, water and ice. *Training, Area*
37. If cell phones are going to be utilized as the primary communication tool during an incident, the cell phone needs to be left at the incident site where the function is located for use during the entire incident. *Area*
38. The Department's IMTs should recruit and train members for development of a Finance Section within each IMT. *Training, Region*
39. Specifically train and exercise the Finance Section positions to promote a thorough understanding of the role the positions have in the incident and develop the section as a part of the overall team. Utilization of a finance section as part of mock fire exercises, simulations or IMT training will be critical to the successful development of this section. *Training, Region*
40. Discuss and decide who has authority to approve bills generated by the incident. FOT

Communications

1. The Division of Forestry needs to secure additional radio frequencies to utilize for tactical operations, specifically structural zones, and for air-to-ground communications. *Division of Forestry*
2. Private or other non-forestry large dozers and operators need proper communications and personal protective equipment. (See additional comments in Wildland Fire Suppression). *Area*
3. Nomenclature and terminology utilized in tactical operations (A - Alpha, B - Bravo, etc.) needs to be reviewed and reinforced. *Ranger Recert, Area*
4. Air attack needs to have better communications with Line/Operations and the second DNR aircraft as to the status of fuel needs to avoid both aircraft leaving for fuel at the same time, and about the frequency plan to better coordinate communication. *Air ad hoc Team, Region*
5. Dedicated FDB vehicles need to be equipped with properly installed communications equipment. *Area*
6. Weather reports/updates need to be communicated to the field from the ICP when received from dispatch. *Area*
7. Have additional phones lines planned with the local telephone company to provide at least six hard line phones for each preplanned ICP statewide. Options may include satellite phones if available. *Area*
8. The Command Center needs to better coordination communications. (See additional comments in Organization). *Division of Forestry*
9. During IMT training sessions, more emphasis should be placed on the Incident Action Plan, to provide a better planning tool for additional resource needs. *Area*
10. During incident management team evaluation exercises, Forestry Command Center activation should be requested as part of the exercise, and at least annually the Command Center should have a practical exercise in conjunction with an IMT evaluation. *Division of Forestry, Area*

11. Since Peltors are approaching ten years of age, it is time to research the potential for better headsets and to establish an operational life and a rotational cycle for them. *Division of Forestry*

12. Replace all existing Peltor headsets by spring of 2007. *Division of Forestry*

13. Every operator's Peltor headset should be tested with morning radio checks. *Area*

14. Portable and mobile radios need to have at least one "project fire" group standardized statewide and shared with cooperators. *Division of Forestry, FOT*

15. Emergency firefighters utilized the cascaded portable radios (old Kings), and the Bureau should consider the replacement of these. *Division of Forestry*

16. Low band radios, when used, must be hard wired to the vehicle's battery or other direct power supply to avoid radio failure. *Area*

17. During IMT training sessions, every section chief and selected others should be taught how to reset the breaker on a portable repeater. *Area*

18. During an incident, when communication problems/issues are identified, mitigation strategies to address these problems need to be developed. *Area*

19. Satellite phones should be evaluated to find an easy-to-use and functional product during Wisconsin fires. The satellite phone the area did have was not used. *Division of Forestry*



Wildland Fire Suppression

1. One forestry heavy dozer dedicated to fire control operations needs to be permanently staffed and readily available in each LOP 1 protection area. *Division of Forestry, Region*

2. Use a phonetic alphabet during all radio communications. *Ranger Recert*

3. Recognize the agency standard of 80 chains per hour is a rule of thumb and may not be achievable in all fuel types under all fire behavior conditions. Line must be constructed in a safe manner at all times. *Ranger Recert*

4. Ops Chiefs, Line and Group supervisors need to establish and communicate minimum standards for width of mineral soil breaks for various fuel types along the flank. *Training, Ranger Recert*

5. Recognize that there is a point of diminishing returns when adding more resources to a line construction group does not increase line production rates. Immediate staffing of divisions behind groups with tractor plow units and other suppression resources is critical to hold and improve line, while allowing the line construction group to move forward. *Ranger Recert, Area*

6. Heavy dozers should be available and ordered early and be used to support tractor-plows, strengthen holdable line, and to increase overall production rates. *Division of Forestry, Area*

7. Continue efforts to support the training of hand crews through universities, technical



- colleges, and prison work crews. Utilize trained crews for initial attack and mop up on a routine basis each year. Consider ordering crews through GLFFC or NIFFC for pre-positioning during extreme fire danger conditions or in the early stages of the first operational period. *Area, Division of Forestry*
8. Fire cache content and availability needs to be pre-determined in advance of fire season. As with any equipment order, clearly articulate needs when calling Tomahawk for fire cache equipment. Follow up on the fire cache study report from several years ago to determine the availability and content of both area and Tomahawk fire caches. *Area*
 9. Do not engage in line construction in pine fuel types with only one tractor-plow unit until supporting resources are in place, size-up completed, and an assignment briefing provided. The decision to begin line construction should be made only after performing a risk assessment and considering the equipment operator's experience level, fire behavior conditions, fuels, visibility, and potential for breakouts. Initial actions may include construction of a short (<100 yards) fireline with the operator doubling back and forth to widen and continually check that the line will hold before proceeding further. *Ranger Recert, Area*
 10. Include stream bottom tactics in Division/ Group supervisor training and recognize conditions when it is acceptable to place line construction groups on the same side of a stream or river as the fire, as opposed to placing these resources across the river from a fire, which is often more desirable. *Ranger Recert*
 11. Division/Group supervisors should be trained, have access to, and routinely use GPS units to navigate and track their line construction progress. The Garmin Map 76S GPS units should be standard issue and included in all line packs. *Ranger Recert, Area*
 12. Review agency guidance and training specific to the H-Division regarding agency priorities and expectations of this position, and revise as appropriate. Recognize the interaction of this position with structural and law enforcement branches, as well as the need for continual scouting ahead of the fire's path and determination of resource needs to be anticipated well in advance. *Fire Management Team*
 13. Include WUI hazard identification, as well as appropriate safety and mitigation methods in training, simulations, and pre-fire season operational meetings. Provide Hazardous Materials awareness training to all first responders. Provide additional guidance on the priority between forward line construction progress vs. diverting tractor-plow resources to protect structures that are immediately threatened. *Area*
 14. All fireline personnel should be self-prepared and equipped for functioning over an entire operational period including into the first evening, including food and water. Fire caches should contain extra supplies including headlamps and batteries for extended attack operations. The occurrence of transition to night shift operations needs to be clearly identified and communicated to all incident personnel. *Area*
 15. All division/group supervisors should have line packs readily available at all times and need to be prepared for extended operations away from the truck. Develop agency standards for line packs to include drinking water, first aid kits, extra batteries for portable radios and GPS units, clam shells, personal strobes, headlamps, etc. *Area*
 16. Implement the agency physical fitness proposal without delay. *Division of Forestry*
 17. Adopt the concept of periodic rehabilitation for DNR firefighters. *Fire Management Team, Area.*
 18. Anticipate equipment breakdowns and order resources accordingly. Agency mechanics should be prepared and equipped to perform field repairs and should have common replacement parts readily available. Suitable replacement parts should be considered for temporary installation when practical and a name brand part cannot be readily located. *Ranger Recert, Division of Forestry*
 19. The LeMay Center shop truck should be equipped with common replacement parts and ready for dispatch in a timely manner during fire season. LeMay Center should communicate the availability and qualifications of their personnel to the field in order to improve communications and expectations. *Division of Forestry*
 20. A mechanic should be available for immediate dispatch to an incident of this proportion during acute fire weather. *Division of Forestry, Region*

Structural Protection

1. Encourage the formation and group training of structural branch teams using countywide or multi-county fire department members to fill a variety of roles for this section. Team members should have opportunities to cross-train for several roles in the structural branch team to provide flexibility in SB team roles. *Area*
2. Encourage a consistent statewide standard for a dedicated FDB vehicle with proper communications and support the operation / equipping of such vehicles through the fire department grant process. *Fire Management Team*
3. Reinforce the standardization of a fire department task force concept for structural zone operations. Include training on the formation and deployment of task force combinations to support structural zone operations when using “In the Black” tactics. *Ranger Recert, Fire Management Team*
4. Emphasize structural branch awareness of zone orientation vs. fire direction when assigning resources to designated zones. *Ranger Recert*
5. Develop awareness and training procedures to assure use of zone boss packets. Examine the possibility of carrying a supply of these packets in the designated FDB vehicle within each DG. *Ranger Recert, Area*
6. Continue to provide structural triage for forest fire situations as a routine element of fire department training. *Area*
7. Continue to encourage fire departments to equip their firefighters with wildland PPE through the FD grant program and carry this PPE when seasonally appropriate. *Area*
8. Continue support for local efforts to implement countywide zoning ordinances that lead to minimum driveways standards which will improve access for emergency vehicles, for firefighter safety, and for protection of structures. Seek interest from Wisconsin’s insurance industry to also support this effort. Other standards may be appropriate to incorporate in such ordinances, as well. Region. *Area*
9. Prior to deployment, out of county emergency personnel need to be briefed on local road naming protocol to avoid confusion and response delays. Structural maps could also assist with explaining local road naming protocols. *Area*
10. Include “backfilling” considerations when planning simulation training for structural branch teams. Also, develop a fire department resource directory for a multi-county area that can be used as a reference to order resources for mutual aid for structural suppression on wildfires as well as for “back filling” for fire departments that have exhausted local resources. *Area*
11. Incorporate R & R for structural firefighters as a part of Structural Branch section training. Give consideration to initiating R & R on large forest fires earlier in the first operational period, perhaps starting the rotation within the first four hours. *Area*
12. As fire departments complete their rotation for R & R, attempt to reassign the same fire department(s) units back to the zone that they were patrolling. This will provide efficiencies by allowing fire fighters familiar with a zone to resume work by focusing on



what remains to be overhauled and not starting work in an unfamiliar zone. *Area*

13. Research, purchase, test, and help support fire technology that can assist fire departments to improve efficient deployment of “In the Black” tactics, as well as help screen structures for hotspots that if not detected, would rekindle and risk loss of a “saved” structure. Consider including such technology in the fire department grant priorities.
..... *Fire Management Team*

14. Post flaming front hazard awareness training should be included in the ITB training package.
..... *Division of Forestry, Fire Management Team*

15. Provide training to structural branch teams to help them forecast water needs for ITB tactics and locate secure water sites. *Area*

16. Encourage the addition and/or installation of 3-5 new statewide simplex frequencies to improve communication on common radio frequencies among fire departments from adjoining counties working on large mutual aid incidents such as a forest fire.
..... *Division of Forestry*

17. Resolve technical issues with maintaining dependable low band communications, testing equipment prior to and during fire season. *Division of Forestry, Area*

18. Provide advanced notice of aerial suppression actions through Structural Branch section to fire department personnel working in zones. Determine the communication path needed to inform fire department resources of aerial suppression efforts and incorporate this communication issue in future IMT and fire department training exercises. Reinforce use of roof top identifiers for FD apparatus.
..... *Fire Management Team, Area*

19. Identify LTEs and fire department members as potential engine operators. Conduct routine training with these operators to develop familiarity with operation of these Type 4 engines and certified designated operators. Fortify the fiscal and organizational support for more maintaining a core of trained, experienced LTEs targeted to support Wisconsin’s forest fire suppression program.
..... *Division of Forestry, Area*

20. Investigate the need for extended patrol in “cold zones” using fire department resources. Establish acceptable standards to help determine when to release “cold zone” patrol and allow citizen reentry. Investigate use of out-of-area fire departments or other agencies to sustain “cold zone” patrol past initial operational periods. *Ranger Recert*

21. Explore the opportunity to develop a mutually agreeable structural damage assessment system that can be consistently applied across Wisconsin. Establish structural assessment criteria, a field collection worksheet, identify the who, when, and how of conducting this assessment, and incorporate into DNR, fire department, and external partner training exercises.
..... *Fire Management Team*



Air Operations

1. Obtain adequate numbers of aircraft and the right type for proper support of the forest fire program.
..... *Division of Forestry*
2. All should have a minimum of a five to seven hour fuel supply. Division of Forestry
3. All aircraft assigned fire patrol should have adequate maps on board for statewide coverage.
.. *Division of Forestry*
4. The Division of Forestry needs to acquire enough aircraft and employ enough trained pilots to provide two additional air attack planes on any given project fire day. One needs to cover the northern half of the state and one the southern half. These are in addition to the ten regular patrol route aircraft. Department of Transportation aircraft have characteristics that have proved to be insufficient for fire program needs.
..... *Division of Forestry*
5. The Division of Forestry should explore opportunities through the Great Lakes Forest Fire Compact to involve Minnesota and Canadian pilots in additional interagency air operations training. *Division of Forestry*
6. Increase knowledge and understanding by all pilots of each agencies operational procedures and tactics through joint training and formal exchanges.
..... *Division of Forestry, Region*
7. Forestry Air ad hoc Team needs to determine single engine air tankers (SEAT'S) tactical use on project class fires and provide direction for training regarding utilization of this resource.
..... *Air ad hoc Team*
8. Review and, as appropriate, revise priorities for air operations personnel.
..... *Division of Forestry, Fire Management Team*
9. Develop an air attack simulation training course for pilots and conduct it annually.
..... *Training, Fire Management Team*



10. Group Supervisors and all operations personnel need to be well aware that air attack will not be able to provide them with continuous lookout service due to other responsibilities. It is quite possible the incident will only have one DNR aircraft assigned or, worst case scenario, none. Becoming overly dependent on this resource could easily lead to safety issues arising when the aircraft may leave for refueling or other emergencies. *Ranger Recert, Area*
11. Other measures such as using ground personnel as lookouts may be needed to mitigate the aircraft working elsewhere. . *Area*
12. Due to the large number of tasks air attack must perform on a complex incident, the Division of Forestry may need to consider assigning a qualified, fire experienced, aerial observer to assist the pilot. *Division of Forestry*
13. The Situation Unit should supplement their intelligence gathering capabilities with more ground field observers with effective radio communication. *Area*
14. Decide whether pilots should use the lat-long system, legal descriptions, or road names, and develop a standard for their use.
..... *Fire Management Team*
15. In training, emphasize Operation Section's responsibility for aerial resource operations, including the need to assign resources and to assure that field units are appropriately apprised of their specific activities, from both safety and tactical perspectives. *Area*

16. Aircraft need to monitor air-to-air and air-to-ground frequencies for safety reasons.
..... *Division of Forestry*
17. Future pilot training needs to emphasize the importance of concise radio communications, limited to essential traffic. Training,
..... *Division of Forestry*
18. Aircraft need to have programmed an "air guard" frequency for emergency only traffic. Development of an air resources communication plan should be referred to the Aeronautics section and radio communication specialist for specific recommendations. .. *Division of Forestry*
19. The Air ad hoc Team should develop a standard list of equipment and supplies for fire patrol aircraft to carry (examples: video cameras, live feed to the ICP, digital cameras, air drop map pouches, film supply etc).
..... *Air ad hoc Team*
20. Evaluate the value of DNR aircraft for night operations. They may or may not provide an important service depending on night fire behavior. Aircraft needs for the following day needs to be incorporated into this decision.
..... *Air ad hoc Team*
21. Improve awareness of work/rest issues in future operational training. *Division of Forestry*
22. Refer the issue of work /rest guidelines for pilots to the Air ad hoc Team for a recommendation. *Air ad hoc Team*
23. Operations needs to assure action is taken early in a project fire to request air space closure. This should be requested through Dispatch who may in turn ask the Command Center to coordinate. This should be standard procedure on all large fires.
..... *Division of Forestry, Area*
24. If multiple aircraft are assigned to the incident, Operations needs to confer with air attack to assure that established procedures to assure an efficient and safe air traffic pattern are being implemented. *Area*
25. Operations needs to be aware of this overload potential, as well as individual pilot capabilities. *Ranger Recert, Area*
26. It may be appropriate to order two CL215s and when they arrive, return the SEAT aircraft to initial attack duty elsewhere. The lead plane with the CL215s can coordinate their mission and with the SEATS returning to initial attack, there would be more time for air attack to focus on intelligence to Line and the ICP. With an adequate and nearby water source, the CL215's will be more effective on an extended fire and SEATS are better suited to initial attack. *Air ad hoc Team*
27. In the future, consider the use of the CL215 lead plane, temporarily, as air attack while the DNR aircraft leaves the scene for fuel. While this did not work at Cottonville, cross training may produce sufficient understanding of Wisconsin tactics and roles that such an effort may be possible in the future. *Air ad hoc Team*
28. Incorporate these points into future training sessions. *Division of Forestry*
29. Retardant drops should not occur prior to the area being cleared of personnel and equipment. Reemphasize this safety issue in future training and pre-season fire meetings. *Division of Forestry, Area*
30. Encourage fire departments to use the rooftop identifier system that was developed several years ago. Utilize the Fire Dept. Advisory Council to help get this accomplished. ... *Area*

Law Enforcement



1. Train the DNR's conservation wardens and state park/forest natural resource officers to assist in evacuation.
..... *Department, Division of Forestry*
2. Train volunteer fire department members as first responders to assist in evacuation. However, increased use of "in the black" tactics will result in fire departments increasingly being behind the flaming front, where they will be significantly less helpful with evacuation. *Division of Forestry, Area*
3. Educate local emergency management personnel with the need to address evacuation in extensive and intensive areas.
..... *Area*
4. Develop a checked residence indication system, and train in its use.
..... *Fire Management Team*
5. Work with emergency management personnel to ensure the consistent universal recognition of the system developed.
..... *Division of Forestry, Area*
6. Train evacuation personnel in evaluating the needs of evacuees during emergencies. .. *Area*
7. There needs to be a process developed to provide information on the number of residences evacuated to allow Red Cross and Salvation Army to appropriately plan on facilities for the evacuees and meals.
..... *Fire Management Team*
8. Reassess criteria for when it becomes appropriate to allow residents to return to their property. There is a delicate balance to the needs and safety of the suppression resources with the needs of the evacuees to return to their property. Guidance and direction that could be provided to the IC prior to an incident would be extremely useful in assisting in making the decision to re-open an evacuation zone.
..... *Fire Management Team*
9. When there is a scheduled dignitary visit, there needs to be consideration of enforcement issues and discussion between the IC and the law enforcement branch director with regard to potential problems, including traffic congestion, and safe travel and media activity. *Ranger Recert, Area*
10. Train law enforcement personnel from Forestry, Parks and the Wardens in origin and cause determination to increase the likelihood of having someone available at a moment's notice and able to commit to assist in such an incident. .. *Area, Division of Forestry*
11. Establish standards as to how to determine what fire information should be released, and when, and train public information folks in those standards. *Division of Forestry*
12. Continue to establish and maintain good working relationships with state, county, and local law enforcement entities. *Area*
13. Reinforce the need for the law enforcement branch director to work closely with Plans, Operations, Red Cross and DEM. *Area*
14. Use conservation wardens and state park/forest natural resource officers to perform law enforcement duties on project fires whenever possible. *Area*
15. If the county SO uses its own incident command trailer, keep it in the vicinity of the ICP. The law enforcement branch director needs to be under the same roof as the incident commander. *Area*
16. Contact the local district attorney as soon as possible with the status of the law enforcement investigation, as well as any potential charges. *Area*
17. Offer further training for state, county and local law enforcement officials with regard to the Incident Command System. *Area*

RESPONSIBILITY CHART

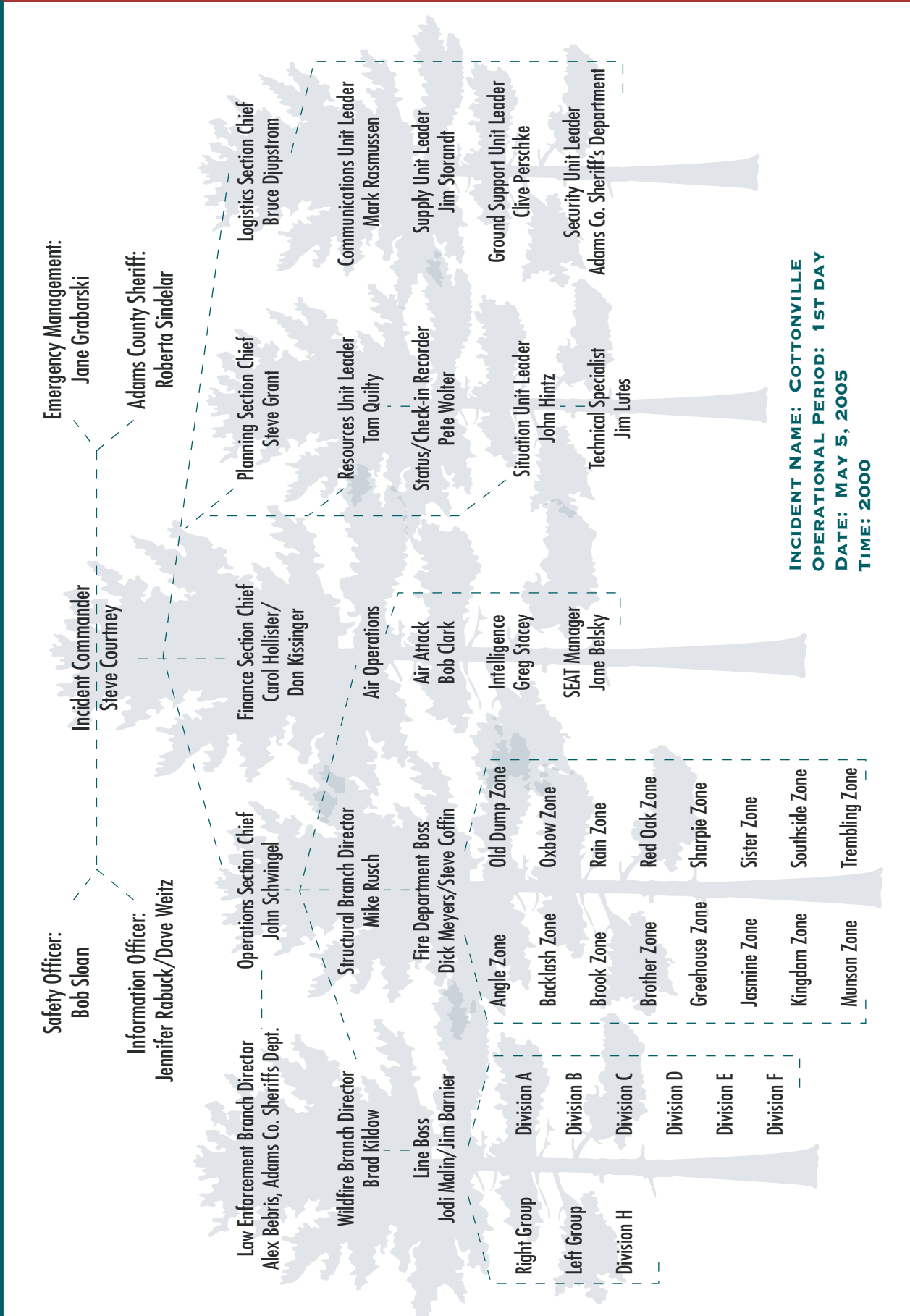
Recommendations categorized by responsible group to address each recommendation.

Responsible Group	High Priority Recommendations	Safety Issues	Organizational Issues	Communication Issues	Wildland Suppression	Structural Protection	Air Resource Issues	Law Enforcement Issues
<i>Area</i>	HP-1*, HP-3*, HP-7, HP-8*, HP-9*, HP-10*, HP-16, HP-17	S-10, S-12, S-16, S-17, S-18	0-1, 0-2, 0-3, 0-4, 0-7, 0-8, 0-9, 0-12, 0-14*, 0-15, 0-16, 0-20, 0-21*, 0-22, 0-23, 0-26, 0-28, 0-30, 0-32*, 0-36*, 0-37	C-2, C-3*, C-5, C-6, C-7, C-9, C-10*, C-13, C-16, C-17, C-18	W-5*, W-6*, W-7*, W-8, W-9*, W-11*, W-13, W-14, W-15, W-17*	P-1, P-5*, P-6, P-7, P-8*, P-9, P-10, P-11, P-12, P-15, P-17*, P-18*, P-19*	A-10*, A-11, A-13, A-15, A-23*, A-24, A-25*, A-29*, A-30	L-2*, L-3, L-5*, L-6, L-9*, L-10*, L-12, L-13, L-14, L-15, L-16, L-17
<i>Ranger Recert Training</i>	HP-1*, HP-8*, HP-9*, HP-10*	S-7*	0-21*, 0-34*	C-3*	W-2, W-3, W-4*, W-5*, W-9*, W-11*, W-18*	P-3*, P-4, P-5*, P-20, W-10*,	A-10*, A-25*	L-9*
<i>Suppression Team</i>	HP-11*, HP-13*, HP-14*	S-2, S-7*, S-14	0-19*, 0-27, 0-29, 0-33, 0-34*, 0-35		W-12, W-17*	P-2, P-3*, P-13, P-14*, P-18*, P-21	A-8*, A-9*, A-14	L-4, L-7, L-8
<i>Fire Operations Team</i>			0-40	C-14*,				
<i>Bureau of Forest Protection</i>	HP-1*, HP-2, HP-4, HP-5*, HP-6, HP-11*, HP-12*, HP-13*, HP-14*, HP-15*	S-1, S-3, S-5*, S-8, S-9, S-11, S-13, S-15	0-5, 0-6, 0-10, 0-11, 0-17, 0-24, 0-25, 0-31*	C-1, C-8, C-10*, C-11, C-12, C-14*, C-15, C-19	W-1*, W-6*, W-7*, W-16, W-18*, W-19, W-20*	P-14*, P-16, P-17*, P-19*	A-1, A-2, A-3, A-4, A-5, A-6*, A-8*, A-12, A-16, A-17*, A-18, A-21, A-23*, A-28, A-29*	L-1, L-2*, L-5*, L-10*, L-11
<i>Air Ad Hoc Team</i>		S-6		C-4*			A-7, A-19, A-20, A-22, A-26, A-27	
<i>Region</i>	HP-12*, HP-15*	S-4, S-5*	0-13, 0-14*, 0-18*, 0-31*, 0-38*, 0-39*	C-4*	W-1*, W-20*	P-8*	A-6*	
<i>Training Office</i>	HP-5*, HP-18		0-18*, 0-19*, 0-32*, 0-36*, 0-38*, 0-39*		W-4*		A-9*, A-17*	

* indicates the issue needs to be addressed by multiple groups Letter refers to section denoting improvement Numbers refer to line number under that section

APPENDIX

COTTONVILLE FIRE ORGANIZATION CHART



INCIDENT NAME: COTTONVILLE
 OPERATIONAL PERIOD: 1ST DAY
 DATE: MAY 5, 2005
 TIME: 2000

DAILY FIRE OPERATIONS PLAN

Wisconsin Rapids Area

Date: 5/05/05

Time: 0900

Adjective Level: Very High

For Operational Period: 5/05/05 0900 through 5/05/05 1700

Special Alerts:

Shutdown Tonight: Towers: Patrol: Riders: Point crews:

Standby Shift:

Detection Plans: Towers: Thursday TIME: 1100

Air Patrols: Thursday TIME: 1000

Staffing: Stations 0900 Report Dozer availabilities for today

BAB	FRD	NEC	NEK
x 7X Engine	x 7X Engine	x 7X Engine	x 7X Engine
x BAB 1	x FRD 1	x NEC 1	x NEK 1
	x FRD 2	x NEC 2	x NEK 2
x 8X Sandhill Forester	x FRD 3	x Refuge Dozer	
	Point Crew 5 person	x SEAT @ 1000	Wood Co. D - 7
x Bombing Rng Doz.	FRD Dozer	x Juneau Co. Dozer	
x Nowicke Dozer	x Hwy Dept D-5 11-6	x 8x Mauston	
WAU	WHG	WDL	
x 7X Engine	x 7X Engine	x 7X Engine	x Area Ranger
x WAU 1	x WHG 1	x WDL 1	x Dispatch Lloyd
		x WDL 2	x Exp. Dispatcher
x 8X Engine	x Point Crew 5 person		x FRD Team LDR
	x 8X Engine		WAU Team LDR
			x RAP Team LDR
			x Area Staff

Safety Message: Anchor, LCES, Tractor Plows must have clear assignments and objectives

Track Patrol:

Prepositioning: Yes 1230

Riders Authorized: yes Start: 1100 Point Crews: WHG by 1400, 5 person

Overhead Team: Available

Mechanic Standby FRD: MEAD:

Prepared by: Steve Courtney Date: 5/05/05

Approved by: Steve Courtney Date: 5/05/05

FIRE BEHAVIOR FORECAST

Date: 5/05/05

Location: Adams, Juneau, Monroe, Jackson

Weather Summary: ...FIRE WEATHER CONDITIONS MAY APPROACH CRITICAL LEVELS TODAY...

.DISCUSSION...AN APPROACHING LOW PRESSURE AREA WILL INCREASE SOUTH TO SOUTHWEST WINDS ACROSS THE REGION TODAY. BESIDES THE BREEZY CONDITIONS...TEMPERATURES WILL BE HIGHER TODAY AS COMPARED TO WEDNESDAY. THIS TYPE OF WEATHER PATTERN WILL ALSO GRADUALLY INCREASE LOW LEVEL MOISTURE...BUT RELATIVE HUMIDITIES COULD STILL DROP AS LOW AS 20 PERCENT MAKING FOR CRITICAL CONDITIONS. RAIN CHANCES

WILL INCREASE TONIGHT AS THIS STORM SYSTEM MOVES THROUGH...WITH ADDITIONAL RAIN CHANCES THROUGH THE WEEKEND. HUMIDITIES WILL BE HIGHER AFTER TODAY WHICH SHOULD LESSEN THE FIRE WEATHER THREAT OVER THE WEEKEND AND INTO NEXT WEEK

Fire Behavior

General:

Haines Index – 5 - Moderate

Specific:

Fuel Model	1	3	4	9	10	11
	Short Grass 3'	Long Grass	Jack and Red Pine Plantations	Timber (Loose Hardwood Litter)	Timber (Litter & Understory)	Slash (Light Fuel Loading W/ Shade)
Temperature	75	75	75	75	75	75
Relative Humidity	20	20	20	20	20	20
20 Foot Wind Speed	S 17	S 17	S 17	S 17	S 17	S 17
Mid-Flame Wind Speed	6.8	6.8	10.2	6.8	6.8	6.8
Fine Fuel Moisture	5	5	5	5	5	5
% Slope	0	0	0	0	0	0
Flame Lengths (Feet)	6.3	17.1	31.6	4	6.4	4.2
Rate Of Spread (Chs/Hr)	184	190	208	15.6	13.3	8.9
Spotting Distance (Miles)			.3 to .75			

- ✓ Used LAXweather forecast and the lowest RH and highest Winds forecasted.
- ✓ Fine fuel moisture was taken from the point forecast
- ✓ 100% live fuel moistures was used for fuel models needing input.

SAFETY MESSAGE

Be sure to stay hydrated. Take breaks as needed. Be aware of safety zones and escape routes on all fires. Expect erratic fire behavior and long range spotting this could result in significant control problem on these fires.

FIRE WEATHER PLANNING FORECAST
NATIONAL WEATHER SERVICE LA CROSSE WI - 515 AM CDT THU MAY 5 2005

...FIRE WEATHER CONDITIONS MAY APPROACH CRITICAL LEVELS TODAY...

.DISCUSSION...AN APPROACHING LOW PRESSURE AREA WILL INCREASE SOUTH TO SOUTHWEST WINDS ACROSS THE REGION TODAY. BESIDES THE BREEZY CONDITIONS...TEMPERATURES WILL BE HIGHER TODAY AS COMPARED TO WEDNESDAY. THIS TYPE OF WEATHER PATTERN WILL ALSO GRADUALLY INCREASE LOW LEVEL MOISTURE...BUT RELATIVE HUMIDITIES COULD STILL DROP AS LOW AS 20 PERCENT MAKING FOR CRITICAL CONDITIONS. RAIN CHANCES WILL INCREASE TONIGHT AS THIS STORM SYSTEM MOVES THROUGH...WITH ADDITIONAL RAIN CHANCES THROUGH THE WEEKEND. HUMIDITIES WILL BE HIGHER AFTER TODAY WHICH SHOULD LESSEN THE FIRE WEATHER THREAT OVER THE WEEKEND AND INTO NEXT WEEK.

JUNEAU-ADAMS-

.TODAY...

SKY/WEATHER.....PARTLY SUNNY.
MAX TEMPERATURE.....70-75.
MIN HUMIDITY.....20-25 PERCENT.
20-FOOT WINDS.....SOUTH WINDS 14 TO 17 MPH.
HAINES INDEX.....5 OR MODERATE.
HOURS OF SUN.....8 HOURS.
PRECIPITATION.....NONE.
MIXING HEIGHT.....AROUND 10900 FT AGL (AVE 12-6 PM).
TRANSPORT WINDS.....SOUTHWEST AROUND 18 MPH (AVE 12-6 PM).
SMOKE DISPERSAL.....AROUND 198000 OR EXCELLENT (AVE 12-6 PM).

.TONIGHT...

SKY/WEATHER.....MOSTLY CLOUDY. A 30 PERCENT CHANCE OF SHOWERS AND THUNDERSTORMS.
MIN TEMPERATURE.....47-51.
MAX HUMIDITY.....90 PERCENT.
20-FOOT WINDS.....SOUTH WINDS 10 TO 15 MPH.
PRECIPITATION.....SCATTERED TRACE TO 0.05 INCH AMOUNTS.

.FRIDAY...

SKY/WEATHER.....MOSTLY CLOUDY. CHANCE OF SHOWERS AND THUNDERSTORMS. CHANCE OF RAIN 30 PERCENT.
MAX TEMPERATURE.....69-74.
MIN HUMIDITY.....53-55 PERCENT.
20-FOOT WINDS.....SOUTHWEST WINDS 10 TO 15 MPH.
HAINES INDEX.....4 OR LOW.
HOURS OF SUN.....4 HOURS.
PRECIPITATION.....SCATTERED TRACE TO 0.05 INCH AMOUNTS.
MIXING HEIGHT.....AROUND 5800 FT AGL (AVE 12-6 PM).
TRANSPORT WINDS.....SOUTHWEST AROUND 15 MPH (AVE 12-6 PM).
SMOKE DISPERSAL.....AROUND 88000 OR EXCELLENT (AVE 12-6 PM).

.FORECAST DAYS 3 THROUGH 7...

.FRIDAY NIGHT...MOSTLY CLOUDY. CHANCE OF SHOWERS AND THUNDERSTORMS. LOWS 50 TO 55.
SOUTHEAST WINDS 7 TO 12 MPH. CHANCE OF RAIN 40 PERCENT.
.SATURDAY...MOSTLY CLOUDY. CHANCE OF SHOWERS AND THUNDERSTORMS. HIGHS 65 TO 70.
SOUTHEAST WINDS 10 TO 15 MPH. CHANCE OF RAIN 40 PERCENT.
.SATURDAY NIGHT...MOSTLY CLOUDY. CHANCE OF SHOWERS AND THUNDERSTORMS. LOWS 55 TO 60.
SOUTH WINDS 12 TO 17 MPH. CHANCE OF RAIN 30 PERCENT.
.SUNDAY...MOSTLY CLOUDY. CHANCE OF SHOWERS AND THUNDERSTORMS. HIGHS 70 TO 75.
SOUTH WINDS 10 TO 15 MPH. CHANCE OF RAIN 40 PERCENT.
.SUNDAY NIGHT...MOSTLY CLOUDY. CHANCE OF SHOWERS AND THUNDERSTORMS. LOWS 50 TO 55.
WEST WINDS 5 TO 9 MPH. CHANCE OF RAIN 40 PERCENT.
.MONDAY...MOSTLY CLOUDY. CHANCE OF SHOWERS AND THUNDERSTORMS. HIGHS 65 TO 70.
NORTH WINDS 8 TO 13 MPH. CHANCE OF RAIN 40 PERCENT.
.MONDAY NIGHT...MOSTLY CLOUDY. SLIGHT CHANCE OF SHOWERS AND THUNDERSTORMS. LOWS 45 TO 50.
NORTH WINDS 7 TO 12 MPH. CHANCE OF RAIN 20 PERCENT.
.TUESDAY...PARTLY SUNNY. HIGHS 65 TO 70. NORTHWEST WINDS 5 TO 7 MPH.
.TUESDAY NIGHT...PARTLY CLOUDY. LOWS 45 TO 50. LIGHT WINDS.
.WEDNESDAY...MOSTLY CLOUDY. CHANCE OF SHOWERS AND THUNDERSTORMS. HIGHS 65 TO 70.
EAST WINDS 7 TO 12 MPH. CHANCE OF RAIN 30 PERCENT.

SHEA

FIRE WEATHER PLANNING FORECAST...**UPDATED**

NATIONAL WEATHER SERVICE LA CROSSE WI - 1015 AM CDT THU MAY 5 2005

...**FIRE WEATHER CONDITIONS MAY APPROACH CRITICAL LEVELS TODAY...**

.DISCUSSION...AN APPROACHING LOW PRESSURE AREA WILL INCREASE SOUTH TO SOUTHWEST WINDS ACROSS THE REGION TODAY. BESIDES THE BREEZY CONDITIONS...TEMPERATURES WILL BE HIGHER TODAY AS COMPARED TO WEDNESDAY. THIS TYPE OF WEATHER PATTERN WILL ALSO GRADUALLY INCREASE LOW LEVEL MOISTURE...BUT RELATIVE HUMIDITIES COULD STILL DROP AS LOW AS 20 PERCENT MAKING FOR CRITICAL CONDITIONS. RAIN CHANCES WILL INCREASE TONIGHT AS THIS STORM SYSTEM MOVES THROUGH...WITH ADDITIONAL RAIN CHANCES THROUGH THE WEEKEND. HUMIDITIES WILL BE HIGHER AFTER TODAY WHICH SHOULD LESSEN THE FIRE WEATHER THREAT OVER THE WEEKEND AND INTO NEXT WEEK.

JUNEAU-ADAMS-

NO CHANGES TO THIS GROUP

.TODAY...

SKY/WEATHER.....PARTLY SUNNY.
MAX TEMPERATURE.....70-75.
MIN HUMIDITY.....20-25 PERCENT.
20-FOOT WINDS.....SOUTH WINDS 14 TO 17 MPH.
HAINES INDEX.....5 OR MODERATE.
HOURS OF SUN.....8 HOURS.
PRECIPITATION.....NONE.
MIXING HEIGHT.....AROUND 10900 FT AGL (AVE 12-6 PM).
TRANSPORT WINDS.....SOUTHWEST AROUND 18 MPH (AVE 12-6 PM).
SMOKE DISPERSAL.....AROUND 198000 OR EXCELLENT (AVE 12-6 PM).

.TONIGHT...

SKY/WEATHER.....MOSTLY CLOUDY. A 30 PERCENT CHANCE OF SHOWERS AND THUNDERSTORMS.
MIN TEMPERATURE.....47-51.
MAX HUMIDITY.....90 PERCENT.
20-FOOT WINDS.....SOUTH WINDS 10 TO 15 MPH.
PRECIPITATION.....SCATTERED TRACE TO 0.05 INCH AMOUNTS.

.FRIDAY...

SKY/WEATHER....MOSTLY CLOUDY. CHANCE OF SHOWERS AND THUNDERSTORMS. **CHANCE OF RAIN 30 PERCENT.**
MAX TEMPERATURE.....69-74.
MIN HUMIDITY.....53-55 PERCENT.
20-FOOT WINDS.....SOUTHWEST WINDS 10 TO 15 MPH.
HAINES INDEX.....4 OR LOW.
HOURS OF SUN.....4 HOURS.
PRECIPITATION.....SCATTERED TRACE TO 0.05 INCH AMOUNTS.
MIXING HEIGHT.....AROUND 5800 FT AGL (AVE 12-6 PM).
TRANSPORT WINDS.....SOUTHWEST AROUND 15 MPH (AVE 12-6 PM).
SMOKE DISPERSAL.....AROUND 88000 OR EXCELLENT (AVE 12-6 PM).

.FORECAST DAYS 3 THROUGH 7...

.FRIDAY NIGHT...MOSTLY CLOUDY. CHANCE OF SHOWERS AND THUNDERSTORMS. LOWS 50 TO 55.
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.TUESDAY...PARTLY SUNNY. HIGHS 65 TO 70. NORTHWEST WINDS 5 TO 7 MPH.
.TUESDAY NIGHT...PARTLY CLOUDY. LOWS 45 TO 50. LIGHT WINDS. .WEDNESDAY...MOSTLY CLOUDY.
CHANCE OF SHOWERS AND THUNDERSTORMS. HIGHS 65 TO 70. EAST WINDS 7 TO 12 MPH.
CHANCE OF RAIN 30 PERCENT.

SHEA/DTJ

COTTONVILLE FIRE DISPATCH

MAY 5, 2005

LOG



Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1333		Dyracuse	Small white, 175 degrees, 5 miles	
1334		Dyracuse	Looks like it is growing	
1334		FRD RGR	10-76 reported fire, Town of Preston, 700 block of Chicago Court, start 2 HU, patrol and the SEAT	
1334		SEAT Mgr	SEAT & Patrol copied	
1335		FRD 3	10-76 (responding from Big Flats)	
1335		FRD 1	10-76 (responding from Friendship)	
1336		Necedah	79 degrees	
1336		Skyline	22.5 degrees	
1336		Patrol	10-8 off Necedah	
1338		FRD RGR	Start 2 more HU this direction - Should be in section 03-T18N-R06E	
1338	FRD 2 & NEK 1		That would be you	
1338		NEK 1	Copied, verified location (responding from Rome - D & 13)	
1338		Patrol	It is building and turning gray	
1339		FRD 2	10-8 (responding from Dimond's - Z & 21)	
1339		NEC RGR	Sliding to the East	
1339		NEK RGR	10-20 Badger & 13	
1340	FRD RGR	FRD 3	Can you confirm the best access is Cottonville east to 10 th Avenue?	
1340	ALL	FRD RGR	Cottonville Avenue to the east to 10 th Avenue to the North	
1341		Patrol	About 2 minutes out - Has the SEAT been ordered (10-4)	
1341		T-475	Off Necedah, Smoke in sight, headed eastward	
1342		Coop RGR	10-21 - I am about 5 miles away	
1342		Patrol	10-23, stand by for size up	
1343		Patrol	1 acre, burning in mature pine, some torching - in front of this you got about 1/2 mile of 10-15' pine, - one travel trailer that is threatened - Not moving real fast on the ground, staying mostly on the ground, just sporadic torching, but when it gets to the short pine it is probably going to torch.	
1343		FRD RGR	Order 2 additional HU, for a total of 6 and 2 rangers - and the SEAT was ordered correct?	
	FRD RGR		10-4, SEAT is air borne with smoke in sight	
		FRD RGR	10-4, I was on another frequency with, I'll switch to air attack on red	
1344		NEK RGR	Copied, South bound	
1344		Camp	Just now picking up that smoke that Necedah tower had, I have that at 68 degrees, 12-13 miles out, dark gray smoke	
1345		NEC 1	(No response, was covered by T-475 traffic)	
1345		T-475	With Rapids Air Attack at the Friendship Incident.	
1345	NEC RS		10-21C - Calling to get NEC 1 10-76 Friendship's fire	
1346		FRD 3	10-23	
1346		Knapp	Large smoke at 106 degrees (This tower is located in Jackson County and is looking in excess of 35 miles to see this smoke)	
1346		Barrier	Post-it Note - Enroute	
1347		FRD RGR	Order 2 more HU, for total of 8 - 2 Heavy dozers, and 2 additional rangers.	
1347		FRD LDR	10-23, - Let's get the team set up at Big Flats - Notify the Area Ranger	
	FRD LDR		Area Ranger is right here	
		FRD LDR	Have him give me a call on my cell	
1347		SH For	Unreadable	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1348	Schwingel		10-21C - Courtney is calling Schwingel as requested. Schwingel tells him, "This is it!". Steve asks what is on the other half mile into that pine. John says it might turn into some hardwood, he is going to try and get up there and take a look at it. John tells Steve, "I think we need to pull the plug on it, she is boiling black, and she is rolling." Steve says, "Let's do it, right at Big Flats then." They concur that Big Flats will be ICP. John says, "We have S-SW wind, it should not be in the way, it would be a good spot. This is where we had the mock fire training, same damn location." As the conversation ends John is going try and check out the head end, and Steve reminds him to start setting up structural branch. John felt they had some time there, but said he would try and help get that going. Steve indicated he would be 10-76 "pretty soon."	
1348		NEC 1	10-8 east	
1348		NEC RGR	I suspect I should continue (he was already sliding east)	
		NEC RGR	10-4	
1348		Coop RGR	10-23	
1348		SH For	I have been moving east, would you like me to continue?	
		SH For	10-4	
1349	WDL 2		Respond to the fire (responding from 13 & 82)	
		WDL 2	10-8	
1349	WDL RGR		Respond to the Friendship fire.	
1350		WDL RGR	10-8 to Friendship fire	
1350		FRD For	10-76 Big Flats with the trailer	
1351		T-475	Off Friendship Incident, 10-19 Necedah for load & return	
1351		FRD 2	10-23	
1352		NEK RGR	10-23, switching to red	
1353	Adams S.O.		10-21C - Requesting that they get the Adams County dozer to the fire. They agree to do that.	
1355	NEC 2		Head for that fire as well (responding from standby at A & 58 south of Necedah)	
		NEC 2	Copied	
1356	BAB 1		Move back toward Nekoosa (he was on standby at the old Babcock Ranger Station)	
		BAB 1	Copied, East or west side of Nekoosa?	
		BAB 1	East side	
1356		NEK 1	10-23	
1357		T-475	Arriving at Necedah	
1357		NEC RGR	10-23, Switching to red	
1358	WHG 1		(No response)	
1359		AREA RGR	10-8	
1400		SH For	I'm a half mile out, switching to red	
1402	Maus For		Are you 10-76 fire in Adams County? (No response-trying to confirm that he knew of the fire and was responding)	
1405		BAB RGR	10-21C - Beck calling in, wants to know where she should be. Very poor phone signal. We tell we will get back to her on radio.	
1405		FRD For	10-23 Big Flats with the trailer	
1405		FRD RGR	I am now the Cottonville IC - This is the Cottonville Fire - Can you order 2 Hand crews and 2 additional HU	
1407		Barnier	10-21C - Wants to know if we have ordered the 215's out of Minnesota. The answer is no. The fire has just jumped the road (Cottonville?) and that was kind of Jim's trigger. Jim asks for Arvid, but he is on another phone. Jim wants us to give Arvid the thought, as they are an hour and a half out. (Not sure where Jim was, but he indicated he could see the smoke from where he was.)	
1407		T-475	Off Necedah, 10-76 Friendship Incident	
1407		Maus For	10-76 Big Flats Town Hall	
1407		RPD LDR	10-23 Big Flats Town Hall	
1408		Tomah 2	Standing by in Shennington (Hwy 21 at Juneau/Monroe County line)	
1409	BAB 1		Plan on going right to the fire	
		BAB 1	Copied go directly to the fire	
1409	WHG 1		(No response)	
1411		UWFWS	10-21C - Jennifer calling in response to Steve's request for help. She has a GIS tech trainee, and wants to know if it is okay to bring him along. We tell her no problem. She asks for Steve's cell and is given 715-459-3794.	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1411		WHG 1	(Answering above call)	
	WHG 1		Plan on going right to the fire, and I assume that you have the Point Crew following you.	
		WHG 1	That is correct	
1411		NEC 1	10-23, switching to red	
1412		NEK For	10-23 ICP	
1415		Pray 2	I will be on standby at City Point (Hwy 54 and the Wood/Jackson County line)	
1416		IC	I would like to order an additional aircraft for air attack	
1417		BAB RGR	10-21C - She just heard over the radio that there might be something on Buttercup. We think that is how far the fire has progressed. She again asks where she should be, and was told we were going to have her with Bob at Nekoosa but he has been sent to the fire. She tells us she is on the east side of the river at Nekoosa now. (poor/noisy signal)	
1417		NEK 2	10-21 - 10-23	
1419		WDL 2	10-23	
1420		WDL RGR	10-23	
1421		AREA RGR	10-23	
	AREA RGR		Do you want me to call with personnel	
		AREA RGR	We'll call you in a little bit	
1421		WAU RGR	10-21C - Calling to see what is going on. WAU RGR & WAU 1 are at Mosinee	
1422		WDL 1	(poor signal - dispatch didn't respond back)	
1422		NEC 2	10-23, switching to red	
1422			Unit calling Rapids repeat	
		WDL 1	This is WDL 1, you want me to hold up at 82 & 13, or continue?	
	WDL 1		Hold up at that location	
1423	MIFC		10-21 - While Kris is talking to WDL 1, Lloyd has made the phone call, per Arvid's direction, to order one CL-215 (not recorded)	
1423		NEC 2	10-23, switching to red (This is a repeat, as dispatch apparently missed him the first time - both were on the tape - first one was weak & somewhat broken & WDL responded when unit calling was asked to repeat)	
1424		WDL 1	Standing by at 82 & 13	
1427	Jacob (cell)		10-21B - Trying to contact Ray Jacob for assistance in structural branch, left message for him to call me back (Ray is the retired Grand Rapids Chief)	
1427	Jacob (home)		10-21B - Second attempt to locate Ray. Talked to his wife, and found out he was up north.	
1428	Murphy		Trying to reach Jerry and Kathy Murphy for structural and IMT assistance (Jerry is retired Grand Rapids Chief & Kathy has trained with the IMT team)	
1429	Loock		Contacted Tom Loock for assistance, he indicated he would be on the way right away. (Tom is a part of the Grand Rapids FD)	
1431		T-475	Off Friendship incident, 10-19 Necedah for load & return	
1432	Burnette		10-21B - Called Scott Burnette, Grand Rapids Chief, to ask for his assistance in O/H at Big Flats. He declined as they had been put on standby to help out as well.	
1434	Minor		10-21B - Asked Pittsville Chief, Jerry Minor if he could help out at ICP. He had to make a couple quick calls for coverage there, then he would be on the way.	
1435		BRF Disp	10-21B - If BRF SEAT heads your direction, we will need to know what frequency our air attack is using. We gave him 122.925. BRF Disp was still on the phone when the IC gave the resource order below, so he was pretty sure that T-405 would be headed our way, as what they had was settled down.	
1436	Plover FD		10-21C - Called for Chief, Tim Kluck to assist at Big Flats ICP. He agrees to come and bring Dale Garski & Mark Damrau with. He asks if he should respond 10-33, I tell him yes, as they have a crown fire going.	
1436		T-475	10-20 Necedah,	
1436		IC		
	IC		Go Ahead	
1437		IC		
	IC		Go Ahead	
		IC	I'd like another resource order: 4 additional HUs, 2 additional RGRs, 2 additional Hvy Dozers,	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1438	WDL 1		Head north to Friendship's fire	
1438		Ray Jacob	10-21C - An apologetic Ray calling to say that he is at Boulder Jct. I had previously tried calling him to assist with structural branch.	
1439		Quilty	10-21B - I'm coming up to Monroe Center on Z, not at fire HQ yet. Will be asking for what units are on the fire, just giving you a heads up. I'll be calling you when I get there.	
1440	BAB RGR		Go in service to Friendship's fire	
1440	WHG RGR		Go in service to Friendship's fire	
1441		WHG 1	10-21B - Should I check in with Big Flats to find out where I should go? We told him yes. He indicated that the Point crew was right behind him. And confirmed that it was Big Flats Fire Station	
1442	Point Crew		10-21C - Tristan answered, and was asked what the chances of pulling together a 10 or 20-person hand crew. He wants to know what is the minimum we would take. He is told that if he can only get 5 we will take them. He was told they should report to Big Flats Fire Hall.	
1442		WAW RGR	Myself & WAW 1 are going to be standing by at the Portage County Line	
1444		BAB RGR	10-21B - Where do want us, ICP or? They were told ICP	
1445		T-475	Off Necedah, 10-76 Cottonville Incident	
1445		BAB 1	10-23, switching to red	
1446			10-21B - This is not really a phone call but rather conversation recorded as the phone has been picked up to dial someone. "Not yet, called Mike to let them know we were up to, but didn't ask for anything at this point". This is probably Mike Belsky at Necedah Refuge.	
1447		Maus For	10-7, Big Flats town hall	
1447	???		10-21B - (was wrong number - was trying to reach Wood Cty for a dozer)	
1448	Wood Cty		10-21B - (no answer)	
1449	Wood Cty		10-21B - Made contact for Wood County dozer. Party indicated that he had just talked to the operator, and that he was on the way in, cat is loaded , so he would be on the way shortly	
1452	NEC REF		10-21B - Dialed main office, and they couldn't connect me with Belsky or Carter right away	
1452	4400	C-193	Available for a 21	
	C-193	4400	Actually I am on the way to Big Flats	
1453		Rpd Air Att	Never mind, I got my answer	
1453		Hintz	10-21C - Calling from ICP to reconcile resources ordered. Has a list from Jodi, wants to double check it.	
<p>We have: Heavy Units: FRD 1, 2 & 3 - NEK 1 & 2 - NEC 1 & 2 - WDL 1 & 2 - BAB 1 - WHG 1 John points out that we have given him 11 heavy units and Jodi indicates she has ordered 14. Arvid informs him that 3 more had been ordered through the command center about 15 minutes ago, but we have no idea who they will be. Heavy Dozers: Nowicki - Adams Cty - Wood Cty is ordered - Trying to order the Refuge dozer right now Rangers: FRD RGR - Co-op RGR - NEK RGR - Barnier - FRD LDR - SH For - NEC RGR- WDL RGR - BAB RGR - WHG RGR (There is some discussion between John and Arvid as to whether or not these should all be counted as rangers.) Aircraft: CL-215 has been ordered, but have not received confirmation and an ETA. The 802 out of BRF has been ordered, we think they are launched, but no ETA. Necedah air tanker and patrol are on scene. Another air attack has been ordered out of Madison, but no confirmation yet, may have already been talking with Clark. Point Crew: Ordered 2 crews (not mentioned here, but a 5-person Point responded with WHG 1) Command Center: Activated</p> <p>John indicates that the lists "pretty much match."</p> <p>Arvid asks for a contact number for ICP. John says to check FAP for the Big Flats FD phone number or use Courtney's cell or Hintz's cell. No others at this time.</p> <p>Before the conversation ends we get the 1457 call from MIFC, and Arvid relays that to John, emphasizing that Clark and Courtney need to know. (1501 Call ends)</p>				
1456	NEC REF		10-21B - Still on the call that began at 1452. She was going go on the radio and have Mike call me.	
1456		NEC REF	10-21B - Belsky returning call. Agreed to send the D-7	
1457		BAB RGR	10-7 ICP	
1457		MIFC	10-21B - Bonnie from MIFC in Grand Rapids - ETA for Air Attack #4 is 60 minutes, for the CL-215, T-263, 80 minutes	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1501		Com Ctr Blair	10-21 - 2 HU, with ETA of 15:35, WAP 1, WAT 2 will try to back fill from north	
1501		WHG 8X	10-7 RS	
1503		SEAT Mgr	10-21B - If you have any way of contacting ICP we can give that 802 750 gallons of foam, more foam than retardant, we can only give them maybe 600 gallons of retardant. We suggested Courtney's cell phone, 715-459-3794, and also gave Jayne the fire hall number: 608-564-7754	
1507		WAU 8X	10-7 RS	
1507		WDL 1	10-23	
1508		T-475	10-76 Friendship to load foam - I think T-405 is going to head over to Necedah to load retardant so you'll need a crew there.	
		T-475	You said, will not need a crew? (no response)	
1508		Logistics	10-21B - Jim Storandt calling with the number for Logistics, 608-564-7754 (the fire hall number). He also relayed a request from Steve Grant to have some one come down and help communicate with plane, suggested Greg Dahl, Nina Stensberg, or Jim Keir. — Made Jim aware of WAT 2 (ETA 1535) & WAP 1 ETA (1555)	
1510		T-475	10-23 Friendship	
1510		Shirley Bargander	10-21B - She had just found out about the fire, and wanted to know if the overhead team had been called, and if so why wasn't she called. Don & Mike were there too. She was told they could all go to work if they go down. They didn't want to go down unless there was something to do. She was given the ICP number to call direct. (When we had attempted to page the Incident Management Team earlier, we got a message saying the number was temporarily out of service, so Arvid had started working his way down the list of team members. Later we found out the company had never activated the pager number following delivery of the pagers)	
1511		Green	10-21C - Rick is calling to let us know he is in the shop at Sandhill (887-6336), and available if there is a need. He could put the tank on the 4x4.	
1512		WAP 1 Blair	Crossed the Waupaca line into Portage County, 10-76 Big Flats 10-21 - Calling to advise that POY HU, Brooke, will be 10-76 Big Flats with an ETA of 1610 — ANT 1 to Whiting with an ETA of 1 hour — MED 1 to Wausau with an ETA of 1600	
1514		Storandt	10-21C - Jim is requesting an updated weather forecast.	
1514		WAT 2	Have entered your DG, 10-76 C & 13	
1515		Logistics	10-21B - Storandt calling to relay an order from Courtney that Mark Rasmussen should get here immediately. He was advised that Mark was on his way a while ago.	
1515		Murphy	10-21C - Jerry is returning my call. I had left a message earlier. He is a part of the IMT for structural.	
1516		Wood Cty	10-21B - Doug called wanting to know if we had called his cell phone. He was told that we had called him to get the county dozer to the fire, and that we had talked to one other person to get the dozer moving. He was also given the directios	
1517		WOD Disp	10-21B - Dave C. calling to advise that Pete Solin, with a rider, in ANT 1 has just left for Whiting. Estimating an hour and 20 minutes.	
1519	WAU RGR & WAU 1	WAU 1	Come to Rapids (we're standing by at Marathon/Portage County line) Copied, 10-76 Rapids with WAU RGR	
1523	Lisa Wimme		10-21B - Kris is calling his wife to let her know what is going on and that he don't know when he will get home, and won't make the meeting tonight.	
1526		Point Crew	10-21B - Tristan from UWSP advises that two 5-person crews will be on the road at 1600. Clarified directions with him. He indicated that he had just heard a call for mutual aid from Plover	
1529		OPS	10-21B - John Schwingel - Advising that he is Operations, and that he is at ICP and on his DNR cell phone. Wants to know resources ordered that are not on scene. He was told that Arvid had just given that info to Hintz. He was also advised about the 2 5-person Point crews leaving at 1600, and that one Point crew should already be on scene. John also inquired as to the ETA of the CL-215. - Phone was passed to Arvid. Arvid inquires about LE situation. John indicates that Adams County Sheriffs Dept. is there. He doesn't know of any wardens on scene. Arvid advises that Falstad (Area Warden) just showed up here and will be 10-76 and will try to get other wardens to respond as well. John asks again about the CL-215. He is told that that over 20 minutes ago we were given an ETA of 80 minutes, and the lead plane would be 20 minutes ahead. Arvid asks if the second, backup, aircraft has shown up yet. John doesn't know. Arvid gives John a heads up that we are at least an hour and a half out for additional heavy units, and to plan accordingly. John know the Whiting Ranger is coming and wants to know where he is. Arvid says he was ordered a long time ago. John needs another ranger right now and Arvid promises him one.	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1531	Storandt		10-21 - Gave Jim the forecast	
1533		Air Att	Overheard on red: Jumped Brown Deer	
1534	WHG RGR		Location?	
		WHG RGR	Just passed Akron Ave and 9 th , westbound on Akron	
1535	WAU RGR		Report to ICP	
		WAU RGR	That's at Big Flats, correct?	
	WAU RGR		Affirmative, at the fire hall	
1536	WAU 1		Keep on your way over here to Rapids	
1536		WAP Disp	10-21B - Deb is inquiring about any possible permits north of Nelsonville, north of Amherst, as patrol has picked up something. She will get WAP Forester to check it out.	
		WAU 1	Copied, just passed HH, getting on to Hwy B in Plover	
1539		Dyracuse	10-21B - "I don't suppose I need to tell you that the flames are shooting out ahead of that. When do I bail out of here? Don't forget I am here." Estimates that flames are up a couple hundred feet. He was told that if he felt a need to get out of the tower, just give us call to let us know he was leaving.	
1540		T-475	Off Friendship, 10-76 incident	
1541		REF D-7	Go to command post or to some other location?	
	REF D-7		Report to ICP on Hwy 13 & Hwy C, just east on C	
		REF D-7	10-4, I am on 13 now	
1547	Aanansen		10-21 - Called Joel to advise him of the fire and that Plum Creek property was involved. He and Jon are at a Plum Creek meeting in Appleton that will continue tomorrow.	
1549		T-475	Off Cottonville incident, 10-76 Friendship to load & return	
1550		Jason Guthrie	10-21B - Just getting off duty at Volk Field. He is a rider at Necedah, and is offering to help. He is told we do not have any outstanding orders at this time.	
1552		Djupstom	10-21B - Bruce is calling to find out what his cell phone number is, he couldn't find it in the Action Plan. It is 715-459-3824	
1552		T-475	Arrived at Friendship	
1556		POY HU	10-20 Dells, 10-76 north	
1557		???	10-21B - Party calling lives right on the edge of Adams County across Hwy 73, into Portage County, and says it looks there is a fire south in Adams County and do we know anything about it. She is told it is east of Hwy 13 and south of Hwy C	
1601		C-160	10-8 IC	
1603		MIFC	10-21B - Brian Weise calling to find out just what we have going. Was told the fire had made about a 3-mile run as near as we can figure out in dispatch, and that there had been some structure loss, but that we did not have a lot of detail. We also told him that we had just heard traffic but moving stuff around to protect structures, and talk about evacuation. He indicated they were getting a little stretched with the two going to us, and may to have start doing some prioritizing.	
1607	Dyracuse		10-21B - Kris called Richard to see how things were going, and ask him if he had a camera. He had a camera, but it was down in his truck. He also seemed more comfortable as it now appeared the would be going east of him. He could see a plane, bigger than patrol, coming in. He said it didn't look like they were making any progress on the head.	
1607		WAU 1	10-7 Rapids	
1608		T-475	Off Friendship, 10-19 Cottonville Incident	
1610	Dyracuse		10-21B - We told him he could go down and get his camera.	
1611		WAU 1	Can some one let us in the back door?	
1611		MED 1	10-20 North end of Wausau - Still want me to continue on to the Wausau Service Center?	
	MED 1		That is correct for now, just stop at Wausau SC	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1611	MIFC		10-21C - We had been hearing traffic that two CL-215's were coming, but we had only ordered one through dispatch, and we had only been given an ETA for one lead plane and one CL-215. We were concerned that folks on the fire might be thinking two CL-215's when it was really two aircraft, one lead plane (Air Attack #4) and one CL-215 (T-263). Arvid had Lloyd call MIFC to clarify just what was happening.	
			Anna at MIFC said that T-267 was also being sent. Since we told her that dispatch had not ordered it, she checked and found that it had been requested by Air Attack #4. T-267 had not left yet, and she told us it would be two hours once it leaves. Lloyd is conversing with Arvid during this call and the decision is made to put the second CL-215 on hold upon hearing the two-hour flight time, and that it is not yet on the way. Anna requests our phone numbers, which we give her. (Call ends at 1616)	
1613		Kildow WHG RGR	10-21B - Brad is now Wildfire Branch, taking over from Beck & she is being deployed as D Division Sup. Brad also indicated that he had his cell phone with him.	
1616		Storandt	10-21B - Indicated a need for the mechanic from BRF, he was also looking for feed back on what other HU are 10-76. They will now start faxing orders.	
1616	Anderson		10-21C - Local resident, Sandy Anderson, calling, she has heard about the fire south of Rome. She was planning on leaving town tonight and was concerned about leaving her 88-year old mother alone. She doesn't know east from west. She finally decides that she is east of 13. We try to get her squared away as to where the fire is now, where it might be heading based on current winds, and make her aware that some evacuations have occurred, and were continuing as we spoke. She was told it had to be her call as to whether or not to leave her mother alone.	
1617		WAW RGR	10-23	
1617		T-475	Off Cottonville Incident, 10-19 Friendship to load & return	
1618	BRF Disp		10-21B - Relayed the order for the mechanics to report to Big Flats. Directions to ICP provided.	
1619		MED 1	10-7 Wausau SC	
1620		??	(On the tape it sounds like T-475 saying "Friendship" - a very poor, short and easily missed transmission.)	
1625		Dyracuse	10-21B - A rather breathless towerman calling to let us know that he is back in the tower, and he had also driven his truck up closer to the tower. He also indicates that he can now see spots ahead of the main fire. Kris assures him that the plane will be watching for spots.	
1628		SEAT Mgr	T-405 loaded, will be leaving Necedah soon	
1631		POY 1	10-23, Big Flats & C	
1632		SEAT Mgr	10-21B - Letting us know that T-405 will refuel at Point after dropping retardant on the fire. She has two volunteers from the fire department helping T-475 load at Friendship, she has sent extra foam over.	
1635		ANT 1	10-20 Plover, continue to Whiting RS?	
	ANT 1		That's affirmative	
		ANT 1	10-4, reporting to Whiting with a rider	
1635		T-475	Off Friendship, 10-76 Cottonville (on the tape it sounds like he says Canyonville)	
1636		Djupstrom	10-21B - Bruce is looking to have two more logistics type people - only has two now.	
1636		Dyracuse	10-21B - Asking if we have heard from the big tanker as he has not seen him yet.	
1640		Djupstom	10-21B - Bruce has a resource order: 4 Rangers, 4 Heavy Units, 2 Heavy Dozers, 2 Hand crews (10-person if possible), and from Tomahawk, the equipment truck and cache trailer.	
1641		WAP 1	10-21B - We have checked in and have an assignment on the left group.	
1641	MIFC		10-21C - Told Bonnie that they had decided to take the second CL-215 if we can get it. She "will call up there and see if they are willing to let it go. We have just busted a couple up this way too." She will call us back.	
1642		BRF Disp	10-21B - Pat indicates he has gotten a hold of the mechanics, two mechanics are pulling out now. Anticipate an hour to an hour and 15 minutes. ETA 1800 Cell phone is 715-797-8587	
1643		SEAT Mgr	10-21C - Jayne has June Gill from WRJC Radio Station looking for a contact for information on the fire, She given 715-459-3824, and told that will probably get her Jennifer Rabuck, as we don't think Weitz is on scene yet.	
1643		Point Crew	10-21B - Tristan calling to advise that the two crews were 10-76 at 1635. Point Crew #2 & #3. Kris asked if he could possibly find another 20 people. Tristan was very doubtful that he could find anyone as he had already left messages for others that had not already responded.	
1645	Lepinski		10-21C - Phil is calling in from home, has seen that we have "quite a fire going" and that he is available. He is told to report to Big Flats.	
1644		Storandt	10-21B - Jim was immediately advised of the 1800 ETA of the 2 mechanics from BRF, and given their cell phone number - Jim indicates he was in process of setting up for ICP shift change, They should report here by 2030 tonight.	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
			5 for Plans, 2-3 for logistics, 2 for operations. - Kris informed him that we were working on Bruce's last order, but that we were running dry. Jim commented about the possibility his of being there all night.	
1647	Blair		10-21C - Relaying resource order: 4 Rangers, (Blair jokes, "This is for day time right?") 4 HU, Two 10-person hand crews. (Point is tapped out) He is told we also have an order for heavy dozers, but we feel we should be able to fill that locally. He is also told that WAU 1 was here at Rapids and has been sent as one of the four requested. There is a discussion about ANT 1, MED 1, Pray 2 and TOM 2 that have been moved up to cover. With Arvid's input the decision is made to pull ANT 1, TOM 2 & Pray 2 to the fire, and Blair will look into more backfilling. Blair leaves it to us to decide whether or not to bring MED 1 farther south. Blair is interested a more complete resource order for 2100, and will talk when Arvid has a clearer idea on that.	
			Arvid takes the phone and relays an order for folks we would like at ICP 2030: 5 for Plans, 3 for Logistics, 2 in Operations. Blair is thinking about bringing somebody like Huppert for an IC for the night. Arvid is in agreement and says somebody like that could be IC or Ops. Arvid expects to talk to Courtney before too long. Blair was thinking about Tom Morini (sp?) for structural for the night. Arvid asks Blair if he has enough help down there. Blair's response was "Trent & Jolene are here, we are in good shape. Not big numbers, but very high quality."	
			Arvid suggests Blair have Trent call Verizon HQ and get some additional phone lines into ICP. Verizon hasn't been too willing to do that. "Have Trent shake a big stick".	
			Arvid indicates to Blair that we are getting some media attention.	
			Arvid indicates to Blair that we do have a cause determined, but it is not being released yet.	
			Blair asks about additional needs for the night, and reminds Arvid that most things are coming a long way.	
			Arvid tells Blair that the second CL-215 was ordered after he talked to Courtney. (call ends at 1657)	
1647		WAU 1	10-76 Big Flats FD (He and rider were in Rapids Dispatch)	
1649		ANT 1	10-7 Whiting RS	
1649		T-475	Off the Canyonville Incident, Cottonville, Cottonville Incident, 10-19 Friendship to load & return	
1650		Dyracuse	10-21B - Towerman advises that the tanker is here now and is flying from the river, Petenwell. Can't see the drops because of the smoke.	
1650	ANT 1		Report to ICP at Big Flats (responding from Whiting)	
		ANT 1	Report to ICP at Big Flats, we are on our way	
		ANT 1	It is on C, east of Hwy 13	
1651	TOM 2		Report to ICP at Big Flats (responding from Shennington)	
		TOM 2	10-4, 10-76	
1652	Pray 2		Head for Big Flats (responding from City Point)	
	Pray 2		Did you copy?	
		Pray 2	10-4 Rapids	
1654	BRF Disp		10-21B - Advised Pat that we have taken Pray 2 and TOM 2. (they were standing by at the DG line at City Point and Shennington). Pat asked how things were going, and was informed of a guesstimate of 1200 acres, and that we had heard traffic about a stand on Hwy C.	
1655	Mike Lehman		10-21B - Kris was looking for Mike but got Jim. Jim said Mike was out in the field, and should be available by cell.	
1656	Mike Lehman		10-21B - This is where dispatch found out that Mike Lehman was riding with Klahn and assigned to "H" Division. Mike said he would call Chris Dahl and get the equipment repair truck and the cache trailer. There really wasn't a cache trailer, but that he would have them load stuff up, "we'll basically bring the shop". Mike volunteered to make the call since Chris Dahl was kind of new at this. Mike was going to call us back.	
1658	Dehling		10-21 - Contacted Dehling for a dozer	
1706	Haessly		10-21 - Contacted Haessly & Haessly for a dozer	
1706		NWS	10-21B - Dave Schmidt calling from NWS, LaCrosse. He is requesting a contact number for the ICP. - He is given 607-564-7754 and told it is the Fire Hall number, and that Courtney is the IC. He is also told there is a lot of pine and that it has made over a 3-mile run, with some structure loss.	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1707		WAW 1	10-7 Big Flats FD	
1710		MIFC	10-21C - Bonnie is calling to say that the second CL-215 has been diverted to a fire there. She will call us when it becomes available again, to see what our situation is.	
1710		T-475	Something about Cottonville incident (Poor transmission and partially covered by WAW 8X & MED 1 responding to fire in Marathon County)	
1712		Haessly	10-21C - Jesse is calling to confirm that they will get a dozer to us ASAP. She is estimating with in an hour. She gives us contact numbers: Jim 715- 459-3014, Don 715- 459-3015, The operator will be Jim Schwatke 715-459-5906	
1717	Djupstrom		10-21B - "Cottonville Information" answered Bruce's cell. She didn't know who Bruce was. Come to find out that Bruce had given his cell phone to use as a media contact. Jim Storandt came on the line. He was advised that the order for 4 rangers has been placed with the Command Center, we have filled the order for four HU and they are 10-76. They are WAW 1, TOM 2, Pray 2 & ANT 1. The two heavy dozers will be Bob Dehling out of Coloma, and Haessly out of Rapids. We are dry on hand crews, the Command Center may be working on that. Jim is told that we were still waiting a call back, from Mike Lehman, regarding the Tomahawk shop truck. Jim was to advise Courtney that the second CL-215 has been diverted. MIFC will advise if it becomes available. While Kris is on with Jim, Lloyd takes a call from Mike Lehman. Jim is advised that Tomahawk is 10-76 with shop truck with a 5 th -wheel trailer, and two spare plows. He is also told that the Command Center is working on the shift change.	
1718		Point Crew	10-21C - Kurt Wege calling to confirm which direction they go when they get to Hwy C. They are just south of Rapids now.	
1720		Lehman	10-21C - Calling to say he believes he has the request for the Tomahawk shop truck under control. Christer Dahl will be calling us when he has things organized. What he has coming is the shop truck, fifth wheel trailer, two spare plows, all the cache (tools, equip, nomex, that sort of stuff). And we will have a mechanic and a fabricator.	
1721		Djupstrom	10-21C - Bruce has two people, Joe & Eric, coming to Rapids for extra radios.	
1721		Haessly	10-21C - Jeff is calling about the dozer we requested. They have a D-5 size dozer at Stevens Point, with a trailer there, that can be there in about an hour if that is big enough, the D-7 is down. I told him we would take it. He questions how long it might be there. I tell him we don't really have any idea, as they have not declared containment yet, and that this will be the 6 th dozer to go to the fire. We confirmed directions to ICP.	
1723		T-475	Off Cottonville, 10-76 Friendship for load and return	
1727		NWS	10-21B - Dave Schmidt calling again, had tried ICP without success. He was really searching for details on damage, deaths, injuries, etc. Wanted to keep his higher ups informed, didn't want them to be blind-sided by the media. He was told we probably wouldn't be able to give out a lot of information from here.	
1727		Point Crew	10-21C - Tristan is calling about our request for another crew, he has four more people available that could be there by 1930, and Point #3 was sent with six, and one could be pulled from there to make a 5-person crew. He will call back with an ETA.	
1732		SEAT Mgr	T-405 at Necedah for a load & return	
1733		Pray 2	At ICP	
1733		Point Crew	10-21B - Caleb from UWSP Fire Crew, Point Crews 2 & 3 are at ICP	
1737		Storandt	10-21B - Jim was asking if anyone tried to get a hold of Carol Hollister. He was told that Arvid had tried and that she was out for two days. Jim indicated that Kissinger was there and was also in Finance.	
1738		TOM 2	At ICP, be checking in	
1742		Point Crew	10-21B - Tristan calling, he has a crew of four available, one person can't get off work until 2000 so expect 2100. And that is everybody..	
1742		T-475	Off Adams County (Friendship) 10-19 Cottonville Incident	
1742		ANT 1	10-7 Big Flats	
1744		Bob Hess	10-21B - Advising that he will be headed to Big Flats	
1745		Storandt	10-21C - Jim says that Courtney is requesting two wet ground units.	
1746	WAP Disp		10-21C - Asked Deb for both the Muskeg and the Bombadier	
1748	???		10-21C - (three calls attempted - all busy signals)	
1748		Storandt	10-21B - I just ordered two wet ground units, now they want two more for a total of four. Also some discussion on need for portable radios and charged batteries. (Joe Ancel was in dispatch and would be transporting the radios)	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1749		Nec Ref	10-21C - Mike Belsky says he got a call from Tom Zellmer, FMO at Portage, wanting to know about resources for the fire. Mike is asking what our wishes are, whether they should standby to cover the west side or respond to the fire. I tell him that we will definitely take the Marsh Master as we just had a request for two more wet ground units. (That makes three, and the Command Center is asked to come up with the fourth one). Apparently Zellmer is getting requests direct from the fire for resources. After a brief discussion with Arvid we tell Mike to send everything he can from the refuge. This will include a Type 6 4x4 w/2 ATV's, a 1200 gallon tender & the Marsh Master	
1752		Tomahawk	10-21B - Wayne calling to let us know that there is no decent cache anymore, wanting to know just what is needed. Kris agreed to call Logistics for greater detail and call Wayne back, or have Logistics call Wayne back at 715-453-1254.	
1754	???		10-21B - (two calls attempted, both got busy signals)	
1758	Tomahawk		10-21B - Advising Wayne not to worry about cache equipment, we got a hold of some one to pull a trailer from here with cache equipment we have here. - Wayne advised that the truck with fifth-wheel trailer had not left yet. Chris Dahl has called on another line and is talking to Lloyd at the same time. Lloyd took the phone with Wayne, Chris was talking about bringing pumps, hose etc.	
1758		Tomahawk	10-21C - Chris Dahl calling advise they should be leaving Tomahawk within an hour. Mike wanted us to bring the shop truck with fifth wheel trailer with two plows on it, and all the cache clothing, pumps & hose that is on hand. Will also have a mechanics tool box, as a mechanic and fabricator will be coming too. Chris will give us a call back when they are actually ready to leave. Chris is calling from his home.	
1758		T-475	Off Cottonville Incident, 10-19 Friendship for another load	
1805		NEC REF	10-76 with 3 units - Refuge 4x4 w/2 ATV's, Tender & Marshmaster	
1809		SEAT Mgr	T-405 loaded and off Necedah	
1811		SEAT Mgr	10-21B - The planes can fly until 2040, a half hour after sunset. That needs to be passed on to Clark.	
1813		Lloyd's wife	10-21C - Wants to know if I am working late.	
1816		T-475	Off Friendship, back to the Cottonville Incident	
	T-475		Relay to Rapids Air Attack that planes are cleared to fly until 2040	
1818		Storandt	10-21C - Jim is asking when they can expect the additional portable radios and batteries. He is told that Joe Ancel has just left and was going to pick up some additional "AA" batteries for the clam shells. Jim also asks about getting another updated forecast.	
1818		SEAT Mgr	10-21B - T-475 said he would tell Bob to call you, he couldn't understand the time.	
1818		TOM RGR	Checking in at ICP	
1819		Rpd Air Att		
	Rpd Air Att		Advised of the 2040 cut off for air tankers (tape does not record dispatch side of conversation when not on repeater)	
1820		Rpd Air Att	Copied that, 2040, I just left Rapids I am refueled, Intell aircraft is departing right behind me he is topped with fuel and heading back to the incident.	
1821		???	10-21C - Chris Bull from Rudolph volunteering to help. Claims to have experience. Phone is given to Arvid. Has been on fire crews in Spooner back in 1989-1996. After a discussion on his training, etc. Arvid declines the offer for now, but takes his number 715-435-4758.	
1823	C-160	C-293	(two calls - no response)	
1824		C-293	Are you in communication with C-160	
	C-293		Not directly, he is on the fire in Adams County	
		C-293	Do you know if he needs additional assistance at that location?	
	C-293		We can try to find out	
	C-293		Regional Forestry Leader indicates you should head down there.	
		C-293	Will drop my boat and call you for directions	
1825		C-193	Advise C-293 that C-160 has cell phone	
		C-293	I will try that number again	
1825		Quilty	10-21B - Quilty handed phone to Bargander. She wanted to know the fire number and was given #107. She also asked what time it started and was told that the tower shot was at 1333. She Started to ask about current weather and then said she was having a hard time hearing and would call back from another phone.	
1826		Bargander	10-21B - Calling back, and could hear better. She was given the current conditions: Temp 69, RH 23%, Wind SW 8-15. She was also looking for predicted weather for the night, and was told that we would take the current data and call for an updated spot forecast.	
1826		MED 1	Standing by at the Airport (Mosinee airport)	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1826		T-475	Off Cottonville fire, 10-76 Necedah for fuel and a load	
		SEAT Mgr	Copied, will be ready	
1828	NWS		10-21C - Called LaCrosse for an updated forecast. Forecaster, Dave Schmidt, is given current conditions at Necedah & Rome FTS stations. Forecast: Winds continue out of south, but should be dying down to 6-8 by 2000, RH at 50% by 2400, overnight max at 75-80%, Temp 55-60 by 2400, overnight low around 50. He indicates the fire is showing up on the satellite. I asked him to send copies. (call ended at 1837)	
1830	405	475	(No conversation other than 475 trying to raise 405)	
1832		T-475	10-20 Necedah	
1833		MIFC	10-21B - Bonnie calling for an update on T-263 and Air Attack #4. Call was transferred to Arvid on a non-recorded phone.	
1834		BRF RGR	10-23 Big Flats ICP	
1835		WAT 3	This is Bombadier, 10-76 fire at Big Flats, do you have a location for me.	
	WAT 3		Check in at ICP, which is at Big Flats Town Hall, Hwy C just east of 13.	
1836		Point Crew	10-21B - Jenna Lang calling, She has 9 people and indicates they can pull the WHG cache trailer to Big Flats. One of the 9 is/was a USFS employee and a dozer operator.	
1845	???		10-21C - Since getting the forecast there have been several (6 or 7) calls attempted, all got busy signals. During the second attempt there was a comment about trying to reach ICP.	
1845		SEAT Mgr	T-405 is loaded and off Necedah, T-475 is fueling and will be leaving soon.	
1849	Logistics		10-21C - Relayed the updated forecast to Storandt. Lloyd comments on the difficulty in getting through to ICP.	
1853	Lisa Wimme		10-21B - Kris called his wife to confirm a meal order for us in dispatch.	
1854		MON 2	10-7 Big Flats	
1857		Bargander	10-21B - Calling for the updated forecast. She was told we had just given it to Jim. Call was transferred to Arvid.	
1859		C-108	10-7 Command Center at Big Falls/Big Flats	
1859		WAT 3	Same message	
1900		Al Bey	10-21B - Calling to let us know he is available to go to Big Flats. Arvid is on with Courtney on another line, and the word is to tell Al to report to Big Flats ICP. Al is a regular rider for us at Rapids.	
1903		Joel Aanensen Plum Creek	10-21B - Calling for the latest on the fire. He was told that the latest estimate was 4000 acres, and that it had crossed Hwy C. (Joel was on hold until 1907 while I dealt with the calls below) We didn't have a lot more info for him at this time.	
1904		Glazer	10-21B - (Kent was on hold until I finished with Joel) Kent was curious how long he needed to standby, and was told that it was our understanding that no one in the state had shut down yet at this point.	
1904		Blair	10-21B - Was trying to reach Arvid. Had updates on equipment coming for the night, some would be out of the northwest, and had some questions. We told him we would have Arvid call him back. He also mentioned that they had kept everyone in the state on to this point.	
1905		WAP Disp	10-21B - Steph calling to advise that Jorgenson landing at Rapids to refuel and he will standby to relieve other pilots, cell phone is 608-219-2841. He will stay there until we	
1906		Bob Hess	10-21B - Bob is at ICP and getting good signal on his personal cell phone and suggests it be used for our contact with Logistics. The number is: 715-570-3003	
1907		T-475	Off Necedah, 10-76 Cottonwood Fire	
1908		Don Stofflet	10-21B - Snooks is a regular rider out of Rapids. He is calling in to advise he gets off work at 2200 and would be available to go to Big Flats for overnight. He was advised to give a call back when he was done with work.	
1909		SEAT Mgr	10-21B - T-475 is coming to Rapids to refuel and reload - We need to set up for that. Jayne anticipates 2-3 loads. Hard to estimate time, as we had no way of knowing how long he might be held over the fire. Best guess is ETA of 20-30 minutes. There is no fuel available at Friendship.	
1912	Misdialed		10-21B - Got the PD instead of the FD.	
1912	Rapids FD		10-21B - Got an electronic menu, made wrong choice for time of day, wound up at a dead end	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1913		Djupstrom	<p>10-21C - Bruce has a resource order for night shift. They are looking to have the night shift come once the fire is contained. They are estimating containment around 2200 - 2300. Night shift should be on scene by 2200. 6 rangers, 12 t&p, 6 ATV with operators, 6 additional 4x4's, 2 hvy dozers, one person for line boss, Sloan is asking for one additional person for safety. Kris shares the list with Arvid and Arvid comes on the phone. Arvid is concerned of some confusion between orders and what the command center has already begun.</p> <p>Arvid relays O/H team night shift plans for the night: Plans: Brian Spencer, Sue Nelson, Greg Mitchell, Paul Westegaard, Chris Wolrath, & Kathy Nelson. No ETA, but they should have been on the road awhile. Bruce has Mike Winsky for Logistics. Arvid says that Mike would be one of the three ordered, and that the CC has given him Gary VanDerWeist and a Chris Wilmont. Also John Huppert and Scott Lindow will be the two Ops folks for the O/H team order.</p> <p>They discuss wet ground equipment. Bruce is aware of the Marsh Master, and is told that two wet ground units from WAP DG are 10-76 if not already there, and a fourth is coming out of WOD DG.</p> <p>Arvid relays HU for night shift, that will fill part of the twelve: RHL 2, LKT 1 & Ladysmith 1. It is confirmed that nine more are requested. Arvid comments that he is not sure we can get nine more as Peshtigo also had a crown fire.</p> <p>Arvid is also aware of some USFWS stuff. Bruce has talked to Zellmer and some should be there already. At least 3 crews each crew may have a type 4 or type 6, some ATV's and 1 Marsh Master.</p> <p>Arvid has crew info: 6-person crew from UW River Falls, 3-person crew from South Central, a Mennonite crew from Park Falls.</p> <p>Bruce indicates he has arranged hotel rooms for some folks with a distance to travel, those close by will go home once the shift change occurs.</p> <p>There is discussion regarding a problem with getting a truck with a compatible hitch to tow the cache trailer from Rapids. All trucks are at fire. Discussion on possibility of Bruce being able to send a truck back here to get it. Bruce will check. (Call ends at 1924)</p>	
1914		C-108	10-8, 10-76 to meet C-451	
1915	Rapids FD		10-21B - Finally reached a real person (Winquist), they were a little busy trying call guys back in off the short time list to fill the request for an ambulance at ICP. He requested I give him a call back when I had a more solid ETA of T-475. He gave us a better number: 421-6277	
1916	SEAT Mgr		10-21B - Advised Jayne that Rapids FD would load SEAT. Jayne advised that T-475 was over the fire and would drop his load soon and head for Rapids, ETA 10 min. We need to let T-475 know someone will meet him at Rapids. She has closed down Friendship for re-loading as there is no fuel there, Steve has been released.	
1918	Rapids FD		10-21B - Contacted Rapids FD, Hacker, to set up for loading T-475 in 10 minutes at Alexander Field.	
1920		Jorgenson	10-21B - Calling to say he was on the ground at Rapids, he has talked to Greg and Bob. He was going to grab the crew car and sneak over to Culvers for a quick sandwich. He was not moving until he heard from us.	
1920		T-475	Off Cottonville Incident 10-76 Friendship to load and return	
		T-475	I understand that you were coming up here to Alexander Field for loading	
		T-475	Am a little higher for you , I am off the head of the Fire	
			10-76 Friendship for another load	
1921	T-475		I got a call from SEAT Mgr indicating that you were coming to Rapids, I have arranged for the City of Wisconsin Rapids Fire Department to meet you at Rapids so you can re-fuel and re-fill	
		T-475	Affirmative, that will be my next load, I will load at Friendship here, which is closer, after I drop that load I will go to Rapids for fuel and another load, that will be about a half hour.	
1922		WAU RGR	Just curious if you got all our tower people down	
		WAU RGR	Mike was going to check on Quarry	
1923	SEAT Mgr		10-21B - Discussed situation with SEAT Mgr reference T-475 going back to Friendship one more time. No one will be at Friendship to assist him.	
1923	T-475		(Two calls, no response)	
1925	Rapids FD		10-21B - Contacted Rapids FD, Murphy, to push ETA back to about 30 minutes.	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1928		King	10-21C - Mike is calling to let us know that Quarry tower person is down, radio battery was dead. Mike is in WAU 8X and is standing by at Mosinee with MED 1. If he doesn't hear anything in an hour or so he might head back to Wausau. Kris reminds Arvid they are there.	
1929		T-475	We have a report by a pilot of a fire along RR tracks four miles south of Adams County airport. I have the smoke in front of me right now, looks like a small white, may be growing.	
1930	???	T-745	You won't be talking to them on this frequency, I would get on the DNR frequency, but I would stay away until I had permission to do that. This is the SEAT pilot again.	
1931		Jorgenson	10-21B - Calling from the Rapids Airport, the fire engines have just showed up, and John is talking with the airport manager and he does not have much 100 low-lead left. He could have between 0 and 100 gallons left.	
1931	T-475		Are going to check that fire out for us? (no response)	
1931	T-475		(no response)	
1932		SEAT Mgr	T-405 is off Necedah, 10-76	
1935		SEAT Mgr.	10-21C - Jayne is asking us to advise BRF Disp that T-405 will stay in Necedah tonight. He will bunk up with the rest of the guys. Jayne is advised that Rapids may not have any fuel for the SEAT, they are estimating 0-100 gallons left. Rapids FD is at the airport now. Jayne indicates the only reason he was coming to Rapids was for the fuel. They discuss fueling at Point. Jayne says they have fuel at Necedah. We need to make the SEAT aware.	
1935	Adams SO		10-21B - Asked them to check along RR south of Adams to follow up on possible fire reported by another pilot through T-475. They agreed to do so.	
1937		Helgeland	10-21B - Denese is calling to let us know that she had given Eric Brach the keys to her personal truck and that it was okay if he used it. It was being looked at to tow a trailer from Rapids.	
1939	BRF Disp		10-21C - Kris advises Pat that T-405 will over night in Necedah tonight.	
1940		Point Crew	10-21B - Tristan calling regarding the access for the 9 folks coming down. Wanted to know if they would be okay coming across on Hwy C. We told him that the fire had jumped Hwy C and that they would be driving through it if they went that way. We recommended they come across on Hwy 54 and down Hwy 13 to C. They expected to leave in next 10 minutes. ETA Big Flats by 2100	
1941		MIFC	10-21B - Bonnie calling to check in on the situation. Wanted to know if we had anything like a resource or name for this fire. Told her it was being called the Cottonville Fire. Wanted to know if we would be putting it through Ross, doing a resource order. Said she would get more information later.	
1941		Helgeland	10-21C - Denese inquiring as to whether or not Eric has left with her truck. She is at Wal-Mart and looking for her truck to help haul supplies she is picking. We need to find out what is happening in the shop/parking lot. Denese will call back in five.	
1942		T-475	Off Friendship, I have that smoke in sight, do you want me to check it out? (no response from dispatch)	
1943		T-475	I have that smoke in sight, about a mile away, do you want me to check it out?	
		T-475	Is this the one along the RR that you talked?	
		T-475	Yes, it is about four miles south (faded out)	
		T-475	Appreciate it if you could check it out	
1944		T-475	Burning in mixed soft and hardwoods, it is on the ground creeping, origin was in the back yard, looks like its got most of an acre, road to north side that it is bordering.	
		T-475	Is this right along the RR?	
		T-475	There is some kind of quarry with a big pile of gravel next to RR, one person watching it, burning in grass (at this point it began to sound like a controlled burn)	
1946		Helgeland	10-21B - Wanted to know if Eric was still there. Phone was passed to Eric. They made arrangements to meet here so Eric could help transport Gatorade & water. She also was going to start her truck for Eric as he was having some difficulty.	
1947		T-475	10-76 Cottonville Incident	
		T-475	They are running low on fuel at the Rapids airport	
1948	Adams S.O.		10-21B - Called to find out what they had learned about the possible fire along the RR. She indicated she had an officer looking for it. Discussed the fact that it may be a controlled burn, since T-475 indicated it appeared that someone was watching it.	
1949		Schwingel	10-21B - John is wondering if we have another fire. Told them I had been working with Adams SO to try and find it, and that it sounded like a controlled burn as the air tanker said someone was watching it. He wanted a call back, and indicated he had stuff he could send if necessary.	
1950	WAU 8X		We would like you and MED 1 to head to ICP	
		WAU 8X	Copied, will be leaving shortly	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
1958	MV 1		Can you give us a phone call (Rick had previously called to let us know that he was in the Sandhill shop. just wanted to make sure he wasn't still there. Later found out he was at home)	
2001	Sandhill		10-21C - Trying to contact Rick Green, but got a recording.	
2001		T-475	Cancel the loading at Wisconsin Rapids	
		T-475	Copied, did you get the message there is no fuel at Rapids	
		T-475	I copied that, I will just load at Friendship, it is closer. Tell the guys thanks if they are out there waiting on me. Sorry about that.	
2002		T-475	Can you give me "pumpkin time"?	
		T-475	Repeat	
		T-475	Can you give me the hour and minute of "pumpkin"?	
		SEAT Mgr	It is 2040 475.	
		T-475	2040, thanks very much	
2003		Trent	10-21 - Calling to advise that a Mennonite crew from Park Falls would be 10-76. (6 men, 2 women)	
2003		Bob Hess	10-21B - Bob was looking for the fax number for Madison Command Center. He was given 608-266-7992.	
2005		Doug Meier Air to Grnd Sit-Stat	10-21B - Looking for someone to decide whether to keep the CL-215 overnight or release him back to MIFC. Suggests we contact Command Center. Arvid is on another line with Trent talking about the issue. We will have to call Doug back with an answer. Doug's number: 608-220-9120	
2008	Rapids FD		10-21B - Advising Rapids FD, Hacker, that the air tanker will not be coming to Rapids, since there is no fuel, and that they can shut down at Alexander Field. The pilots appreciation of their efforts was relayed.	
2009		Tomahawk Truck	10-21C - Shop truck crew calling to advise they are just leaving, and looking for instructions. They request that we arrange for two single motel rooms for them. We tell them to come directly to Rapids for now, we will call them if it changes. Cell number is 715-966-0828.	
2010		Doug Meier	10-21B - Indicated that Courtney was coming back, and that he would talk to him. Doug also indicated that there is still a lot of flame on the right flank and within the black yet too. Perhaps that info would help in the decision	
2011		SEAT Mgr	T-405 loaded and on his way	
2012		Courtney	10-21B - Calling to talk to Arvid, transferred to another phone	
2013	Green Res		10-21C - Since I couldn't get an answer at Sandhill, I tried Rick at home to make sure he wasn't waiting on us back at the shop. Rick indicates he will be available tomorrow.	
2013	Park Falls	Prentice 1	10-76 Big Flats fire, south of Rapids (copied Park Falls DG radio traffic)	
2015		TOM 1	10-76 Big Flats	
2016	Adams S.O.		10-21C - Called Adams County dispatch to follow-up on the reported fire along the RR. Officer is on scene of a controlled burn in that area.	
2020		LeMay Center	10-21B - Chris is calling to find out if we heard from George Hendrickson or Ray Brockman as they left about 10 minutes. And yes we had heard from them and had given them instructions to come to Rapids.	
2020		T-475	Off Friendship, 10-76 the incident	
2024		NWS	10-21B - Dave Schmidt calling to see what is happening. Makes comments about his last spot forecast being pretty much on target. Noticing RH was up to 24% at 1900. Winds are 180 at 7mph. Looking for RH to approach 50% by 2400.	
2027		Carey Skerven	10-21B - Carey is calling to see if there is a need for her to come in. She has seen reports of two separate fires on TV. One southeast of Rome, and one toward Leola. (Carey spent one season as support dispatcher, and still helps out from time to time.)	
2028	Park Falls	Prentice 1	Leaving Taylor County (copied Park Falls radio traffic)	
2033		Cornell RGR	10-23 Big flats	
2034		Jim Miller	10-21B- Jim is traveling with Rick Bucklew, and they need the numbers for the Command Center in Madison. He is given IC - 608-267-0793, plans - 0875, recorder - 0868. Jim says, "It's good to smell smoke."	
2040		Eagle R. RGR	10-20, South of Wausau, 10-76 Big Flats ICP	
2040		BRF Area Ldr	10-7, Big Flats ICP	
2041		T-475	Off the incident, Back to Necedah for the night	
2043		SH For	10-21C - Mark Chryst needs the location of the ICP.	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
2043	WHG 8X		Do you have a cell phone	
		WHG 8X	Negative	
	WHG 8X		Are you 10-76 the airport?	
		WHG 8X	10-4	
	WHG 8X		Kent, it looks like we are going to have a need for four folks, four pilots to be staying overnight. Can you make those arrangements?. (the CL-215 and Air Attack #4, landed at Stevens Point for the night)	
		WHG 8X	10-4, I can do that.	
	WHG 8X		There is a pilot and co-pilot in the CL-215, and then a pilot and co-pilot in the lead plane.	
		WHG 8X	Copied that, I 'll make some calls when I get to the airport	
	WHG 8X		I assume you will be able to figure out transportation then for them to the motel	
		WHG 8X	10-4	
2045	AmericInn		10-21C - Made reservations for two singles for tonight for the Tomahawk Crew. It is put on my P-Card, and the desk clerk is told it can stay there if no other card is presented by the crew.	
2048	WHG 8X		Apparently we have the order I just talked to you about covered, Roy Kubisiak took care of lodging arrangements, and is also taking care of transportation, so you may disregard.	
		WHG 8X	Copy that, I will be 10-19 RS	
	WHG 8X		You can give me a call here when you get back (the traffic regarding lodging, etc. was between WHG 8X, Kent Glazer, and the RFL, Arvid Haugen, here in dispatch)	
2049		Rapids Airport	10-21B - Curtis calling to advise they will have fuel about 0800 in the morning, 7-8000 gallons coming..	
2052		SEAT Mgr	10-21C - Jayne is calling to let us know that both SEATs are on the ground at Necedah. They will close up shop shortly. Tanker pilots said it was nasty up there. Lloyd checks with Arvid, and the SEAT crew is told to be back on duty at 1000 tomorrow.	
2053		Rpd Air Att	Make a phone call for one of the other pilots, John Jorgenson, I will give you a cell phone number 608-219-2841. He is either at the Friendship airport or the Rapids airport, just advise him to head home.	
2054		MED RGR	Myself and Greg Mitchell have arrived at the ICP	
2054		Rpd Pat	Now that I think of it call my residence, let who ever answers know I am going to be little late.	
2055	Jorgenson		10-21B - Called John to let him know he can head home.	
2056		Pray RGR	Checking in with you, 10-76 Big Flats	
2056		TOM 1	10-23 ICP	
2056		Wilmont	10-21C - Chris is calling to advise that he coming into the Big Flats ICP and is looking for a contact number. Lloyd doesn't recognize the name, and asks who he is before giving out any numbers. He is coming from Cumberland to fill a logistics, so is given the fire hall number: 564-7754 He would like to make contact to see if there is anything he should pick up before getting. He is coming down the interstate to Hwy 21, and then will go north on 13. He questions whether or not 13 is an open road.	
2057	Clark Residence		10-21B - Called Bob's wife to let her know that all is well and that Bob is still flying the fire in Adams County.	
2102		Glazer	10-21C - Kent wants to speak with Arvid, who is on another phone. Kent requests Arvid call him at Whiting.	
2106		WAU 8X	10-7 ICP	
2106		MED 1	10-7 ICP	
2107		Storandt	10-21B - Jim is looking for Arvid. Call transferred	
2118		RHL For	10-76 Big Flats fire, just by Wausau Ranger Station, am I going to be better off coming on 54 and taking 13 down, or taking 51 to 21 across?	
		RHL For	54 to 13 and then south	
2120		RHL 2	10-7 ICP	
2121		BRF 2	10-7 ICP	
2122		BRF 1	10-7 ICP	
2129		Pray RGR	10-7 ICP	
2133		WOD Musk	I am in the DG now, is there an easier way than not to get to the fire I am supposed to go to?	
	WOD Musk		Your best route is stay on I-39 south to Plover, get off at Hwy B, go west, and you will hit Hwy 54 to Rapids, and take Hwy 13 south.	
		WOD Musk	Hwy 13 south?	
	WOD Musk		Affirmative	
		WOD Musk	Copy that	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
	WOD Musk		Your final destination will be Big Flats, at the intersection of Hwy 13 and Hwy C, ICP will be just to the east.	
2135		NEC TWR	"I just want to say thank God for everybody out there fighting that fire, I seen it from Necedah, 15 miles away, and it's an area I hunted, fished and trapped all my life. And God bless you guys all out there. I'm gonna sign off. Be careful out there. I mean, I'm getting to be an old man, but God bless you guys fighting this fire from everywhere you came from. I'll sign off right now."	
	NEC TWR		Copy that Necedah Tower, appreciate that	
2138	???		10-21C - No answer	
2141		Stofflet	10-21C - Snooks wants to know if he is needed or if he should go home. He told that there is a meeting in progress at ICP and we are waiting for a call following that. Snooks will call us when he get home.	
2142		ANT RGR	10-7 ICP	
2145	???		10-21C - Two calls to a cell - No Answer,	
2146		Ladysmith East RGR	Myself and Ladysmith HU 1 are between Wisconsin Rapids and Pittsville, should we continue on to the Big Flats Fire Hall?	
	Ladysmith East RGR		That's affirmative	
2148	Tomahawk Truck		10-21C - (Took two tries before they answered. Based on the comments here, I believe the two calls at 2145 were to them also). Got Ray on the phone, asked where they were now. They are at Plover. They are instructed to go right to Big Flats, and given directions. They are informed of the reservations for them at the AmericInn and are told they will drive right past it once they turn on 13 south.	
2148		Prentice 1	Just north of Wisconsin Rapids, 10-76 ICP at Big Flats	
2149	C-160	C-193	(two calls, no response)	
2152	C-160	C-193	(no response)	
	C-293	C-193	(no response)	
2156		Eagle R. RGR	10-7 Big Flats ICP in just a minute or two.	
2202		Dave Grosplitz	10-21B - Calling to see about staffing needed for the fire the next few days. Dave is an LTE rider for Nekoosa. He asked us to leave a message for Brian that he is available. We asked him to check in tomorrow.	
2204		LKT 1	10-23 ICP	
2205		AUG 1	10-23 Big Flats ICP	
2207		WAP Disp	10-21B - Steph calling to see what is going on. Some general chit chat on she had heard on the news about the fire, and her new appointment to Dispatcher at Peshtigo.	
2210		Don Stofflet	10-21C - Snooks is home, and checking in. He is told no need for tonight. He has to work at 1400 tomorrow.	
2212		Skerven	10-21B - Carey calling in to see what's up	
2212		Cran For	Checking in with you, just passing Brokaw, headed south toward Big Flats.	
	Cran For		Copy that, have a safe trip down	
		Cran For	What is the best repeater for Big Flats?	
	Cran For		Green Bravo	
2215		BRF Disp	10-21B - Pat calling, Dan Barton is there wondering about his mechanics. Dan is trying to plan for tomorrow. Arvid doubts that the mechanics will be put on the road tonight. Pat is shutting down for the night.	
2230		RHL For	At ICP in a few minutes	
2231		Wausaukee 1	Just letting you know we are just north of Stevens Point, plan on taking 54 over to Rapids and down 13, and you said that was on the east side of 13?	
	Wausaukee 1		Copy that, have a safe trip down	
2235		RHL For	10-7 ICP	
2236		Ladysmith 1	10-7 ICP, Also Prentice 1 and Ladysmith East RGR, same traffic	
2247	Operations	TOM RGR	(no response - call was on Green Charlie)	
2250		Bob Hess	10-21B - Bob wants to know if we have an after hours number for Tomahawk, as they would like to order 25 more pails of foam for the morning. We tell Bob we will see what we can do about ordering foam, and get back to him. Bob says to call back at 608-564-2716, (this number doubles as the fax line) as the cell phone he is using will be going home with him in a little while.	
2256	Tomahawk		10-21C - Misdialed, got a wrong number, transposed two numbers. Dialed 2157 when it should have been 1257	
2257	Tomahawk Stockroom		10-21C - Let it ring until phone company recording told me no one was answering - Hoped we could leave a message at the stockroom regarding the need for more foam.	
2258		Eau Claire For	10-7 ICP	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
2301		Bob Hess	10-21B - Wants a weather forecast for tonight and tomorrow morning. We can fax it when we get it.	
2303		Jeff Byrnes	10-21B - Jeff is normally in Skyline Tower. He is also a fire department member. Towers were told to plan on checking at 0930 tomorrow, and he is wondering if there will be towers as his chief would like his help tomorrow for mop up. He was going to wait and check in tomorrow.	
2306		Point Crew	10-21B - Wanda Wildeberg (sp?) checking in regarding the status of the Point crews we have down on the fire. Also interested in knowing how the crews are doing. We have no information for her.	
2311	NWS		10-21C - Fire weather person passes me to Steve. I request a forecast for the rest of tonight and tomorrow morning. He is given current conditions from Necedah & Rome.	
			Forecast: for the rest of the night, winds S 5-8, RH increasing to 75-80% by 0700, There is some rain on radar, but struggling to get here, could get in the area from 0200 to sunrise, will be scattered and light, temp in low 50's.	
			For tomorrow AM (0700-1200) wind switching to SW at 5-10, Rain chance is 25%. Scattered, less than 0.10 inch, RH starting at 75-85%, dropping to 55-60% by 1200. Temp going from low 50's in AM to upper 60's by noon.	
2315		Glazer	10-21B - Arvid just called me regarding foam. There is only one pail at Whiting.	
2320		WOD Musk	10-7 ICP	
2323		Point Crew	10-21B - Wanda calling to advise that she had a call telling her that Point Crew #1 was released and returning to Point.	
2326		RPD LDR	10-8 back to Rapids	
2326		WHG RGR	Same message only I am going to Whiting	
2330		Wausaukee 1	Approaching ICP	
2334	R Group	Line	(no response - was pretty weak)	
2335		WDL 2	10-7 Dells Station	
2338		Point Crew 1	10-7 Whiting RS	
2343		Cran For	10-23 Big Flats ICP	
2345		RPD LDR	10-7 Station (Rapids)	
2346		Area RGR	10-7 Station (Rapids)	
2346		S. Spooner RGR	10-21B - Jay calling to say they are at Hixton with Spooner 1 & Grantsburg HU - We request his cell phone number: 715-645-0043. Courtney is in dispatch and we confirm with him they should continue on to Big Flats. We give Jay a couple numbers for ICP.	
2354		Cran For	Re-directed to Rapids for the night, to work day shift	
	Cran For		Have you got a place to stay?	
		Cran For	Logistics told me the Americlnn	
2355		Wausaukee 1	We have basically the same traffic as the Crandon Forester	
2357		S. Spooner RGR	10-21B - Jay calling to advise that he, Grantsburg 1 and Spooner 1, we just past Black River Falls, will fuel up at Tomah and head to Big Flats.	
0005		Point Crew	10-21B - Wanda calling to see if a crew will be needed tomorrow. We asked her about the possibility of getting a crew together for 0700 at ICP. She figures she would be lucky to get five. Conversation ended with plans for 5 or more at ICP at 0900. It was also confirmed with her that Point Crew #1 was back at Point. She was talking with the crew leader.	
0007		WHG RGR	10-7 RS	
0011		NEK FOR	Back at the office	
0015		Cran For	10-7 Americlnn for the evening - Cell #715-889-1921	
0016		NEK RGR	Have you heard from Sandhill Forester at all	
	NEK RGR		It has been quite a while since I had contact with him I believe.	
		NEK RGR	Sandhill Forester, I have still got his rider with me, I was hoping to meet up with him to get back his rider	
0017		Winter RGR	10-7 ICP	
0028		C-160	10-7 Residence	
0028		BAB 1	Do you know if NEC 1 has left this fire?	
	BAB 1		Negative, no contact with him	
		BAB 1	Eyah, I understand that he may have demobed around eight-o'clock, he has my rider, I am kind of waiting for my rider, I have been released, but I don't know where my rider is.	
0030		WDL RGR	Clear of Cottonville	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
0030	BAB 1	NEC 1	I have your rider here with me	
	NEC 1	BAB 1	Are you going to bring him back to my unit, by your cat?	
	BAB 1	NEC 1	We are on the line yet, I'll see that he gets back to Rapids somehow.	
0030		BAB 1	Released from this fire	
0031		SH For	10-76 home	
	SH For	NEK RGR	I think your rider would like a ride home	
	NEK RGR	SH For	Where is he at?	
	SH For	NEK RGR	He is on Beaver Avenue, East of 7 th Avenue, where the Right Group met up with Beaver Avenue	
	NEK RGR	SH For	Copy that, I thought you guys were still playing in the woods. I'll come back and find him.	
	SH For	NEK RGR	Copy, thanks, he does too	
	NEK RGR	SH For	Run that location past me one more time	
	SH For	NEK RGR	On Beaver Avenue, just east of 7 th Avenue, between 7 th and 6 th Avenue	
0032		POY 1	Released, heading southbound	
0036		Winter RGR	Re-directed to Rapids for the night, I'll be on tomorrow's day shift	
0041	WDL 1	WDL RGR	(something about 8 th & Brown Deer)	
	WDL RGR	WDL 1	I walked on you, try again	
	WDL 1	WDL RGR	Your unit is on 8 th and Brown Deer, east of 8 th	
	WDL RGR	WDL 1	Not anymore	
	WDL 1	WDL RGR	I moved it to where the Pray unit and the Wautoma unit was	
	WDL RGR	WDL 1	We are loading units up off (unable to copy)	
	WDL 1	WDL RGR	You did find it then?	
	WDL RGR		Yah, we found them	
		WDL RGR	Copied, Clear	
0045	NEK RGR	SH For	I am on Beaver just east of 7 th	
	SH For	NEK RGR	Keep coming to where all the tractors are lined up on the road, you can't miss us.	
	NEK RGR	SH For	Copy that, A friendly LE officer wasn't happy about letting me through	
	SH For	NEK RGR	Repeat the last part, caught LE officer	
	NEK RGR	SH For	Never mind, not important	
0047	SH For	NEK RGR	(three calls, no response)	
0051		FRD RGR	10-19 FRD	
0052	NEK RGR	SH For		
	SH For	NEK RGR	As long as you are on Beaver Avenue just keep coming to almost all the way to 6 th Avenue	
	NEK RGR	SH For	I am not actually lost, got busy talking smart here for a while, I may come back and do some transporting of bodies too.	
	SH For	NEK RGR	Copied, You are taking care of Left Group transportation?	
	NEK RGR	SH For	I was going to give them a hand, I'll head down to your location now though.	
0053	NEK RGR	FRD RGR	My rider, Mike Bunker, was last seen with your group, any idea where his whereabouts is?	
	FRD RGR	NEK RGR	I think he is about half way back on the line, no he is right here with us on Beaver, just west of 6 th Avenue	
	NEK RGR	FRD RGR	Can you send him back with one of the heavy units or should I come and get him?	
	FRD RGR	NEK RGR	He should be able to catch a ride with a heavy unit	
	NEK RGR	FRD RGR	Are they going to be 10-8 shortly	
	FRD RGR	NEK RGR	I haven't seen any of the FRD 1,2 or 3 yet, back here on Beaver	
	NEK RGR	FRD RGR	Thanks, Have a good night	
	FRD RGR	NEK RGR	We'll be talking, I got a bunch of pictures	
	NEK RGR	FRD RGR	10-4, I am sure there are a lot	
	FRD RGR	NEK RGR	Good Job!	
	NEK RGR	FRD RGR	Back at ya!	
0055		Marsh Master	We have been released from this fire and are enroute to the Refuge	
0057		WAU RGR	Released, 10-19 Station	
0058	FRD RGR	FRD 3	When would you like us in in the morning?	
	FRD 3	FRD RGR	Check with night operations there, but I believe stations at 0900	

Time	To	From	Comments	COTTONVILLE FIRE DISPATCH
	FRD RGR	WDL RGR	The plan calls for stations at 0900, work plans will be decided then	
0059	WDL RGR	NEK RGR	What was it, 0900 start?	
	NEK RGR	WDL RGR	10-4, 0900 stations	
	WDL RGR	NEK RGR	10-4, What do you think, we got a standby shift tonight?	
	NEK RGR	WDL RGR	Ya, you can go ahead and count a standby for 5 hours	
	WDL RGR	NEK RGR	10-4 (you can almost hear him chuckling as he answers)	
0102		Winter RGR	10-7 Americlnn	
0102		S. Spooner RGR	We have entered your DG, we are at Necedah heading to Big Flats	
0103	S. Spooner RGR	Winter RGR	Did you guys get much rain before you left, Jay?	
	Winter RGR	S. Spooner RGR	Trace, to 0.01, enough to wet the blacktop	
	S. Spooner RGR	Winter RGR	That's about all we had when I left too	
0103		FRD RGR	10-7 RS	
0111		WAT 3	Released from this Cottonville fire, 10-19 Wautoma	
0119		SH For	I'm going to try this again, I've got my rider with me now and we are headed for Necedah.	
0122		BAB 1	10-7 Headquarters (Rapids)	
0123		WDL RGR	10-7 Dells	
0125		Burnette For	10-23 Big Flats ICP	
0127		WAU 1	Released from the Cottonville fire, 10-19 station	
0127	WAU 1	WAU RGR	Can I assume that you are not going turkey hunting this morning?	
	WAU RGR	WAU 1	I'll have to call you on that one, I haven't made up my mind yet.	
	WAU 1	WAU RGR	Just curious whether we are gonna see you at the school forest in the morning	
0129		WDL 1	Released from this fire, 10-19 Dells	
0131		Marsh Master	10-7 Refuge	
0132		FRD RGR	10-21B - Jodi asks Arvid if he is night dispatch. He says just for a little while then he was going to try and get some sleep. She is on the way to do the same. He tells her he just kicked Lloyd out. They had some general discussion on how things went. Conversation terminated when Jodi arrived at her home.	
0132		WAT 2	Released from this fire, 10-19 Wautoma	
0134		Burnette For	10-76 Wisconsin Rapids	
0137		FRD 1	Loaded up and 10-19 FRD	
0140		MON 2	Released from the fire, heading back to the station	
0146		WAT 2	Leaving the dispatch group, switching over to Waupapca	
0147	Logistics		10-21B - Arvid calling to check in with Schott, night shift IC, before shutting down dispatch. He advises Randy that all incoming units have been talked to and diverted to motels. Arvid will be on the air, at least on his cell phone They have declared containment. Some discussion about how things went.	
0147	NEK RGR	NEC 4x4	On green	
		NEK RGR	Switch to red	
	NEK RGR	NEC 4x4	Necedah Ranger is here to pickup his truck, do want me to have him bring me down to where you are going to be at? (rest of conversation must be on red, as tape has nothing)	
0151	ALL		10-7 on all repeaters (4) initialed "ABH"	
0152		S. Spooner RGR	S. Spooner RGR, Spooner 1 & Grantsburg 1 10-7 Rapids Americlnn	
0155		Burnette For	10-7 Americlnn	
			I stopped typing the radio log once Arvid, in Rapids Dispatch, no longer acknowledged the radio transmissions.	
			10-21B - Stopped the replay at 0200 (not recording initially)	
			10-21C - Stopped the replay at 0200	

COTTONVILLE DISPATCH NOTES - WEATHER

	Current Conditions		Forecast
	Rome	Necedah	LaCrosse
<i>Time</i>	915	0912	<i>Narrative - 0515</i>
<i>Temperature</i>	61.9	61.5	<i>Max 70-75</i>
<i>Relative Humidity</i>	23	22	<i>Min 20-25</i>
<i>Wind</i>	225 @ 11.3 - 17.8	189 @ 12.7 - 18.5	<i>S 14-17</i>
<i>Fuel Stick Moisture</i>	8.9	7.8	
<i>Fuel Stick Temp.</i>	68.0	78.8	
<i>Time</i>	1206	1203	
<i>Temperature</i>	71.1	70.0	
<i>Relative Humidity</i>	19	21	
<i>Wind</i>	25 @ 10.0 - 15.7	208 @ 12.6 - 17.1	
<i>Fuel Stick Moisture</i>	7.8	7.4	
<i>Fuel Stick Temp.</i>	80.8	86.2	
<i>Time</i>	1509	1507	<i>Spot - 1523</i>
<i>Temperature</i>	72.5	74.1	<i>Max 75 - Drop to 70 by 1900</i>
<i>Relative Humidity</i>	18	19	<i>Low of 18 - Increase after 1900 27 @2100, 33 @2200 overnight max of 80</i>
<i>Wind</i>	225 @ 10.1 - 17.1	190 @ 11.1 - 16.4	<i>Southerly @ 12 - 15 - Later S 10-12</i>
<i>Fuel Stick Moisture</i>	6.3	7.6	
<i>Fuel Stick Temp.</i>	83.7	90.1	
<i>Time</i>	1823	1820	<i>Spot</i>
<i>Temperature</i>	69.4	71.6	<i>55-60 by 2400 - overnight low: 50</i>
<i>Relative Humidity</i>	23	21	<i>Max of 75-80 - Up to 50 by 2400</i>
<i>Wind</i>	225 @ 8.3 - 15.0	188 @ 9.8 - 16.0	<i>2000 to 2400: S @ 8 after 2400: S @ 6-8</i>
<i>Fuel Stick Moisture</i>	6.3	6.4	
<i>Fuel Stick Temp.</i>	70.9	84.6	
<i>Time</i>	2305	2303	<i>Spot - Rest of tonight</i>
<i>Temperature</i>	58.6	57	<i>Minimum in low 50's</i>
<i>Relative Humidity</i>	33	38	<i>Increase to 75-80 by 0700</i>
<i>Wind</i>	180 @ 5.4 - 9.3	165 @ 4.7 - 7.8	<i>S - 5-8</i>
<i>Fuel Stick Moisture</i>	6.8	6.4	
<i>Fuel Stick Temp.</i>	54.5	67.5	
			<i>0200-0600: 40% chance of scattered light rain</i>
<i>Time</i>			<i>Spot - Tomorrow morning 0700 - 1200</i>
<i>Temperature</i>			<i>Start in low 50's Upper 60's by 1200</i>
<i>Relative Humidity</i>			<i>55-60 by 1200</i>
<i>Wind</i>			<i>SW 5-10</i>
<i>Fuel Stick Moisture</i>			
<i>Fuel Stick Temp.</i>			
			<i>25% chance of scattered rain - less than 0.10</i>

WIMS MAY 4, 2005

Observation Data

2 records found

Station	Obs	Ob	O	Dry	M	HC	Wind	IO	Temp	%RH	Y	FHC								
ID	Name	Date	Tm	T	W	Tmp	RH	L	Rsk	Dir	SP	Hr	Max	Min	Max	Min	Dur	Amt	L	Rsk
473501	ROME (SARATOGA)	04-May-05	13	0	0	62	20	1	100	225	9	8	63	17	90	18	0	0	1	100
474301	NECEDAH	04-May-05	13	0	0	64	19	1	100	219	8	9	64	23	79	17	0	0	1	100

NFDR Data for Observation

8 records found

Station	Obs	Ob	O																	
ID	Name	Date	Tm	T	MSGC	WS	WDY	HRB	1H	IO	HU	TH	IC	SC	EC	BI	FL	SL	R	KBDI
473501	ROME (SARATOGA)	50405	13	0	7Q1P3	9	70	4	4	8	12	20	42	27	47	80	57	4	H	6
473501	ROME (SARATOGA)	50405	13	0	7L1P3	9	70	4	4	8	12	20	41	81	5	48	35	4	H	6
473501	ROME (SARATOGA)	50405	13	0	7R1P3	9	70	4	4	8	12	20	44	3	18	19	15	4	H	6
473501	ROME (SARATOGA)	50405	13	0	7E1P3	9	70	4	4	8	12	20	45	14	25	44	32	5	V	6
474301	NECEDAH	50405	13	0	7Q1P3	8	70	4	4	9	11	19	39	24	47	76	54	4	H	80
474301	NECEDAH	50405	13	0	7L1P3	8	70	4	4	9	11	19	38	68	5	44	32	4	H	80
474301	NECEDAH	50405	13	0	7R1P3	8	70	4	4	9	11	19	41	3	18	18	15	4	H	80
474301	NECEDAH	50405	13	0	7E1P3	8	70	4	4	9	11	19	42	12	25	41	30	4	H	80

Forecast Data

2 records found

Station	Fcst	Dry	A	Wind	IO	Temp	RH%	T									
ID	Name	Date	Tm	W	Tmp	RH%	L	Dir	SP	HR	Max	Min	Max	Min	Dur1	Dur2	L
473501	ROME (SARATOGA)	05-May-05	13	2	70	26	1	203	14	0	71	40	62	18	0	0	1
474301	NECEDAH	05-May-05	13	2	70	23	1	180	14	0	70	36	67	19	0	0	1

NFDR Data for Forecast

8 records found

Station	Obs	Ob	O																	
ID	Name	Date	Tm	T	MSGC	WS	WDY	HRB	1H	IO	HU	TH	IC	SC	EC	BI	FL	SL	R	KBDI
473501	ROME (SARATOGA)	50505	13	F	7Q1P3	14	70	5	5	6	10	19	43	42	49	100	71	5	V	11
473501	ROME (SARATOGA)	50505	13	F	7L1P3	14	70	5	5	6	10	19	40	109	4	51	37	5	V	11
473501	ROME (SARATOGA)	50505	13	F	7R1P3	14	70	5	5	6	10	19	46	5	19	24	19	5	V	11
473501	ROME (SARATOGA)	50505	13	F	7E1P3	14	70	5	5	6	10	19	49	23	25	55	40	5	V	11
474301	NECEDAH	50505	13	F	7Q1P3	14	70	5	5	7	9	18	45	42	49	101	72	5	V	84
474301	NECEDAH	50505	13	F	7L1P3	14	70	5	5	7	9	18	43	113	5	53	38	5	V	84
474301	NECEDAH	50505	13	F	7R1P3	14	70	5	5	7	9	18	48	5	19	24	19	5	V	84
474301	NECEDAH	50505	13	F	7E1P3	14	70	5	5	7	9	18	51	23	25	56	40	5	V	84

WIMS MAY 5, 2005

Observation Data

2 records found

Station	Obs	Ob	O	Dry	M	HC	Wind	10	Temp	%RH	Y	FHC								
ID	Name	Date	Tm	T	W	Temp	RH	L	Rsk	Dir	SP	Hr	Max	Min	Max	Min	Dur	Amt	L	Rsk
473501	ROME (SARATOGA)	05-May-05	13	0	1	72	18	1	100	225	9	7	73	34	65	17	0	0	1	100
474301	NECEDAH	05-May-05	13	0	1	72	18	1	100	209	11	7	74	37	61	16	0	0	1	100

NFDR Data for Observation

8 records found

Station	Obs	Ob	O																	
ID	Name	Date	Tm	T	MSGC	WS	WDY	HRB	1H	10	HU	TH	IC	SC	EC	BI	FL	SL	R	KBDI
473501	ROME (SARATOGA)	50505	13	0	7Q1P3	9	70	4	4	7	10	19	44	28	50	84	60	5	V	17
473501	ROME (SARATOGA)	50505	13	0	7L1P3	9	70	4	4	7	10	19	45	83	5	49	36	4	H	17
473501	ROME (SARATOGA)	50505	13	0	7R1P3	9	70	4	4	7	10	19	47	3	20	20	16	4	V	17
473501	ROME (SARATOGA)	50505	13	0	7E1P3	9	70	4	4	7	10	19	49	14	26	46	33	5	V	17
474301	NECEDAH	50505	13	0	7Q1P3	11	70	4	4	7	9	18	49	34	51	93	66	5	V	85
474301	NECEDAH	50505	13	0	7L1P3	11	70	4	4	7	9	18	51	110	5	56	40	5	V	85
474301	NECEDAH	50505	13	0	7R1P3	11	70	4	4	7	9	18	52	4	20	22	17	5	V	85
474301	NECEDAH	50505	13	0	7E1P3	11	70	4	4	7	9	18	55	18	27	51	37	5	V	85

IMMATURE JACK PINE FBP RUN

FWI Inputs

Projection date	May 05 2005
Yesterday's FFMC	92.4
Yesterday's DMC	32.1
Yesterday's DC	98.4
Noon air temperature (°F)	70
Noon relative humidity (%)	20
Noon 10 metre wind speed (mph)	17
24 hour precipitation (inches)	0

FBP Primary Inputs

Fuel type	C4
Grass fuel load (tons/acre)	
Degree of curing (%)	
Percent conifer (%)	
Percent dead fir (%)	
Fine fuel moisture code	93.4
Buildup index	39.1
10 metre wind speed (mph)	17
Cardinal wind direction (°)	South
Percent ground slope (%)	0
Aspect of slope (°)	
Elapsed time (mins)	60

FWI Output

Noon fine fuel moisture code	93.4
Noon duff moisture code	36.8
Noon drought code	104.6
Noon initial spread index	27.5
Noon buildup index	39.1
Noon fire weather index	39.3

FBP Primary Outputs

Final ISI - wind & slope	27.7
Spread direction azimuth (°)	0
Net vectored wind speed (mph)	17
Critical rate of spread (ch/hr)	18.1
Critical fire intensity (Btu/ft/s)	492.6

Equilibrium Spread Rates

Head fire rate of spread (ch/hr)	121.3
Flank fire rate of spread (ch/hr)	17.8
Back fire rate of spread (ch/hr)	3.3

Intensity Outputs

Head fire surface intensity (Btu/ft/s)	3,305
Flank fire surface intensity (Btu/ft/s)	484
Back fire surface intensity (Btu/ft/s)	89.2
Head fire total intensity (Btu/ft/s)	7,531
Flank fire total intensity (Btu/ft/s)	484
Back fire total intensity (Btu/ft/s)	89.2

Elliptical Outputs

Length-to-breadth ratio	3.51
Elliptical fire area (acres)	347.3
Elliptical fire perimeter (feet)	17,875
Rate of perimeter growth (ch/hr)	270.8

PINE PLANTATION FBP RUN



FWI Inputs

Projection date	May 05 2005
Yesterday's FFMC	92.4
Yesterday's DMC	32.1
Yesterday's DC	98.4
Noon air temperature (°F)	70
Noon relative humidity (%)	20
Noon 10 metre wind speed (mph)	17
24 hour precipitation (inches)	0

FBP Primary Inputs

Fuel type	C6
Grass fuel load (tons/acre)	
Degree of curing (%)	
Percent conifer (%)	
Percent dead fir (%)	
Fine fuel moisture code	93.4
Buildup index	39.1
10 metre wind speed (mph)	17
Cardinal wind direction (°)	South
Percent ground slope (%)	0
Aspect of slope (°)	
Elapsed time (mins)	60

FWI Output

Noon fine fuel moisture code	93.4
Noon duff moisture code	36.8
Noon drought code	104.6
Noon initial spread index	27.5
Noon buildup index	39.1
Noon fire weather index	39.3

FBP Primary Outputs

Final ISI - wind & slope	27.7
Spread direction azimuth (°)	0
Net vectored wind speed (mph)	17
Critical rate of spread (ch/hr)	59.5
Critical fire intensity (Btu/ft/s)	1,140

Equilibrium Spread Rates

Head fire surface ROS (ch/hr)	57
Flank fire surface ROS (ch/hr)	8.2
Back fire surface ROS (ch/hr)	0.2
Head fire crown fire ROS (ch/hr)	0
Flank fire crown fire ROS (ch/hr)	0
Back fire crown fire ROS (ch/hr)	0
Head fire rate of spread (ch/hr)	57
Flank fire rate of spread (ch/hr)	8.2
Back fire rate of spread (ch/hr)	0.2

Intensity Outputs

Head fire surface intensity (Btu/ft/s)	1,094
Flank fire surface intensity (Btu/ft/s)	156.4
Back fire surface intensity (Btu/ft/s)	3.5
Head fire total intensity (Btu/ft/s)	1,094
Flank fire total intensity (Btu/ft/s)	156.4
Back fire total intensity (Btu/ft/s)	3.5

Elliptical Outputs

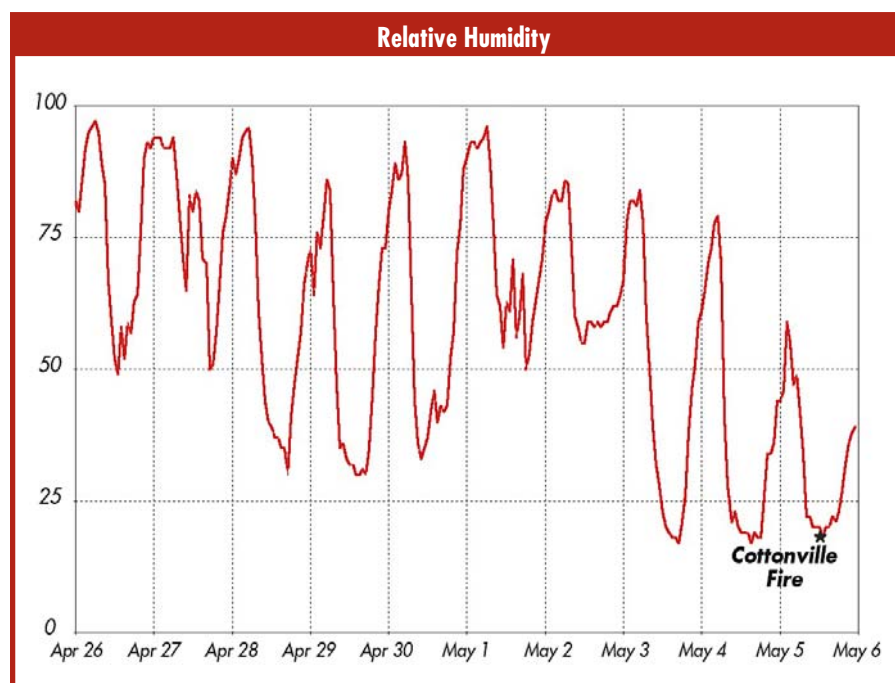
Length-to-breadth ratio	3.51
Elliptical fire area (acres)	73.3
Elliptical fire perimeter (feet)	8,213
Rate of perimeter growth (ch/hr)	124.5

COTTONVILLE FIRE BEHAVIOR

The objective of this fire behavior analysis is to describe the fire environment before and during the Cottonville fire on May 5, 2005. Standard fire behavior predictions techniques were used to develop this analysis. Much of the fire behavior information presented here are from actual observations and recorded timeline for spread rates. The actual fire spread rates were calculated from photos, video, GPS waypoints and dispatch logs. This was found to be the most accurate as the fire passed roads and was tracked in the logs (see figure 6). A second progression map was

developed using the Canadian Forest Fire Behavior Prediction System (CFFBPS), fuel model C-6 (Red Pine Plantation) to determine the spread rates.

The Wisconsin Rapids Dispatch Group's fire occurrences were relatively light since the last rain before Cottonville. The area had only 10 non-challenging fires with the available suppression resources from April 27 leading up to Cottonville.



Conditions Before the Fire

The area received its last precipitation on April 26 and 27, .23 and .06 inches respectively. The relative humidity dropped into the high teens the two previous days prior to the fire, and for the evening of May 4 through the morning of May 5, did not reach 60%.

Measured live fuel moisture in Red Pine at the Rome sampling site, approximately 10 miles from the fire, was at the year's lowest when the fire occurred.

Rome Live Fuel Sampling Site 2005	
Date	Red Pine Live Fuel Moisture
April 21	96.4
April 28	94.3
May 3	92.4
May 9	98.2

This live fuel moisture drop is the typical phenological dip that occurs in Red Pine just as pollination is starting to occur. May 3 was the lowest measured live fuel moisture for the spring fire season.

Relative humidity recovery for the evening of May 4 through the morning of May 5 did not reach 60%. Within the Lake States region, fire conditions have the potential to become very volatile early in the day if the condition of the previous day exists with out high RH recovery rates. The weather conditions were taken from a ROS weather station (Rome WS) approximately 10 miles northwest of the fire.

The data cutoff for Drought Monitor maps is Tuesday at 7 a.m. Eastern Standard Time. The maps, which are based on analysis of the data, are released each Thursday at 8:30 a.m. Eastern Time.

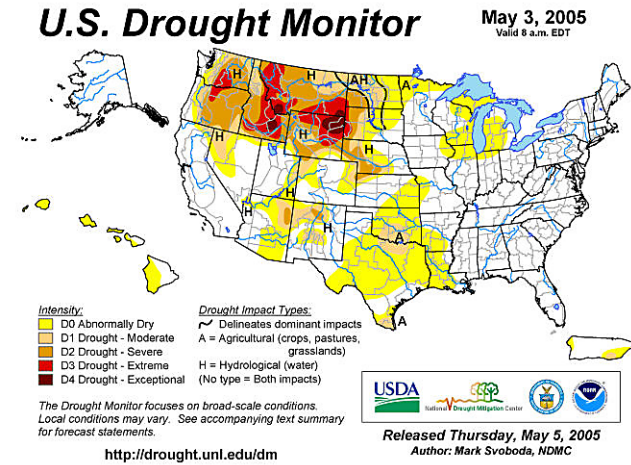


Figure 1 U.S. Drought Monitor map, May 3, 2005

The area was on the border of an “abnormally dry” pattern. Drought conditions were near normal through out much of the area.



Figure 2 FPB Fuel Model C-6

Conditions During the Fire

Spread Rates

The Cottonville fire was the most photographed and videoed forest fire in the history of Wisconsin, and had the most GPS data gathered of any historical fire, as well. This provided an opportunity to develop a progression map with real point-in-time fire location. After the fire, all the photographs, videos and GPS data were used to determine exact fire location with time stamps in the associated data. Using this data to retrace point-in-time fire progression was an advantage to actually predict fire progression. Much of this data not only provided information as to the location of the fire, but to fire activity as well.

The Canadian Forest Fire Behavior Prediction System (CFFBPS) fuel model C-6 (Red Pine Plantation) was used to determine the spread rates.



Like any fire behavior modeling system, there are assumptions that the fire conditions, weather and fuel conditions remain the same throughout a projected run. The hourly projected runs were calculated using hourly weather conditions from the Rome weather station which is located 10 miles NNW of the fire. Both the weather station site and fire have very similar topography, elevation and fuel components.

Figure 3 FBP Fuel Model C-6

FBP FM C-6 Behave run outputs using calculated hourly FFMC, CBH 3.3 feet, Foliage Moisture – 95%, Acceleration model – Open and hourly weather						
<i>Hourly Weather</i>	<i>Projected Run Time</i>	<i>Distance Spread Rate Outputs in feet</i>			<i>Flame Length</i>	
<i>Time CST</i>		<i>Head</i>	<i>Flanking</i>	<i>Backing</i>	<i>Head</i>	<i>Flanking</i>
1300	30	1655	426	15	27	19
1300	60	3933	998	35	27	19
1400	60	6430	1099	15	31	29
1500	60	6467	1125	17	31	29
1600	60	5007	1187	42	29	25
1700	60	5194	1205	42	29	26
1800	60	4190	1215	71	27	24
1900	60	2025	950	172	22	18
2000	60	1986	907	154	22	17

Weather observations from the Rome weather station May 5, 2005

Time	Temp	Rh	Wspd	Mx_Spd	Dir
	F	%	mph	mph	deg
00:00	47.1	37	4.4	8.5	180
01:00	46.2	38	4.3	7.8	180
02:00	35.8	59	1.9	6.3	225
03:00	43.3	44	4.5	6.7	180
04:00	44.2	41	3.9	7.1	180
05:00	43.2	43	3.3	8.1	180
06:00	48.4	37	4.9	8.1	180
07:00	54.0	30	8.0	12.1	225
08:00	60.8	24	9.4	16.0	225
09:00	64.6	22	12.8	21.1	225
10:00	66.4	22	11.6	18.9	225
11:00	70.0	19	10.0	18.5	225
12:00	72.1	17	10.8	19.3	225
13:00	72.1	18	9.4	20.7	225
14:00	73.4	17	14.2	19.9	225
15:00	71.8	19	14.0	21.7	225
16:00	71.8	20	10.1	22.1	225
17:00	71.2	21	10.4	20.3	225
18:00	68.0	25	8.0	15.0	225
19:00	62.6	30	3.5	11.4	180
20:00	57.7	36	3.7	6.3	180
21:00	59.9	32	5.1	8.1	180
22:00	58.6	33	5.4	10.7	180
23:00	58.5	32	6.3	11.7	180



Figures 5 and 6 on the next page contrast a free burning fire, assuming the fuel remained constant, and the actual fire, which had suppression action taken within 15 minutes of its ignition.

Main fire run time is dark grey. Light grey head fire stopped.

Figure 4 Rome Weather Station Observations CST

Cottonville Fire Progression

Computer Generated Progression

18,548 Acres

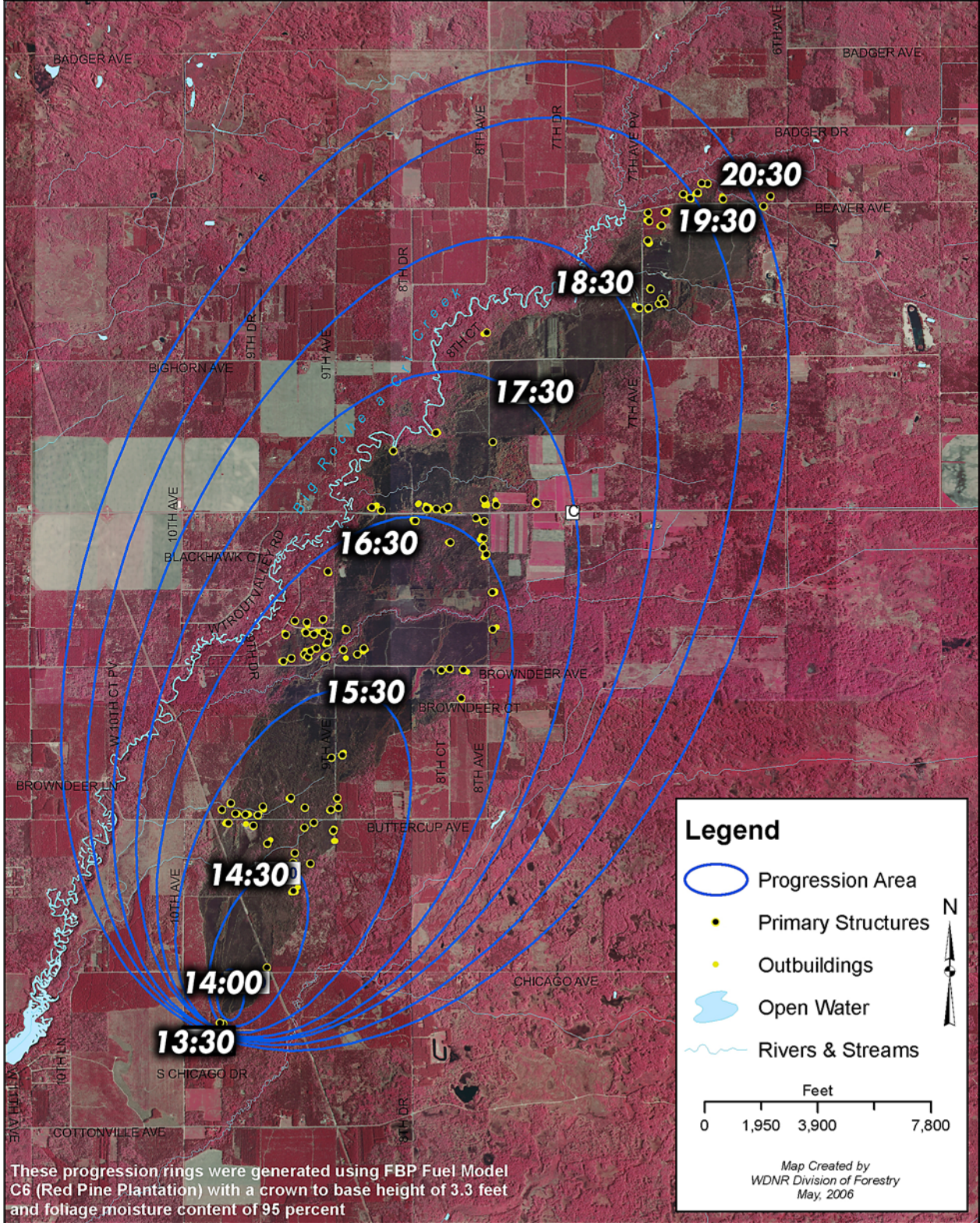


Figure 5 BEHAVE Fire Progression Map DST (Fire Time)

Cottonville Fire Progression

Actual Progression

3,410 Acres

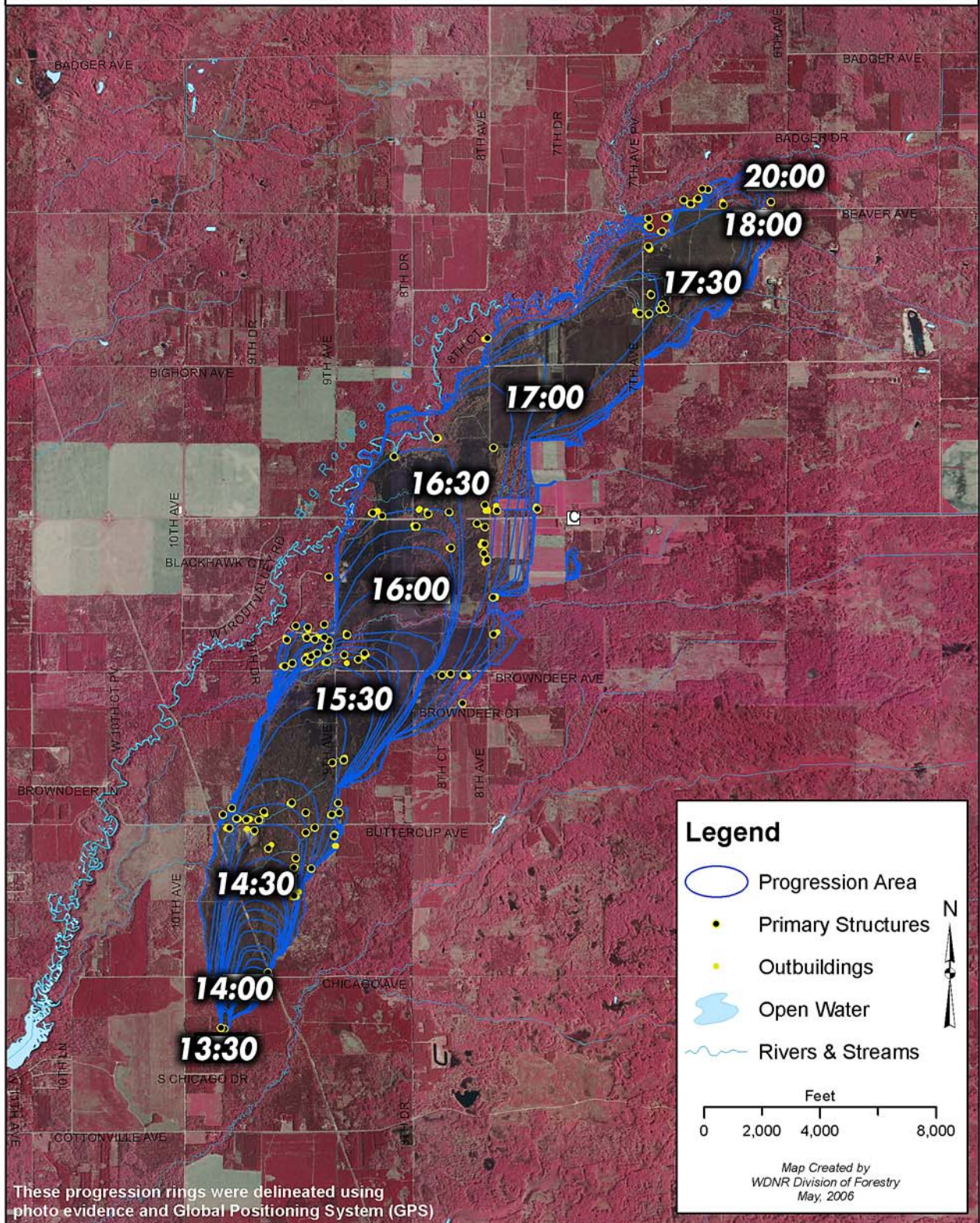


Figure 6 Photo and Video analyzed Fire Progression Map

COTTONVILLE FIRE - NARRATIVES

Steve Courtney - Incident Commander

MAY 5, 2005

I was located in the Dispatch center when the first report of the Cottonville Fire came from the Fire Towers at 1333 May 5, 2005. I monitored radio traffic as initial attack progressed. Radio traffic came through from Forestry Team Leader John Schwingel early in the fire for Area Ranger to give him a cell phone call. I called the Friendship Leader who started the conversation "This is it" "it's really boiling". We started the process of ordering the Incident Management Team to locate at Big Flats pre-planned Incident Command Post. Dispatcher and I dialed the number for the group pagers assigned to the IMT and got a response the number is temporarily out of order. Air Communications did not activate the number when they delivered the pagers. I got together with John Hintz and started to the fire. John began mapping the area while in route. I had a discussion with the Regional Leader while in route on ordering the CL-215's from Minnesota. I made contact with the Friendship Leader and then confirmed to make the order. Arrived on scene and located the Friendship Leader who was organizing the structural branch. I got directions from him as to where to find Jodi Malin the initial attack Incident Commander. I met with Jodi at the origin of the Cottonville Fire as she had named it and started the transition to assume Incident Commander. The following is some of the issues and recalls of events during the fire until the Incident Command Post was closed Sunday May 8, 2005.

The WI Rapids Initial Attack Checklist was used to relay information from the IAIC to myself. Used Hintz to record info then confirmed on way back to ICP with Dispatch on resources. Set some initial objectives, which were firefighter and public safety, protect structures, flank attack till fuels change, keep east of Roche a Cri Creek and then decided to assign Jim Barnier with Jodi as Line and I would assume IC. I took over as IC in the field and then was able to focus Jodi on the line construction groups that were formed and to concentrate on this. Jodi announced over the radio on red that I will become IC and she is now Line. I then traveled to the ICP at Big Flats Fire Hall, confirmed with Schwingel that he was coming to ICP to function as Operations Section Chief.

Gave an initial briefing, I believe about 1500 and the ICP was in progress of getting set up. Felt it was moving along well. Situation (Hintz) had a map started and was able to project quickly. Operations (Schwingel) was not yet back from the fire yet. Schwingel was told to bring a Fire Dept. person back with him for Structural. Structural started to get good personnel from the Structural Branch Team reporting to the ICP. White Alpha for Operations got up and functioning, but Lowband was not working nor could the MARC Frequency get operational. Lowband had poor power supply and MARC was programmed wrong in the Fire Dept Vehicle used. I made sure the Radio Tech Rasmussen was ordered and in route. Structural began using EG frequency and was forced to move to the other room in Fire Dept Bays. Steve Coffin DNR assistant to the Fire Dept. Boss position set up with the Big Flats Fire Chief in the field. A Rome Fire Dept. Unit was called for and used as the Fire Dept. Boss vehicle. A vehicle previously dedicated for this purpose would have been extremely valuable and could have resolved the communication problem. There is a lack of ability to get one through the DNR Fleet. Leased a vehicle for this purpose for the peak fire months of April and May for a couple years but when the issue of State vehicles started our requests to continue leasing was ignored. For 2 years in a row our application and request to lease was never answered yes or no. We were told it was hung up at DOA. The first planning meeting was set for 1545 but actually began about 1600. Ken Hartje from the Structural Branch Team asked about shutting all power off to the area for personnel safety which I approved. Evacuation was occurring and the Pineland Elementary School was to be used for a shelter. School children were on the bus home and were forced to return to the school. Situation and mapping was excellent. I discussed with Situation about getting some projections miles ahead for planning purposes. The intelligence aircraft could not be reached at times because he was talking to the air tankers. Discussed with Operations and stated my priorities for the use of the tankers was to support line construction then structure protection. Operations and I also discussed early on the existing line construction groups would go till the fire was contained, including into the night as necessary.

First planning meeting focused on objectives and getting a common understanding by all of the magnitude of the Incident and to plan ahead for

the long term. Needed additional phone lines at Big Flats ICP and Logistics tried to acquire from Verizon. Fortunately cell phones worked but Public information, Ops had to use cell phones. No fax was available until later on. An ICS 209 form was completed by Plans and sent in to command center. Sheriffs Dept also worked on trying to get phone lines in. Discussed with Emergency Management and some DNR staff about the availability or need for Critical Incident Stress debriefing for victims and our own firefighters since some tragic losses had occurred. County Health Depts. did have access to some psychologists if needed. Not aware of any used.

Evacuation proved a huge challenge with various issues to be resolved during the Incident. Pets and livestock also must be considered in evacuations. Many evacuees wanted permission to go back in or have someone go back and retrieve their medications. There were multiple requests. The Red Cross helped by contacting the local hospital who said they would make available any medications needed. This was a huge help. I worked closely with Chief Deputy Alex Bebris Adams County to decide areas to evacuate. A great move spearheaded by the Public Information Officer Jennifer Rabuck was to have an informational meeting with the evacuees at the Pineland School. I gave the information known at the time and answered questions at about 1900 hours. We handed out maps prepared by the Situation Unit to the evacuees. The excellent mapping on this fire and ability to print large numbers was invaluable. The structural mapping was also used to help develop a list of properties affected in the fire. This list was used by Emergency Management and Red Cross. We scheduled and delivered a follow-up meeting at 0900 Friday. The challenge of getting people back into their property proved as challenging as getting them out. I came up with a plan that I discussed with the Team at the Friday morning planning meeting at 0800. We also did not have a way to assess damages for information purposes. Structural Branch did an assessment which included structures lost and saved when they did their overhaul patrols Friday morning. The Red Cross had Damage Assessment Teams come in at 0830. The plan developed was for the Red Cross to do the assessment, they would come back and provide the results to the victims then the victims would be given a pass to go to their property and this would happen at 1100 hours. Several issues resulted which led to some problems. The Red Cross does not give the results to victims they

said they need some other agency to do that. The assessments did not get done by 1100. This time was given by me at the morning meeting with the evacuees. The Sheriff's Dept ended up giving the passes out to a long line. Once the property owners were let in the decision was made with the Sheriff's Department to allow them to stay. There were safety concerns as material was still burning, snags, etc. that was discussed and shared with the property owners. There was some feeling that this would be beneficial in having additional eyes for rekindles and some would help with mop up. The school worked great as an evacuation center. Classes were cancelled Friday. It was close yet it was not at the ICP. There could have been additional issues if co-located, as may be the need in Rome. Sensitivity to the victims was continually emphasized.

Discussion occurred with Emergency Management and Red Cross about the need to get information out to the public to try to relieve the amount of calls that would go to Adams County Sheriff Dispatch Center. Information line at the ICP was developed but was a cell phone with call waiting so if they were talking to someone and someone else called they got no answer. Lack of phone lines was hindrance. PIO's did a good job of getting out what they could. Four PIO's were used at one time. PIO's established a press conference for Friday morning 1100. We were alerted that the Governor may come up Friday, but information was limited. The Governor did arrive Friday morning. This did fit into the press conference and worked well. He was also able to meet with the evacuees.

During the first day there was two times I recall that I was approached by LE Branch about civilians lost and unaccounted for. A lady was looking for an elderly relative that could not be found. We worked with structural and LE branch to locate and she was later found. Deputies at a road block reported a person while they had turned away went through their road block and into the flames and smoke to try to get to his livestock. Through discussion with locals and vehicle description we were able to identify who it was and later found he was out of the fire area. On Friday or Saturday a distraught victim who had lost their trailer which had all of her Fathers memorabilia became irate over suppression equipment working on her property. A Sheriff's Deputy went to help calm the incident.

I decided with the Sheriff's Dept. that we would maintain the road blocks until Saturday morning. A number of factors weighed in on the decision. Once the road blocks were taken down, a large amount of traffic occurred. I had a discussion with the Suppression Specialist on whether DNR Forestry should or could pay for LE costs to continue the road block service. This was later discussed as a responsibility of the County Sheriffs Dept.

I was very happy with the teamwork being displayed by the structural branch team. I believe the pre-training was a big factor in the way they all worked together. They covered their own resource tracking and ordering. They also dealt with coverage for FD's home units.

Some factors that can be stressed for WI Incident Management Team training includes: An understanding that the Section Leaders are responsible to assess adequate staffing of their sections. They must realize they need to do that and what units should be filled. Manager positions rather than doers. Example would be that we have not focused training on the need for Documentation Unit leader or Demobilization Unit Leader but these roles filled earlier would have been helpful in the end. A good demobilization plan done early on would have resolved the release issues later brought up including the rest guidelines. The IMT planned early on to transition to a night shift about 2200 hours. I transitioned with Randy Schott as night shift IC. This transition occurred from about 2100 to 2300 hours. I discussed with Operations a process to transition personnel in the field a Division at a time. We needed to clarify better all Units expected to return the next day. Units responding as well as the Rapids IMT needs to now understand that resources assigned to the Incident are ours until we release them. I did not feel a strong need for a Liaison Position because an EOC was not established and all players were at the ICP which let me deal with this responsibility. Local Govt. officials were briefed by County personnel or were members of the Fire Dept. The only time a Liaison Position may have been helpful and I tried to do this with the Suppression Specialist was working with the Sheriffs Dept and Red Cross and the issuing of passes for re-entry. Had a separate EOC been established a Liaison position would be required. A Finance Section was established and should be a part of WI IMT's. IMT must be aware that a high amount of video and photography is now able to be taken during an Incident.

Safety Officers were assigned for day and night shifts. Safety issues included Line construction and quick assignment of Divisions. A news helicopter was in airspace. Airspace restrictions were requested. Fire Depts. instructed to utilize In the Black tactics. Once road blocks were taken down, traffic concerns with sight-seers and firefighting equipment was a concern. Property owners allowed to return were instructed on hazards of snags, burning debris and power lines. Power was shut off to area and Operations worked with Power Company Friday to restore. Night time operations were a concern. Some were out without seeing in daylight. We moved up shift changes Friday night to help this. Demobilization and providing rest before travel was discussed. Local resources were allowed to drive home to sleep in their own beds. Drinking water was reinforced at planning meetings.

Volunteers did come to help, but did not seem to be a critical issue to deal with. Amateur Radio also came to assist and was used to help with night road blocks and communication between the evacuation center and ICP.

Our current forestry organization was extremely beneficial to address the staffing needs for this fire. Team Leaders were able to fill key positions Operations Chief, Fire Dept. Boss and Plans. This left more Rangers available for Group Supervisors, Division Sups, Wildland Branch Director. Private Foresters filled the key IMT and Division Supervisor positions. Command and General Staff Positions must be filled with personnel that know the responsibilities of ICS and how it works. I feel we have a strong team in Rapids because we are able to fill key positions with staff that know the job. All programs from DNR participated and helped with this Incident and there was great cooperation. The IMT must know what to tell them to do. The IC cannot tell everyone what to do. The number one priority for addressing forest fires is personnel. The success of an Incident Commander is dependent on the quality of the personnel around you.

Jodi Malin - Initial Attack IC, Line

MAY 05-08, 2005

On Thursday, May 5, 2005, I was on duty at the Friendship Ranger Station. At 1:32 p.m., the Adams County Sheriff's Department received a report of a house and grass fire at 972 S. Chicago Court in the township of Preston, Adams County. They paged WDNR and Adams County Fire District. I went in service and ordered 2 heavy units, Rapids patrol, and the SEAT. Friendship Team Leader, John Schwingel, also went in service to the fire. While enroute, I ordered 2 additional heavy units and gave an approximate legal description to Rapids dispatch and responding units.

I arrived on scene at approximately 1:40 p.m. I did not observe any structures on fire, but several were threatened. I also observed a large fire ring in front of where I had parked that was still smoking. After Rapids Patrol (air attack) gave a size up, I ordered 2 more heavy units and 2 Rangers. Friendship Leader and I had a short discussion near the origin. He had asked Deputy Darrel Renner to photograph the fire ring and conduct the initial cause investigation. We discussed which flank was to be priority and confirmed this information with air attack. It was decided that the right flank was priority due to the fact that the first structure the fire was going to encounter was on the right flank. Schwingel stated that he was going to get the fire department organized for structural protection and go the Big Flats Town Hall to start setting up the ICP. We both recognized that this fire had the potential to become very large and threaten hundreds of structures.

When the first heavy unit arrived on scene (FRD 3), I told him that he would be plowing on the right flank, but was to wait for another tractor-plow before starting.

At 1:47 p.m., I ordered 2 more heavy units, 2 heavy dozers, and 2 more Rangers through dispatch. When the SEAT arrived on scene, he was directed to drop on the head of the fire to knock it down. That proved to be unsuccessful in this situation. He was ordered to load and return. FRD 3 and FRD 2 started plowing on the right flank and FRD 1 joined them a few minutes later. When Nekoosa Ranger arrived on scene, I assigned him to the right flank as the right line construction group supervisor. NEK 1 arrived on scene and was assigned to the left flank along with Necedah Ranger, who would be the left line

construction group supervisor. NEC 1, Dells 2, NEC 2, and WHG 1 were later assigned to the left line construction group. Dells 1 and NEK 2 were assigned to the right group. The COOP Ranger was assigned to H Division. Sandhill Forester was assigned to Bravo Division, which went from the origin to Chicago Avenue and then later changed to Buttercup Avenue on the right flank. At that time there wasn't any equipment for him. The Adams County Highway D-5 was assigned to him when it arrived.

At 2:05 p.m., I named the fire (Cottonville Fire) and ordered 2 hand crews and 2 more heavy units. When the SEAT returned, he was directed to support line construction by looking for spots across the control line and cooling down the flanks to speed up line construction. Both line construction groups were directed to use Red net to communicate amongst themselves and air attack. Throughout this time, I was working with Chief Deputy Alex Bebris to designate areas where residents were to be evacuated. Air attack was keeping me up to date with fire location, behavior, and direction of spread. He was also acting as a lookout for the line construction groups and divisions.

At 2:16 p.m., air attack made a request for an additional aircraft to assist and I ordered one through dispatch. Dells Ranger was assigned to Alpha Division and was later assigned a private dozer. Alpha Division went from the origin to Chicago Avenue and then later Buttercup Avenue on the left flank. The divisions were directed to use Brown net for tactical traffic. At some point, Jim Barnier arrived on scene and I asked him to assist me. The LTE firefighter I had with me that day went with the right group to burn out line. The Line position is a two person job. It is too difficult for one person to keep track of resources and monitor radio traffic.

There was a male and female subject in the origin area and I assumed they were the responsible party. Barnier spoke to them briefly and confiscated the lighter that was used to start the fire. I did not have any contact with the subjects.

The Rapids Area Ranger and Area Staff Specialist arrived on scene at 2:21 p.m. I briefed them on the current situation and what resources had been ordered and assigned. I made a resource order for 4 heavy units, 2 rangers and 2 heavy dozers at 2:37 p.m. through Rapids dispatch. When the briefing was concluded, the Area Ranger took over as IC and I became Line Boss.

Once the Area Ranger took over the IC role and Operations was in place, resource ordering and assignments were made from the ICP. From then on, my role as I understood it was to assist Operations with coordinating the wildfire resources from the fire line.

Barnier and I left the origin area. I spoke briefly with Deputy Rod Stormoen who was parked at the intersection of 10th Avenue and S. Chicago Ct. and told him that if he needed to leave to help with evacuation that he should put fire line tape around the origin to secure it. It had already been photographed and verbal statements from the responsible party were taken as well.

We drove up to CTH C about the same time the head of the fire was approaching it (approximately 4:00 p.m.). We met briefly with H Division and discussed trying to stop the head at CTH C. We felt that if the CL 215s from Minnesota was on scene in time that it could be used to help hold C. The CL 215 did not arrive in time and as it turns out, only one responded to the scene. The fire crossed C about 30 minutes later.

We met with the left line construction group on Browndeer Avenue. NEC 2 had used some water, so I filled him with water from the 4X4. They seemed to be doing well and continued with line construction. We drove over to 8th Court south of Browndeer Avenue and met up with the right group. I gave them my two drip torches and some drinking water. They also indicated that things were going well and didn't have any immediate needs.

Shortly after we met the right group, air attack called on Red and stated that both he and the DNR intelligence aircraft needed to refuel. I was very concerned with the fact that we would be left without a lookout. At that time I didn't know that the Minnesota lead plane (air attack 4) was on scene. The DNR pilots communicated to him and it was decided that air attack 4 would act as a lookout until the other 2 planes returned.

Barnier and I had a discussion with Operations at approximately 4:45 about how to deploy the two SEATs and the CL 215 when it arrived. It was decided that the CL215 would support line construction on the left flank and the SEATs would do the same on the right. The left flank had more structural involvement. The first priority was to support line construction and the second was structural protection. This information was communicated to both group

supervisors and to the air resources through Rapids air attack. Some time later, I followed up the group supervisors to see if they were getting air tanker support. Both said they were not. I again communicated to the air resources through Rapids air attack that the first priority for the air tankers was to support line construction.

At 6:40 p.m., I heard H division request air tankers and dozers to contain the head of the fire north of Beaver Avenue. The fire intensity had died down enough that he felt there was an opportunity to stop the forward progress of the fire. The air tankers were reassigned to H division.

When the right group tied into CTH C, we met them (approximately 8:30 p.m.). There was food and water there for them. We were told that a fuel truck would be there shortly. The right group supervisor approached me and stated that one of the LTE firefighters was exhausted and was having trouble walking probably from blisters. I talked with the firefighter and encouraged him to go back to the ICP to rest. He got a ride back to the ICP from the two Big Flats firefighters that delivered the food/water. The other firefighters that had been walking were tired, but stated that they were doing ok. They did get an opportunity to rest while waiting for the fuel truck. The tractor operators stated that they could probably make it on the fuel they had and continued on the right flank.

Barnier and I met up with the right group again after dark north of Bighorn Avenue. The flank was difficult to follow at that time because the fire behavior had decreased and even gone out in places. We helped them locate line for a while and then returned to the ICP around 10:00 p.m.

At the ICP, Operations briefed me on how we were going to transition with the night shift resources. I drove Barnier back to his truck by the origin as he was going to help transfer equipment operators back to their trucks when the control lines were completed. I met with the night shift Line Boss and Division Supervisors at the intersection of 8th Avenue and CTH C to give a briefing. The Division Sups coming off the line also briefed their replacements face to face at that location. The line construction groups were still building line to tie into Beaver Avenue. The transition of the Line Boss position was complete at 12:33 a.m. At 12:35 a.m., the fire line was completed and the fire was contained. I then went back to the ICP to demob.

On May 6th through May 8th, I was assigned to the Line position during the daytime hours. At that point the Divisions were performing mop-up and things were going fairly well. I would have liked to have seen a larger fire department presence on the May 6th. There were some rekindles on/around structures and Division resources were diverted from their tasks to take care of those. I felt that letting the residents back in was both good and bad. It was still hazardous in the fire area and I was concerned that someone may get hurt. On the flip side, the residents could perform some mop-up themselves and look out for any potential problem areas especially close to the control lines. I was opposed to letting the public into the area on May 7th. There was a lot of traffic on narrow town roads and it was dangerous for the firefighters. I understand the Sheriff's Department could not afford to keep the road blocks in place. On May 8th, the fire was turned back over to the staff at the Friendship Ranger Station. We monitored the fire until May 17th and declared it out at 4:30 p.m.

General Comments

SAFETY:

It was apparent to me that everyone on the line was concerned about safety, particularly the line construction groups. Everyone recognized that we were working in potentially dangerous fuel types (pine plantations) and did what was necessary to mitigate those hazards. The use of Rapids air attack as a lookout was critical. He did an excellent job.

There were some heavy equipment operators that did not have PPE or communications. Those operators were on colder divisions and I thought the Division Sups did a good job recognizing the lack of communications and kept in direct contact with those resources. Everyone else I saw was wearing proper PPE. The Adams County Highway Department heavy dozer is equipped with all the necessary PPE and radio equipment including a Peltor headset.

On one occasion on May 5th, Barnier and I encountered some locals trying to suppress the fire themselves. They didn't have any tools or PPE; they were using their coats to swat at the flames. We told them to leave the fire area, which I believe they did.

The air tankers were making drops without any coordination with ground resources. We made several attempts by radio to Rapids air attack to get them to work with the line construction groups. The resources on the ground had no idea when or where the tanker drops were going to be made.

COMMUNICATIONS:

I decided to have the line construction groups work on Red net and the divisions work on Brown net. Rapids air attack could talk to the groups on one frequency and they could hear what was going on on the other side of the fire and who had priority use of the aircraft. I felt the use of two tactical frequencies and one command frequency (White Alpha) was adequate for the wildfire suppression resources. I would not have been able to monitor any more frequencies than that. The length of this fire made it impossible to communicate on the tactical frequencies from one end to the other so it was imperative that White Alpha was used.

The lack of communication between the air tankers and ground resources was a safety concern. We tried on several occasions to coordinate the air tankers through air attack, but he was not in direct communication with them either.

MISCELLANEOUS:

I thought everyone did a great job, especially given the fact that most of the personnel had not experienced a fire of this size and complexity. Most of the division/group supervisors, myself included, were not qualified according to IQS requirements to perform the jobs that they were given. However, most of us had been through some classroom/simulation training to prepare us for such assignments. Without that training we would not have been as well prepared to perform those duties.

There were a few pieces of equipment that broke down, but there were enough resources to compensate and as a result line construction was not impeded. Two tractor-plows had to be taken out of service and two that were repaired quickly in the field.

John Schwingel - Friendship Operations Section Chief

INITIAL ATTACK:

On May 5th, 2005, at approximately 1:30 p.m., I responded to a forest fire in the Township of Preston, Adams County, and here after known as the Cottonville Fire or fire. I learned of the fire by receiving a page from the Adams County Sheriff's Department. At that time, I was in my office at the Friendship Ranger Station. The page received was that of a structure fire that was spreading into the grass, this later turned out to be incorrect information.

I responded from Friendship Ranger Station in a type 8X engine, Ford Ranger 4x4 with pump and 50 gallon water tank, which I normally operate in my position as a Forestry Team Leader during periods of fire danger staffing.

While enroute following Friendship Forest Ranger Jodi Malin in her type 7X engine, I heard radio traffic from local lookout towers. I do not remember if I heard Dyracuse Tower report the smoke prior to leaving the station; however that was the first tower I heard the report. Shortly, Necedah tower and then Skyline Tower reported the smoke. The rapid manner in which the reports from several towers were being given indicated to me that this was a rapidly spreading fire. I am very familiar with the reported fire location. Based on my knowledge of fuels and pine plantations in the area and the current predicted fire behavior, while enroute (13:38) I prompted Malin to my concerns on red net. She then requested two additional heavy units in addition to the resources she had already requested.

While still enroute to the fire I heard over the radio Rapids Air Attack give a first in report (13:42), that the fire was about one acre in size in pine staying on the ground but burning hot. I could see the smoke once I turned on to Cottonville Avenue from STH 13. At this time, the amount of smoke was indicating to me that the fire had great intensity, was probably burning in the crowns of the pine due to the grey to blackish boiling appearance of the smoke.

I arrived on scene directly behind Malin and parked in a driveway just west of the fire origin property. At this time, we were the first arriving fire fighting resources. I saw several people in the yard area of the property to the west of the origin

property looking distraught. I went to Malin's 4x4 and had a brief discussion with her between radio contacts. I could see flame heights 30+ feet high behind what I thought was a structure in front of Malin's vehicle. Later, I discovered the structure was a camper trailer. We discussed the resources that had been ordered and discussed the immediate deployment of the tractor-plows. That was to assign them heavy to one flank of the fire for safety and efficiency. I commented that she needed to 'win' one flank for sure not to split resources and lose control of 2 flanks by not having tractors plowing in tandem. Malin asked which flank was the priority which she asked Air Attack over the radio if any structures were threatened on the head end of the fire. Air Attack said that there was one structure on the head end on the right side that was the most immediately threatened. This was the structure on Chicago Avenue and the pipeline ROW. After hearing this report from Air Attack we concurred that right flank would be the priority flank to assign tractor-plows plowing in tandem in an attempt to protect the structure on Chicago Avenue. Malin ordered 2 additional heavy units and 2 heavy dozers and 2 additional rangers (13:47).

I could see what appeared to be the cause of the fire immediately in front of Malin's vehicle. It was a shallow depression in the ground surrounded by rocks in the appearance of a 5-10 diameter campfire ring. I assumed that this was the origin of the fire.

I told Malin that I was going to work the fire department resources and direct them into the area that they were needed. I knew via radio traffic that Adams County Fire District (ACFD) Assistance Chief had requested mutual aid from Big Flats Fire Department. I also assumed that Malin understood my role since this was a common assignment I had undertaken on past fires with her as incident commander. We also understood that eventually, if needed, I would be assigned the position of operations section, therefore; Malin and I knew that I could not commit to a fireline position having this other responsibility.

I also told her prior to leaving her that I was going to call out the incident management team (I.M.T.) with the command post to be at the Big Flats Fire Station.

At this time, I left Malin and spoke face to face with Adams County Sheriff's Deputy Darrel Renner. I told him that this fire was going to be

large and that I needed him to take photographs of what I assumed to be the origin and get a statement before the situation changed due to the fire fight. He acknowledged that he knew what I wanted. I could see while backing my vehicle out of the driveway that Deputy Renner was taking photographs with his camera.

I drove back to the intersection of South Chicago Court and 10th Avenue, while enroute I called Rapids Dispatch (13:47) reported that I was on scene and that I wanted the I.M.T. and the Area Leader to call me on my cell phone.

I discussed with Steve Courtney the situation on the phone (13:48). I told him this was a going fire and that we needed the team to set up at Big Flats. He questioned if the ICP location would be affected by the fire, which I told him no. He said he would be coming to the fire scene.

At this time, I talked with a member of the ACFD at the intersection. I requested that his radio operator at the fire station contact Mike Rusch the fire chief and member of the structural branch and have him report to the ICP. Then I met the Big Flats Fire Department (BFFD) Chief Dick Meyers who was alone driving the first BFFD unit – tanker 512. I told him that he needed to find a different operator of the tanker and he was to come with me to serve in the role of Fire Dept. Boss (FDB).

Meyers made radio arrangements to find and operator of the tanker and then came with me into my 8x engine. I gave him a quick briefing of the situation that he needed to request mutual aid fire departments and organize them into zones. I provided him a copy of my zone map and set my mobile radio on a fire department frequency for his use, he also had his portable radio on another frequency, while I monitored red net on my portable radio.

Meyers and I traveled east bound on Chicago Avenue from 10th Avenue to the structure that was reported threatened by Air Attack with BFFD Tanker 512 in tow. We arrived to find Chris Klahn and Mike Lehman at that location in Klahn's DNR engine. The fire at this had not jumped Chicago Avenue but was crowning in the young red pine plantation to the south of Chicago Avenue.

The structure on the north side of Chicago Avenue next to the pipeline had a locked gate, which I cut the chain to gain entry. We were not able to provide action on the structure since the fire was now jumping and spotting across

Chicago Avenue. I took several photographs of the fire while Meyers was ordering more resources. Meyers and I traveled through the fire back west on Chicago Avenue to 10th Avenue to find several fire trucks from BFFD and ACFD staged. While Meyers was giving assignments to these fire resources I directed two lost heavy units and the Adams County Highway Dozer to the origin of the fire. I also assigned the Rome Fire Department engine to go to the structure at the pipeline and Chicago Avenue and meet up with BFFD Tanker 512.

Then I met with John Hintz and Steve Courtney. We had a brief discussion on what I was doing, that Steve Coffin would be arriving shortly to relieve me, that I should report to the ICP and if CL-215 air tankers should be order. I replied that I understood and that yes CL-215's should be ordered as I anticipated given the conditions this would be a project fire. Courtney said that he would request the CL-215's.

I left Courtney; Meyers and I traveled north to Buttercup Avenue. We found a Rome Fire Department unit on Buttercup Avenue and asked them to find their zone maps. Shortly, Chris Klahn was on Buttercup Avenue and told me that he was evacuating the residences and needed assistance. I directed him to one of the squad cars on Buttercup Avenue. He then left me to re-check the area.

I asked Meyers if he had the some zones assigned and who was in them. He told me and also had the names of the fire departments written on the zone map that I gave him. I do not recall who was assigned where but had confidence that Meyers did have control of the organization and was correct on which zones were to be activated.

I made contact with Alex Bebris, Chief Deputy of the Adams County Sheriff's Department. I spoke face to face with him that did he know that there was to be an ICP at BFFD and that he needed to report there. He understood and said that he would report to the ICP.

I made contact with Steve Coffin on my cell phone as radio traffic was intense. He said that he was helping set up the ICP and will meet me on Buttercup Avenue which he did with the Rome FD Rescue truck which was set up as the FDB vehicle. At this time we moved Meyers into the FDB vehicle. I then reported to the ICP – while enroute I heard Malin over the radio say that Courtney was taking over as Incident Commander and that she would become Line.

- ✓ Initial attack was well coordinated
- ✓ Fire department resources were immediately coordinated into zone organization
- ✓ ICP & IMT were immediately requested

INCIDENT COMMAND POST:

I arrived at the ICP to find that most of the set-up was complete (approx 1525). The white alpha radio repeater was hooked up to the antenna, plug-in to power but was not turned on. Bruce Djupstrom, Logistics Section Chief, met me in the building. I asked him if white alpha was up and running. We both worked to turn on the repeater and were successful. I then called Air Attack on red net from my portable for him to relay broadcast to the fireline that white alpha was functional and that Operations (OPS) was in place.

Rebecca Mouw and Matt Schoonover were at the OPS table awaiting assignment. I told Mouw that I needed her to stay at the radio to assist me until Brad Kildow arrived to relieve her. Once that was accomplished I told her that her assignment would be Delta Division Supervisor. Mouw began a handwritten radio log. I called Malin to get an update on resources assigned to the fire which I believe that I shared with Tom Quilty to begin set up of the resource locator board. I then called Rapids Dispatch (15:29) and asked what resources had been ordered that had not arrived. I had a discussion about tactics and objectives with Courtney who now was at the ICP. I do not remember specifics of the conversation; however I understood that we were in for a long day, to be safe and that it appeared that there was no immediate opportunity to make a stop on the head.

The Structural Branch Team (SB) was at the table adjacent to OPS. I could see and hear that they were struggling to make the radio on their desk operate. I could hear and told them that every time I transmitted on OPS radio it caused interference on their radio. Shortly there after, SB relocated to the base radio in the fire truck bay which adjoins the town hall where the main ICP functions were located. Occasionally, I did get reports from SB from a runner.

There was quite a buzz regarding the arrival of the CL-215's. I heard from several people the status of their ETA. I was still under the impression that we were to receive two air tankers which this was incorrect. I had a tactical conversation with Klahn ('H' Division) regarding

the use of the CL-215's upon their arrival (16:04). He was in the field and I believe that he was in the presence of Line (Malin and Jim Barnier). That tactic was to use them to make a stop at CTH C if possible. This did not occur since the fire had jumped CTH C prior to the CL-215's arrival. I was questioned by the IC what were the airtankers and SEATs assigned. I did not know as I had no direct communication with Air Attack. I was given a tactical directive by IC to use the air resources in this order of priority: 1st: assist with line construction and 2nd: structural protection. This was communicated to Line. I had a discussion with 'H' Division again I had the impression that Line was present with "H" Division that the CL-215 would be on the Left Flank and the SEATs on the Right Flank.

Kildow arrived at OPS and was briefed and took over Mouw's duties and continued a handwritten radio log (approx. 16:07). Kildow became the Wildfire Branch Director and almost exclusively was the radio operator.

I attended several planning meetings the first I believe was at 16:30. OPS was directed to work on a night shift resources order. I spent a significant amount of time assigning resources and assisting in maintaining the resources locator. OPS made a few resources orders early on but was assisted by IC on ordering additional resources. Very few times and only late in the evening did we desire more resources and when that occurred it was short in duration as additional resources were still arriving. Night shift were arriving at check-in but I did not know that they were ordered for night shift and were placed on the line since the fire was still not contained and new divisions were still being staffed.

OPS worked in concert with Line to establish drop points, resources assignments and determining needs. Drop points were mapped by Situation. Situation did an outstanding job maintaining and displaying a current map. Maps were handout to each resource that received an assignment from OPS at the ICP.

There had been several equipment breakdowns in the first period. All operators were in a safe position and were assisted by the mechanics that were at the ICP. We had mechanics from Friendship, Black River Falls and Tomahawk at various times through out the incident. They were very important to keep all resources operating.

- ✓ The ICP facility worked well except for SB communications and lack of hard line phones

- ✓ OPS did not have continuous face to face contact with SB
- ✓ The IMT & Dispatch was well coordinated and **greatly supported** OPS/field resources
- ✓ Resources arrived above those requested by OPS (much appreciated)
- ✓ Incoming resources were quickly assigned
- ✓ OPS was in contact with LE branch as needed
- ✓ OPS was clear on objectives
- ✓ Line and OPS worked well in concert
- ✓ Communications using white alpha were good and supplemented by cell phones
- ✓ OPS did not have direct communications with air attack – relied on Line to establish contact (red net)
- ✓ OPS did not have direct control of air resources
- ✓ Equipment breakdowns were managed and did not disrupt progress of line construction

STOPPING THE HEAD

I was in communication with “H” Division who had found that there was a significant reduction in fire behavior north of Beaver Avenue and that the Big Roche A Cri creek was holding (18:40). We decided to attack the head using the CL-215. I had confirmation that the drops were being made from Doug Meier. “H” was supported to build line using two heavy dozers as there were no tractor-plows available at that time. Fish and Wildlife Service Engine Crews were eventually sent to “H” to assist in holding that portion of line. At 23:19 we had confirmation that ‘H’ had line from 6th Avenue across the head and had tied in with Left Line Construction Group. The right flank was still openly burning at this time.

SUMMARY:

All of the people I worked with were professional and safety minded. The training and previous experiences paid off for a successful firefight. I greatly appreciated that each of us supported each other, if one did not think of it, someone else did. I am also very thankful that there were no serious injuries or deaths associated with the fire or our efforts.

Attachment: Ops Log

Brian Luebke

MAY 5, 2005

At approximately 1333 hours Dyracuse Tower reported a small white smoke at 175 degrees while LTE Jared Tessman and Forest Ranger Brian M. Luebke, were at the Town of Rome Municipal Building with the Nekoosa Type 7x Engine visiting Nekoosa 1 Heavy Unit (Norris). As Dyracuse Tower was calling in the smoke, a page from the Adams County Sheriff’s Dispatch was given for Adams County Fire District and Friendship DNR for a grass and structure fire on South Chicago Court. Within a minute Dyracuse Tower reported that the smoke looked like it was growing. Ranger Luebke informed dispatch by telephone that he would be headed south and would be standing by at State Highway 13 and Badger Avenue until further notice. When Friendship Ranger ordered two additional Heavy Units and two Rangers, Ranger Luebke informed dispatch by radio that he was in service to the reported fire. While responding to the fire Ranger Luebke had Tessman taking photographs of the smoke column prior to arriving on scene. Ranger Luebke heard radio communications on red between Rapids Air Attack and Friendship Ranger of the fuels down fire and the fire behavior changing from occasional torching to continuous torching when the fire started burning in the young red pine south of Chicago Avenue.

At approximately 1352 hours Ranger Luebke contacted dispatch to inform him that he was on scene and would be switching to red. Ranger Luebke was following Friendship 2 Heavy Unit for the last mile prior to the scene. At the intersection of 10th Avenue and South Chicago Court Friendship Leader (Schwingel) was directing traffic east on to South Chicago Court. Ranger Luebke pulled off the road and parked in the north ditch of South Chicago Court just east of the driveway where the Friendship Type 7x engine was parked. Ranger Luebke and Tessman grabbed their line gear. While Ranger Luebke met with Forest Ranger Jodi Malin, Tessman grabbed a drip torch and Pulaski from the Nekoosa Type 7x engine. Ranger Malin assigned Ranger Luebke as the Right Line Construction Group Supervisor (Right Group Supervisor). Friendship 1 and Friendship 3 were already working on the right flank with her LTE Rider, Mike Bunker, burning out the line. Ranger Malin told Luebke she would assign Friendship 2 to the Right Group.

Ranger Luebke and Tessman quickly caught up to the two tractor-plows and rider on the right flank. Friendship 3 was in front of Friendship 1 and Bunker was walking behind burning out the line. Initially the forest cover was fairly open large red pine and oak mix. The tractor-plows were able to maneuver very well. Shortly after meeting up with the resources, Friendship 2 caught up with the group and worked between Friendship 1 and 3. Luebke assigned Tessman to stay behind the group and watch for fire across the control line. Ranger Luebke and Tessman took a couple of digital photographs of the fire behavior and suppression efforts in the oak/red pine near the origin of the fire. There was one slopover as the tractor-plows went up a small incline. Luebke heard radio traffic on Red from Rapids Air attack that the wind was switching and pushing the right flank hard in the young red pine and the flank was becoming the head. As the Right Group entered the 20-foot tall red pine plantation Malin asked Luebke if he needed another tractor-plow on the right. Luebke stated that good progress was being made with three tractors. As the burnout operation continued behind the third tractor-plow, the fire behavior increased significantly. The red pine would often torch right along the furrow and the fire behavior would intensify as the flanking fire and the fire from the burnout operation would pull together. Luebke took several digital photographs of the fire behavior along the right flank as the tractor-plows made progress and the burnout operation continued. At approximately 1418 hours the Right Group made it out to Chicago Avenue and continued north. Ranger Luebke informed Malin that the group had reached the first east-west road and the group was continuing north. He asked Malin if there was a division and/or personnel assigned behind the group yet. She stated that no one was behind them yet, but would be shortly. The group plowed along the west side of a structure just north of Chicago Avenue and tied the line into the pipeline right-of-way that the structure was adjacent to. The group crossed the pipeline right-of-way and continued plowing and burning out the line on the east side of the pipeline. Shortly after crossing the pipeline, Rapids Air Attack informed Luebke that there was a slopover on the right flank, south of Chicago Avenue. Luebke sent Friendship 3 and Bunker back to catch the slopover. Luebke had Friendship 1 and 2, and Tessman hold up where they were. Bravo Division Supervisor Mark Chryst called Luebke on Red and informed him that the slopover was getting bigger and that more than one tractor-

plow may be needed. As Luebke made it out to the pipeline and called the remainder of the group back to the south side of Chicago Avenue, the SEAT made a retardant drop on the slopover. Luebke observed and felt the drift of the tail end of the retardant while he was on the pipeline next to Chicago Avenue. Luebke thought the SEAT was flying lower than usual as it passed over him. Malin asked Luebke if he needed another tractor on the right flank. Luebke said that he would take one or two more tractors. Friendship 3, Bunker, and Luebke followed the furrows that had been compromised back to the far end of the slopover because most of it was black. While walking back to the beginning of the slopover, Luebke heard Left Group Supervisor call "Emergency traffic, Nekoosa 1 the furrow did not hold. You need to come back and catch the slopover." He called Nekoosa 1 several times on Red to warn him that the fire had slopped over is furrow, but there was no response from Nekoosa 1. Luebke kept off the radio because of the priority on the left flank. Luebke also heard Rapids Air Attack call Nekoosa 1 numerous times on Red as well. Friendship 3 put a furrow around the slopover, but it did not hold. Because it did not hold Luebke called to Friendship 3 on Red that it did not hold between traffic that was occurring on the left flank. Friendship 3 put another furrow in around the new slopover, but it did not hold either. While Friendship 3 was attempting to catch the slopover Luebke met with Chryst face-to-face. He stated that he did not have any equipment or personnel, other than his rider, at the time. He commented that just after the SEAT dropped the fire intensity really picked up and that the retardant didn't seem to do any good. Line broadcast over the radio that White-Alpha was operational to talk to Operations back at the ICP. Luebke acknowledged the message. The wind was pushing the right flank again and likely creating spot fires on the outside of the furrow. Luebke knew the pipeline right-of-way was very close to the east of his location. He communicated to Friendship 3 that he was to build a line/furrow directly east to the pipeline right of way. Luebke walked out in front of the tractor plow to show the way. After Friendship 3 knew where he was going to get to the pipeline, Luebke went back to meet with Chryst again. Nekoosa 2 was approaching from the direction of the origin with his rider, John Baker, following up behind. Luebke instructed Nekoosa 2 to widen the line that Friendship 3 was building so that it can be burned out. As the line was widened, Luebke instructed Tessman to burn out the line out to the

pipeline. Nekoosa 2 informed Luebke that it was going slow to push the pine over and off the line. Luebke requested Friendship 2 to assist Nekoosa 2 to finish widening the line. A couple of shallow furrows were created on the west side of the pipeline to assist in burning out the corner of the red pine plantation. Luebke instructed Tessman, Bunker, and Chryst's rider Terry Taylor to burn out the corner of the plantation starting at the corner near Chicago Avenue. Luebke observed Tessman take one drip torch and start burning out west along Chicago Avenue, Taylor started at Chicago Avenue and burned out along the furrow on the west side of the pipeline and Bunker stood where they had started so he could watch both burnout operations. Once the burnout operation was complete, the Right Group waited along the pipeline right-of-way for a few minutes to be sure the fire did not spot across the pipeline. At approximately 1450 hours, As the tractors crossed Chicago Avenue for the second time and went around the orange snow-fence that was up to access the fire east of the pipeline, Rome Fire Department Assistant Chief Winn Powers mentioned to Luebke that it looked like the building just west of the pipeline was no longer in danger and asked for an assignment. Luebke instructed Powers to contact the Fire Department Boss and inform him of the Power's status.

As the tractor-plows were getting ready to continue plowing east of the pipeline, Luebke got the attention of Friendship 3 by banging the water tank of the tractor-plow with the pulaski and hand signaled to him that he was to be the fourth tractor. Luebke wanted the least experienced operator, Nekoosa 2, between other tractor-plows. The group continued building line along the right flank of the fire. Luebke noticed that Taylor did not have a radio. Luebke instructed Taylor to stay next to on of the other LTEs that had a radio at all times. LTE Tessman was burning out the line behind that last tractor-plow. The area was a somewhat open oak and jack pine mix. As the group continued, several explosion types sounds could be heard out ahead of the group, perhaps one-quarter mile ahead of the group. Luebke took out his GPS (Garmin GPSMAP 76S) and turned it on. Once enough satellites were obtained I turned to the map feature and realized there was a dead-end road that went south off of Buttercup Avenue. I marked a waypoint. As the group continued to make progress the explosions continued. It was not until the group reached the very south end of a north-south sand road did Luebke realize that

the explosion noises he was hearing was being caused by propane tanks. Luebke noticed LTE Baker was not feeling comfortable with the loud noises of the propane tanks. There were several just ahead of the group at this point that were making noise. Luebke advised all right group personnel to find a large tree to get behind should any of the propane tanks become projectiles. After taking a better look at the situation the propane tanks were venting off through the pressure relief valves as they were designed to do. The flames that were burning from the propane tanks were approximately 20 to 30 feet tall. While the group was taking cover, H Division Supervisor Chris Klahn contacted Luebke on the radio and asked to meet up with him along the road the group was paralleling. He stated he could hear the tractor-plows and knew the group was close. Luebke retreated back down the line the right group had built to a point there were not any propane tanks nearby and made his way through the fences of a yard to make it to the roadway. In less than a minute Klahn, driving his Type 8x engine met Luebke on the road. Klahn mentioned to Luebke that the group was not too far behind the head of this fire. Klahn was just making it back down the dead-end road after the fire front had passed the intersection to the north. Luebke stated that the group was holding up because of all of the propane tanks venting in the area. Luebke asked Klahn how many propane tanks were in the area. Klahn did not know but offered Luebke a ride up the road to the intersection to see for himself and see what was ahead of the group in terms of fuel types. Luebke jumped in the passenger seat and Klahn turned around and drove north to the intersection. Luebke observed several propane tanks on the east side of the road venting as the truck traveled north. When the truck made it to the intersection Luebke and Klahn observed a small outbuilding behind a residence that was fully involved and was threatening the small shed next to the building that was burning. Klahn continued east on Buttercup Avenue to the intersection with 9th Avenue. Luebke noticed the older red pine plantation the fire was burning in on the north side of Buttercup Avenue. Klahn turned the truck around in the intersection and proceeded back west. As the truck approached the structure at the corner of Buttercup Avenue and 9th Court, Luebke photographed the structure with the burning outbuildings. Klahn turned into the driveway and around the west side of the residence. Looking at the amount of fire from the outbuilding, Klahn and Luebke agreed that the

water in the Type 8x engine was not enough to spend the time at this residence. Klahn backed out the same way he came in and turned back down 9th Court. As Klahn dropped off Luebke where he had picked him up, Friendship 3 contacted Luebke by radio and stated that he was getting a high oil temperature alarm going off. Luebke asked Klahn if his rider Michael Lehman could take a look at the Friendship 3 tractor. Klahn stated he would have Lehman meet with Friendship 3. Dells 1 Heavy Unit (Mark Johnson) called Luebke on the radio stating he was unloaded on Buttercup Avenue and wanted to know if he should plow against the grain to meet up with the group. Luebke advised Dells 1 that the group was again plowing and would make good time to Buttercup Avenue. The group would meet him at Buttercup Avenue. The group continued constructing line on the right flank, with Lehman working with Friendship tractor-plow to access the situation back where the group had stopped because of the propane tanks venting. The group entered an area that had slash on the ground from a clearcut. Line was constructed easily. The clearcut area adjoined an open area with at least one residence that was along Buttercup Avenue. As the group continued the line construction to Buttercup Avenue, Luebke tied in with Dells 1 in the yard area where he was constructing breaks around outbuildings. Luebke instructed Dells 1 to be the last tractor-plow in the group and keep an eye on things behind us.

At approximately 1559 hours the right line construction group crossed Buttercup Avenue and continued north into an older red pine plantation. Lehman detached himself from the line construction group and rejoined H Division Supervisor. As the tractor-plows started crossing Buttercup Avenue, Friendship 1 was the lead tractor, followed by Friendship 2, Friendship 3, Nekoosa 2, and Dells 1. Luebke asked Bunker to resume the burnout operations. Luebke instructed Tessman to hang back behind the group to ensure the burnout operation was holding. As the group began constructing line in the older red pine plantation, the lead tractor was constructing line a tree length or two from the fire edge, between two rows of red pine. The remaining tractor-plows were furrowing and improving a natural break that was likely an access road during thinning operations. The road was scattered with red pine and white pine seedlings. The width of the road was several rows wide, enough to have a distinct break in the canopy of the red pine plantation. As the

burnout operation continued behind the third or fourth tractor, Luebke noticed that as the burnout operation was pulled into the main fire, the fire was climbing higher and higher up the boles of the red pine. Tessman notified Luebke that things were heating up as the burnout operation and the main fire converged. Within seconds, the 100 to 150 yards of line that was constructed was compromised as the fire torched out the portion of the plantation behind the group, sending a shower of spot fires across the line. Luebke instructed all tractors and riders to move further east, circle around to the south and tie into the line that was holding approximately half way back to Buttercup Avenue. Once the intensity of the torching calmed down, the right group resumed building line. As the tractor-plows caught all of the spot fires, the direction of line building made a definitive turn to the northwest until it hit a road. As Luebke was walking the line behind the burn out operation, his radio flashed "LOBATT" while trying to transmit a message to Line. Luebke switched out the battery with another rechargeable battery from his radio chest pack. The same "LOBATT" message displayed with the "new" battery. Luebke asked Baker for his spare battery from his chest pack. It too displayed "LOBATT." Luebke asked Baker for his battery that was currently on his radio. He gave Luebke the battery, which worked, and asked what to do now that he essentially did not have a functioning radio. Luebke ordered him to stay next to Luebke, Bunker, or Tessman so that he was always with someone with a functional radio. As Baker and Luebke caught up to the tractor-plows, they came out of the red pine plantation and into the backyard of a residence on the east side of 9th Avenue. Luebke noticed several fire department apparatus set up in several of the yards in the general vicinity. The tractor-plows resumed line building two residences north of the place the group where the fire had jumped 9th Avenue. The line building and burnout operation turned back to the northeast and back into the older red pine plantation the group was in previously. In a short amount of time and without any issues, the right group continued out of the red pine plantation and into a pine/oak mix. After a brief period in the pine/oak mix the right group entered another 10 to 15 year old red pine plantation. As the first couple tractor-plows of the group entered the plantation, Rapids Air Attack cautioned the Right Group that the fire was heating up in the red pine plantation ahead of the tractor-plows. Luebke relayed to the lead tractors to make sure they heard the message.

Within a minute Rapids Air Attack advised the Right Group to hold up because the right flank was “an inferno in the pine plantation and pushing the right flank hard again.” Luebke confirmed the lead tractors heard the message from Rapids Air Attack. The lead tractor advised that he was holding up in a clearing just off the line in the pine plantation. Within a minute or two the entire group was together standing by in the clearing. It was approximately 1645 hours. Luebke made sure everyone took time to drink some fluids and for the riders especially to take a break. Several members of the group took pictures while waiting for the fire intensity to change and for the wind to shift back to the southwesterly direction. Backhaus, Johnson, and Luebke searched for a two track or logging road that could be used to possibly do some indirect line construction. When they thought they had found one that was slightly grown over with red pine, the wind seemed to push even harder on the right flank and crossed through the area the right group was going to work through. Luebke pulled out his GPS unit and marked another waypoint. Luebke noticed a stand of tall pine to the east approximately 1/8 mile away. Luebke asked Rapids Air Attack if the Right Group could plow directly east to the tall pine with the current fire behavior. Rapids Air Attack replied that the line would be somewhat indirect, but not knowing how much longer the current wind shift and fire behavior was going to continue, that was a safe plan. Just beyond the small stand of tall pine the fuel type changed back to a hardwood/pine mix. Luebke gathered everyone together and explained the tactic the group would be doing, basically an indirect attack. Luebke assigned Tessman to burn out the line behind the 2nd tractor-plow. The remaining tractor-plows would improve the line behind the burnout operation making sure there was an adequate canopy gap. Dells 1 tractor-plow would hang back behind the group to make sure the line was holding. Luebke and the other riders were following up behind the fourth tractor-plow, Nekoosa 2. As the line was constructed and burned out, an intense amount of heat was along the fire line. Having a tractor-plow between the line and the personnel walking made a huge difference. The heat was intense enough at times that both Nekoosa 2 and the third tractor-plow, Friendship 2 had to turn so that the plows, in the upright position, would block a large amount of the heat that was being given off by the torching red pine. Luebke took a few photographs of the fire intensity during this portion of the line construction. Within a few

minutes the entire group had made it to the tall white that was adjacent to the young red pine plantation. As the burnout operation and main fire converged near the tall white pine, the western most one or two rows of white pine torched. Because of the density and diameter of the white pine, Luebke instructed the tractor-plows to construct the line south along the white pine to where the white pine ends and the fuel type changes to hardwood. The group was basically going to continue an indirect attack until the group got around the dense, large diameter white pine stand. Bunker was instructed to burn out the line behind the third tractor-plow. Tessman and Dells 1 tractor-plow would stay behind to make sure the line was holding. As the group made its way into the hardwoods east of the white pine stand and turn back to the northeast, Tessman informed Luebke that the burnout operation was beginning to heat up in the tall white pine stand. Within a minute the fire intensity increased through the tall white pine stand and torched out the eastern side of the white pine stand sending a shower of spot fires into the hardwood litter. Nekoosa 2 and Dells 1 came up the line and furrowed around the spot fires that landed outside plow lines. Tessman followed behind Dells 1 and burned out the line. Luebke instructed the three Friendship tractor-plows to hold up until the spot fires that were across the line were contained. Luebke noticed the hardwood component seemed less abundant ahead of the tractors. It may have been an area where there was some blowdown that was never cleaned up. There was a significant white pine seedling component in the understory layer. The young pine was up to 5 or 6 feet tall. The young white pine component was readily torching, adding to the fire intensity. The group continued line construction with Dells 1 staying back to monitor the line after a short five minute break. Approximately 200 yards before making it to 8th Court Friendship 1 informed Luebke that he had broken a plow pin. Luebke relayed the information of a tractor down to Line and requested at least one more tractor-plow. When Luebke got to where the Friendship 1 tractor-plow was, he instructed Nekoosa 2 and Dells 1 to clear the area around the tractor of fuel. Luebke instructed Nekoosa 2 to stay and work with Friendship 1 to get the tractor-plow back in operation, if possible. By this time, the lead tractor, Friendship 2 had made it out to 8th Court. Luebke informed Line of the status of the line construction. Line asked to meet Luebke on 8th Court. Luebke advised the group to take a short break at approximately 1745 hours.

When Line arrived in the Friendship Type 7x engine, Barnier was in the vehicle with Malin. Luebke asked Line for any extra drinking water that was being carried on the engine. Barnier traded a couple of full canteens for empty ones. Luebke asked Line to trade out a clamshell with fresh batteries for a dead rechargeable Bendix-King battery. Luebke noticed a handful of air-photos on the dash of the truck and asked to see where he was and what was ahead of the group. Line asked Luebke if he wanted one or two tractors. Not knowing what other type of mechanical problems may arise, Luebke asked for two. Luebke asked Line if a Division D had been established yet. Line said that she had ordered resources to staff Divisions C and D, but nothing had been assigned yet. Luebke had Tessman and Bunker consolidate partial drip torches and trade out empty ones with the full ones on the Friendship Type 7x engine. While out on 8th Court the yellow CL-215 flew overhead as though it was making a pass to drop its water. No one actually saw the plane make a drop while out on 8th Court. Line asked Luebke how well the air resources were working on the right flank. Luebke replied that other than the retardant drop back at Chicago Avenue, Luebke had not seen any aerial support on the right flank for the purposes of building line. Fitpold and Bunker used wire cutters and small bolt cutters to make a few holes through the fence on the east side of 8th Court. As the group prepared to depart from 8th Court, Friendship 1 radioed to Luebke that he was up and running again. Luebke acknowledged and told him the group was just starting to begin plowing on the east side of 8th Court. The group constructed line through the 8 to 10 foot tall red pine plantation and came out on Browndeer Court. Luebke informed Line that the group had made it out to Browndeer Court and that the group was continuing north. North of Browndeer Court the group was constructing line in and oak dominated stand with scattered pine. Line construction was proceeding very well at this point. While in this fuel type, Rapids Air Attack informed Line, Right Group and Left Group that he was heading to refuel, but that Air Attack 4 should be contacted on DNR Red for any needs. Line informed Luebke that there should be additional water and food at the drop point at Browndeer Avenue and 8th Avenue. Two additional Heavy Units should also be there that would be assigned to the Right Group. Luebke acknowledged the information from Line. Tessman was instructed to stay behind the group to ensure the line was holding.

The Right Group had constructed line to Browndeer Avenue at approximately 1820 hours. As Luebke approached the intersection of Browndeer Avenue and 8th Avenue he observed a stack of fresh pizzas and a container of Pritzl's sandwiches. Next to the food were a couple of cases of water. Luebke informed the group by radio of the food and water and that we would take a five to ten minute break. As the tractor-plows were congregating at the northwest corner of the intersection of Browndeer Avenue and 8th Avenue, Wausau 1 and Pray 2 Heavy Units advised Luebke that they were assigned to the Right Group. Luebke advised them to turn east onto Browndeer Avenue and that they could unload their tractor-plows along the side of road, between 8th Avenue and the first driveway along Browndeer Avenue to the east. Tessman contacted Luebke by radio and informed him that he had made it out to Browndeer Avenue and that the line was holding behind the group. He advised Luebke that a surface fire and radiant heat from a woodpile near a propane tank and the residence were threatening the first residence west of where the group had come out Browndeer Avenue. He advised that if there was an engine available that they should get to the residence. Luebke noticed a Fire Department brush truck had just arrived at the drop point to get food and water. Luebke asked the driver if he could go to the first residence west of their location, pointing towards Tessman, and stop the fire from getting to the structure. The driver advised Luebke that the brush truck was out of water. Luebke ran to the intersection just as Pray 2 was turning onto Browndeer Avenue. Luebke stepped up on the stairs of the cab and instructed the operator, Joe Wyss, to pull up to where he was supposed to park. Luebke informed him that the two of them were going to detach the trailer and use the Type 4 engine to protect a structure just west of 8th Avenue. Wyss asked if he should unload the tractor-plow first. Luebke agreed that it would be a good idea to do that before detaching the trailer. After Wyss unloaded that tractor-plow and while he was parking it out of the way Luebke began the process for detaching the trailer. Luebke walked up the tilt-bed trailer to cause the trailer to become horizontal again. By the time that was accomplished and secured, Wyss was back to the truck and assisting Luebke detach the air supply, unplug the electrical connections, drop the jack, open the pintle hitch and raise the jack to clear the pintle hitch. Wyss and Luebke climbed into the cab of the engine and Wyss proceeded to drive west to the residence Tessman was concerned about. Luebke

observed a mobile home with a tan colored metal pole shed on the property. Between the two buildings were a propane tank and a woodpile approximately 20 feet long and 4 feet high that was fully engulfed in flames. The radiant heat was threatening the stability of propane tank. Luebke asked Wyss if he could safely maneuver the engine to a position to attack the fire and still maintain an escape route. Without answering Wyss drove the engine onto the property and parked near the structure. As he started the pump, Luebke contacted Nekoosa 2 by radio and requested his assistance immediately. Luebke instructed him to push the woodpile into the black, away from the propane tank and structures. Luebke assisted Wyss by pulling hose from the hose reel from the back of the engine. Wyss knocked down the fire considerably with the foam and water mixture by the time Nekoosa 2 was on site and ready to push the woodpile as instructed. Tessman contacted Luebke by radio and advised him that the fire had slopped over the furrows, just south of Browndeer Avenue. Luebke acknowledged the message and instructed Friendship 1 and 2 to contain the slopover and that Tessman would burn out the line if necessary. As Nekoosa 2 and Wyss were working on cooling the woodpile Luebke checked the status of the metal pole shed. The door was locked to the shed. Luebke glanced around the building and observed the surface fire had burned up to the building and had discolored some of the metal near the ground. Luebke considered making forced entry into the shed to determine if there was fire inside the shed, but decided against it because of time it would take. Luebke walked around the mobile home and realized that some type of suppression resources had been at this structure previously because the metal shell on the backside of the mobile home had been pulled away to extinguish and overhaul fire that had breached the outside of the mobile home. As Wyss retracted the hose back to the truck, Nekoosa 2 did some blade and plow work in and around the yard of the residence to prevent any surface fire from threatening the residence again. Luebke, after taking a couple of photographs, returned back towards the intersection of Browndeer Avenue and 8th Avenue. While walking back, Luebke observed that the slopover had been contained and Friendship 1 and 2 were back at the intersection getting food and water. Luebke met up with Tessman at the intersection and told him that it was prudent that he mentioned the threatened structure. As the Pray 2 engine was being parked and Nekoosa 2 was

making his way back to the intersection, Luebke informed the driver of the fire department brush truck that there were two Heavy Unit engines that were going to be parked along Browndeer Avenue, pointing towards Wausau 1 and Pray 2. Luebke advised him that if they needed water, they could fill from the Type 4 engines. Luebke grabbed and drank a full bottle of water. He also grabbed a Pritzl's sandwich took a few bites and asked Nekoosa 2 to store the rest of it in his lunch cooler that was on his tractor-plow.

As the lead tractor-plows started again Luebke explained to Pray 2 (Wyss) and Wausau 1 (Hunt) how the group was working. Luebke advised them that they would follow up behind Dells 1 and that Luebke wanted them to hang back behind the group and patrol the line to make sure it was holding. Hunt asked Luebke what his rider should do. Luebke instructed Hunt to have his rider take the drip torch from whichever rider was burning out the line. Luebke figured that the rider, Tyler Bormann, was fresh, compared to all the other riders that had walked all the way from the origin. Luebke introduced himself to Bormann. Luebke asked Bormann how long he had been a rider and what experience he had. Luebke instructed Bormann to burn out the line behind the fourth or fifth tractor-plow. Luebke advised that he would be able to communicate on DNR Red. Luebke noticed that a few of the riders were starting to show signs of fatigue. As Luebke entered the red pine plantation he turned his GPS unit on and turned to the map display. Luebke realized that approximately $\frac{1}{2}$ to $\frac{3}{4}$ mile ahead there was a creek. Not knowing what to expect, Luebke contacted Operations at approximately 1840 hours on White Alpha and informed him that the Right Group would be encountering a creek in approximately 30 minutes and that Heavy Units may need to be shuttled up to the group's location to facilitate crossing the creek. Operations acknowledged the message and that he would work on it. While constructing line in the red pine plantation, an east/west running powerline right-of-way was utilized as much as possible by constructing several furrows along the north half of the right-of-way. As the group proceeded northeasterly, the group left the red pine plantation and entered a fairly mature oak/hardwood stand. At approximately 1900 hours the right group stopped line construction at the bank of Dry Creek. Luebke met with Friendship 1 and asked for his opinion. Friendship 1 did not feel the tractors could walk across the creek. Luebke stated it would not be appropriate to push dirt

into the creek to allow the tractor-plows to walk across as one rider had suggested. Luebke attempted to contact Operations several times on White Alpha to find out the status of moving Heavy Units up to the Right Group's location, but no contact was ever established. Luebke pulled out his GPS unit again and turned to the map display. If the group did cross the creek, they were west of a fork in the creek, which meant that once they were across, they would not have to mitigate another creek in the near future. After zooming out on the map display, Luebke realized that the group was only approximately ½ mile east of 8th Avenue, the road they had crossed at Browndeer Avenue. Luebke got the attention of the group and explained that the group would follow the line back to the red pine plantation, head west along the north edge of the plantation to 8th Avenue, walk the tractors along 8th Avenue to the north side of the creek, navigate back through the black to the right flank of the fire near the creek, anchor to the creek and continue line construction. Luebke asked if there were any questions. Hearing none he had group turn around and proceed back down the line to the red pine plantation. At the plantation, Dells 1 asked Luebke if he wanted a ride. Luebke boarded the 450H and half-sat on the lap of the operator until they reached the yard of a residence. Luebke dismounted the tractor and contacted Operations on White Alpha to inform him that the structure at 1078 8th Avenue was lost. Operations acknowledged the message. The tractor-plows and riders walked the road right-of-way and on the road over the bridge on 8th Avenue to cross the creek. The group reassembled in the yard of the first residence north of the creek. Friendship 1 and 3 volunteered to go to the creek and anchor to it and bring the line up to where the group was staged. Luebke followed the tractor-plows down to the creek and used hand signals to get Friendship 1 as close to the creek as possible to create a solid anchor point. When Friendship 1 lowered its plow and moved forward to start the line construction, the furrow was created right up to the edge of the water. Luebke had Bormann burn out the line as much as he could with the wet ground in the vicinity of the creek. As the group lined up to continue building line, Luebke checked with Bormann to find out how he was doing. Once away from the residence line was being constructed in an oak/pine mix. Luebke heard radio traffic that indicated Rapids Air Attack was overhead once again. Luebke contacted Rapids Air Attack and asked him to make sure there were no spot fires or places

where the fire had jumped the creek to the west of the group's location. Rapids Air Attack flew overhead and informed Luebke that there was no other fire to the east of the group's location, but he was concerned about the fire just north of the creek. Luebke explained that the group had anchored to the creek. Luebke assigned Wausau 1 to go back to the creek and check the anchor point. Wausau 1 informed Luebke that some of the slash on the higher ground was heating up, but was well within the control lines. He stated he would hang back for a while until the fire died down. Rapids Air Attack informed Luebke that the group would be coming out to a large field that goes out to County Trunk Highway (CTH) C. When the group reached the cultivated field, they would need to turn hard right, travel across the field and put a line around a several acre spot fire that did not have any suppression forces assigned to it. Luebke acknowledged the message, but told Rapids Air Attack when he reached the field that he would likely call him again to size-up the spot fire again.

At approximately 1946 hours the Right Group tied in the tractor-plow line to the south end of the field that was south of CTH C. As Luebke approached the field he observed a Grand Rapids Fire Department Tanker, several Grand Rapids firefighters and a handful of civilians in street clothes attempting to suppress the fire with handtools and hoses. Luebke advised the firefighters and the civilians to stop what they were doing and to retreat to the field while the tractor-plows made their way through the area building fireline. Luebke recognized several of the Grand Rapids firefighters and told them that there would be a person burning out the line behind the tractor-plows and that they were to observe the burn out operation, make sure it did not jump the furrows, and not to extinguish the burn out operation. As Luebke reached the field he contacted Rapids Air Attack and asked him to size up the spot fire that was to the east of the group's location. Rapids Air Attack informed the group that it was five or more acres in size burning in hardwood/pine mix with occasional torching. Luebke decided the entire group would go over to the spot fire, contain it, and then come back to where they had left off. The fire was mostly burned out to the field the rest of the way to CTH C. Tessman caught up to Luebke on the hike across the field to the spot fire. He advised Luebke that one of the riders, John Baker, was not doing very well. His feet were very sore, likely blistered, and he looked as though he was in pain. Luebke checked in with Baker and

noticed him grimace as he hobbled across the cultivated field. When Luebke asked Baker how he was doing, he said he was "fine." He insisted that he could keep going. Luebke instructed Tessman to keep an eye on Baker. By the time Luebke and the riders reached the southeast corner of the field, Friendship 3 and Nekoosa 2 had cut through the fence that separated the field and the woods. There was a dry creek bed the tractor-plows maneuvered through and started plowing counterclockwise around the spot fire. Bormann was instructed to continue to burn out the line. At the north end of the spot fire there were a couple of fire department apparatus and firefighters from fire departments in southern Portage County and/or Waushara County. As the group tied in the furrows to the edge of the field, Luebke advised the group to cut across the field and cut off the spread of the fire in the wooded buffer between the two fields to the west of the group's location. Luebke and the riders made their way across the field and Bormann continued to burn out the line. When Luebke got to the west end of the wooded buffer, he instructed Bormann to continue to burn out the wooded buffer back to the south to the south end of the field. Bormann was to burn out the entire wooded buffer, using the cultivated field to the west as a natural barrier. Luebke instructed the group to take a break on the north side of CTH C. The group reached CTH C at approximately 2029 hours. As Luebke approached CTH C, he met up with Black River Falls Ranger Eric Zenz. He told Luebke that his assignment was Division F Supervisor. He had Forester Chris Schmitz with him. Luebke met up with the rest of the Right Group on the north side of CTH C. LTE Rider Wally Buss showed up with food and drink for the group. Line also met up with the Right Group on CTH C in the Friendship Type 7x engine. Luebke relayed his concern for LTE Baker to Line. She agreed with Luebke that for his safety, he should be taken off the line. Line told Baker that he would not be continuing because of his condition. Luebke explained to Baker that it was not necessary for him to suffer another three or more mile hike before the evening was over. Baker stated that he understood and that he figured he did not have adequate time to break in his new boots prior to the day's fire. Luebke told him he would arrange transportation for him back to the ICP. He should check in with Operations and see if there is something he could help with that would not require foot travel. Because dusk was near, Luebke advised any riders that had the green flashing safety lights to attach them to their

radio chest pack if not already attached. Luebke checked the status of headlamps for riders as well. Luebke borrowed a headlamp from Line and one from Forester Schmitz to outfit the remaining riders with headlamps. Luebke instructed Tessman and Bunker to again consolidate partial drip torches and trade them out with full ones from the tractor-plows. Luebke assessed the remaining riders as to their level of fatigue and ability to continue with the Line Construction Group. Line stated that a fuel truck was headed to the group's location to fuel up the tractor-plows. Luebke discussed with Line what was ahead of the group for fuel types. Line stated that division H had the forward spread of the fire stopped just north of Beaver Avenue. Luebke requested a supply of AA batteries for headlamps. Line made the request back to the ICP. Fisheries Technician Dale Kufalk stopped and dropped off more water for personnel. Luebke asked Kufalk to take LTE Baker back to the Incident Command Post. Kufalk agreed to take him back. The group was becoming impatient waiting for the fuel truck. Luebke asked if anyone was low on fuel. Luebke remembered that on a full tank, the tractor-plows should be able to run for 20 hours or more. Because no one spoke up, Luebke told the group to prepare to depart shortly. Luebke contacted Rapids Air Attack and asked for his perspective on how to proceed. He instructed the group to carry the line construction north towards a residence north of CTH C and once past the structure, the group would be able to cut across cultivated fields to continue line construction in an older red pine plantation.

As the group cut across the cultivated field, they crossed a dry drainage ditch. As the group was crossing, a male civilian drove up on an ATV. Luebke asked him to stop. He shouted to Luebke over the noise of the passing tractor-plows that the tractors and foot traffic was destroying his freshly planted field. Luebke explained to the apparent landowner that the tractor-plows and personnel were just trying to stop the fire. The civilian asked who was going to pay for his crop damage. Luebke responded that he did not know.

At approximately 2120 hours the right group started constructing line in an older red pine plantation north of CTH C. Adams County Sheriff's Deputies Rod Stormoen and Shaun Long driving ATVs met up with Luebke just before he walked into the red pine plantation. Stormoen handed Luebke several four-packs of AA batteries. Luebke put two in his line gear. Luebke gave Nekoosa 2 and Friendship 3 the remaining

packs of batteries to store in case someone needed batteries for a flashlight or headlamp. Luebke instructed Wausau 1 and Tessman to stay behind the group to make sure the line was holding. Luebke asked Bormann if he was ready to continue burning out the line. He responded that he could for a while but would likely need a break after a while. Luebke noticed that since leaving CTH C that the fire intensity was much less than just prior to getting to the field south of CTH C. The weather conditions appeared to have drastically changed since dusk. The fire was basically a backing fire. The burn out operation continued as the line was constructed. Because the fire intensity and fire behavior was dramatically less than when it was light out, Luebke did not push the persons running the drip torches. The line was being burned out, but not necessarily behind the second or third tractor. Bormann was burning out the line behind Pray 2, the second to last tractor-plow. Occasionally Luebke or Tessman would light a second drip torch and burn out a portion of the line behind Nekoosa 2 or Friendship 3 to give Bormann a break from burning out the line. The group constructed line through the first older red pine plantation, into a small hardwood stand and back into another larger red pine plantation. When the group made it through the second plantation, they continued to build line in a hardwood stand until the group reached 7th Avenue at approximately 2135 hours. When Luebke made it out to 7th Avenue, he met up with Port Edwards Fire Department Assistant Chief Lee Fletcher. Fletcher and a handful of Port Edwards firefighters were working with a Rudolph Fire Department engine. Luebke contacted Line to request Law Enforcement to come out to 7th Avenue because there were a number of civilians that were hanging around the fire apparatus. Line acknowledged the request. The group walked along the road right-of-way north to the intersection of 7th Avenue and Bighorn Avenue. As the group got lined up to continue constructing line north of Bighorn Avenue and east of 7th Avenue, a group of firefighters from Port Edwards, Nekoosa, and Rudolph walked out of the woods carrying handtools and bladder bags. Luebke acknowledged the firefighters as he and the tractor-plows continued line construction operations. Not very far from the intersection of 7th Avenue and Bighorn Avenue, Friendship 3 informed Luebke that he could not locate the line because of the lack of flames. Luebke instructed Tessman to get out ahead of Friendship 3 and walk the very edge of the fire

perimeter. He was to stay 75 to 100 feet of the tractor-plow. Tessman was the best choice for the assignment because on the back of his line gear there was a horizontal reflective strip that stood out for the lead tractor to follow. The group continued to build line through the stand of pine, into a hardwood stand, and back into an older red pine plantation. There were several times that Tessman needed to be out ahead of the lead tractor-plow to locate the line for the group. When Tessman was out ahead of the lead tractor-plow, there was no need to burn out the line. When there was active flame Tessman would fall back behind the third or fourth tractor-plow. The burn out operation would then be reinitiated. This line construction method continued until the group came to a creek at approximately 2308 hours. Luebke contacted Rapids Air Attack and asked if he could assist the group finding a way to get around the creek. Rapids Air Attack flew overhead for several minutes. He could see the strobes on top of the tractor-plows to locate the group, but could not see the creek that had stopped the forward progress of the group. The night sky was clear, but there was no moonlight to reflect off of the water that may have helped Rapids Air Attack distinguish land from bodies of water. Luebke pulled out his GPS unit and while waiting to acquire satellites, Tessman had started walking east to find a way to cross and ended up coming out to a north-south road that crossed over the creek. Because there was no active flame on the north side of the creek, Luebke marked a waypoint where the line construction had stopped south of the creek so that when on the north side of the creek he knew approximately where he should expect to pick up the edge of the fire perimeter again. The group made its way out to 6th Avenue, turned north to cross the creek, and turned back to the east to resume line construction at the fire perimeter. Luebke was ahead of the lead tractor-plow, Friendship 2, to help locate the line. At approximately 2320 hours Operations contacted Luebke on White Alpha and asked if he had any further need for Rapids Air Attack. Luebke replied that he did not. Luebke and Friendship 2 located the line and began the line construction again north of the creek. After a short distance the group ended up in the yard of a residence. There were several fire department apparatus and a handful of firefighters parked in the large opening near the residence. The residence was a two-story building with several white pillars on the front of the house. The tractor-plows and riders followed the driveway out to Beaver Avenue. At

approximately 2330 hours, Luebke contacted Line by radio and informed her that the Right group had made it out to Beaver Avenue, the final destination for the line construction groups. Line informed Luebke that food, water, and fuel should be arriving to the group's location shortly. Air Engineer Joe Ancel arrived with the food and water a few minutes later. Luebke met up with H Division on Beaver Avenue and confirmed that the line continued north of Beaver Avenue to completely contain the fire. Klahn stated that it was and that he had finished working with a couple of crews from the Fish & Wildlife Service to complete the burn out operation. While the personnel from the Right Group were eating and drinking the fuel truck eventually showed up and each tractor-plow was refueled. At approximately 2355 hours all tractor-plows were fueled. Luebke contacted Operations on White Alpha to find out what plans were in place to shuttle people back to move the Heavy Units up to Beaver Avenue. Barnier informed Luebke that he was headed to the group's location to start shuttling personnel back to get the Heavy Units. Luebke contacted Sandhill Forester on Green Bravo and informed him that his rider was looking for transportation back home. He replied that he was heading for the group's location to pick him up. Before everyone started packing up and departing Luebke had Klahn take a couple of pictures of the personnel that comprised the Right Group, minus John Baker. Luebke instructed all personnel to return to the ICP to checkout and demobilize from the fire. Eventually all Heavy Units were loaded and headed to the ICP. Klahn gave Luebke and Tessman a ride back to the origin to pick up the Nekoosa Type 7x engine. Because the Necedah Type 7x engine was still back at the origin Luebke contacted Bartholomew and informed him that Tessman would drive it to his location on Beaver Avenue. After dropping off the Necedah Type 7x engine at Bartholomew's location Luebke and Tessman drove to the ICP to checkout. When Luebke arrived at the ICP he brought in his GPS unit and worked with Westegaard to enter the waypoints manually into the ArcView project for the Cottonville Fire. The waypoints gave him an idea of how close the estimated fire edge was to the points Luebke had marked along the way on the right flank of the fire. After that was complete, Luebke and Tessman checked out with Operations and were released from the fire. Luebke and Tessman returned to the Wisconsin Rapids Service Center at approximately 0230 hours on May 6, 2005.

Rebecca Mouw - WI DNR Babcock Ranger

Assignments: Wildfire Branch Director/Division D Supervisor

MAY 5, 2005

13:34 Cottonville Fire. Slide back to the east-side of WI River.

14:40 I/S with Rider to Cottonville Fire from old Nekoosa Ranger Station.

14:57 O/S ICP- Big Flats.

- ✓ I was recruited to fill-in in Ops, assisting Schwingel, as Wildfire Branch Director until Brad Kildow arrived and assumed his position.
- ✓ I made hand drawn maps as the computer-produced maps were not up and running yet, initiated the Ops radio log, and communicated Ops radio traffic.
- ✓ I was given my next assignment and resources while assisting in Ops. I was to be Delta Division Supervisor with the Refuge Heavy Dozer, Wautoma 2 and extra DNR rider as resources.
- ✓ 16:14
Brad Kildow arrived and I transitioned with him while Schwingel went to a meeting. When Schwingel came back from his meeting- I was relieved and assumed my Delta Division Supervisor position.
- ✓ I rounded up my resources at the ICP and gave them a briefing: maps, location, assignment (establish driveable break along the right flank from Buttercup Avenue to CTH C), and we would caravan to our starting point via Highway 13 over Big Roche A Cri Creek > Cottonville Ave. > 8th Drive > Buttercup and our starting point to accommodate the Refuge's heavy load (70,000 lb.)

Buttercup Ave. and our starting point of Division D-

When we arrived on scene I instructed the dozers to unload to begin line construction. Moments later, Air Attack alerted Babcock 4x4 that there was a sloop over north of Buttercup Avenue about 50 yards. One DNR Rider took a pack can and the other DNR rider and myself deployed a hose lay off the 4x4 and suppressed the sloopover. Then Wautoma 2 came up and furrowed the sloopover.

Division D personnel then regrouped for a briefing on tactics. It was determined that myself, the Babcock Ranger would lead and flag the best route, followed by the Refuge Dozer building driveable break, followed by Wautoma 2 to clean up the line, followed by the Babcock 4x4 manned with the 2 DNR riders to patrol and hit hot spots. Safety issues addressed were the hazards of working around heavy equipment and to make sure spacing was maintained, communication, the black is the safety zone and later the burning snags that were falling.

About an hour before dark- Wautoma 2 notified me that the Refuge Dozer did not have forward lights and I would need to find a replacement dozer for dark, this was relayed to Line.

Dark- The dozers hit Browndeer Avenue and I had flagged line up to Dry Creek and met them on Browndeer and 8th Avenue. The Refuge Dozer ceased operations and the Babcock 4x4 had finally secured food and water from the ICP. They had gone to two different drop points earlier and there was no food to be seen (food had been requested from D division sup to Line around 7pm and was instructed it would be at the drop points). Division D took a food and water break on Browndeer Avenue and 8th Avenue, the Refuge Dozer was released, then shuttled to his truck to demob, a new Heavy Dozer would be assigned when available and Division D continued the best they could.

Wood County Dozer was reassigned from C Division to D Division. We waited approximately a ½ hour for the Wood County Dozer to arrive. It did not, so the Babcock 4x4 went out looking for him. He did not have a radio and did not know where to go and so had been sitting on the side of the road waiting. When he joined the group, I gave him a portable radio. He told me he would not be able to hear it while operating. I instructed him that I understood that, but he should take the radio and use it if he needed to contact us for help or with problems. The Wood County Dozer hooked up with Wautoma 2, the Babcock 4x4 went back to check the line, myself (Division D Sup) went up the road to find the best route. The right group had not gone through Dry Creek, but instead crossed the creek on the bridge on the road and so I needed to find out how they tied into the creek.

I found the furrow that tied the creek into the road- it was just a little piece and then moved north to see where the line went from there. I followed their line until I came out to a large

field. The field had not been burned. I walked north along the west edge of the field until I noticed a red glow off to the northwest. I went to investigate it and noticed it was burned south of there as I saw another red glow. The southern edge of the burn bordered a creek. I had difficulty determining how this fit with the other creek. My visibility was limited as I only had a headlamp with me and it was totally dark. I hiked out to County Highway C to meet up with the 4x4 to rendezvous with the division to brief them on my findings about the line. The dozers at this point had finished the line south of Dry Creek and were waiting for further instructions.

I sent the dozers in along the line going up to the field. At this point, I was instructed to meet at County Highway C and 8th Ave. to transition with the night shift. Steve Runstrum relieved me. I briefed Runstrum and his resources. I showed Runstrum my path I had taken on my GPS, told him of the snag hazards, realized on his map that there are two creeks, which helped clarify what turned out to be the 8 acre spot fire.

I returned to my division resources. I released them and instructed them to demob through the ICP. I shuttled the dozer operators back to their trucks. I then went to the ICP with my rider to demob. I gave Situation Unit some of my waypoints of the fire perimeter on my division. They did not have a GPS cable to download my whole route. I then returned to my station.

Mark Chryst

MAY 5, 2005, THURSDAY

I arrived on scene at 14:00 and met with the IC (Malin) at the origin. I was immediately given the assignment of B Division Supervisor. My division was originally designated as running from the origin to Chicago Avenue. I was informed that I had no equipment at that time but that it would be assigned to me as it became available. I proceeded down the plow furrow and caught up to the Right Group about 200 yards from the origin. I stayed close behind the right group, periodically backtracking to check the line behind us, until we reached Chicago Ave. Approximately 100 yards south of Chicago Ave. a breakout occurred behind the Right Group in an area of dense, 15 to 20 foot tall red pine plantation. The fire immediately torched within the breakout area, with flame heights of 20 to 30+ feet. All Right Group resources were located to the north of Chicago Ave. at this time. I

informed the Right Group Supervisor of the situation and he informed me that they would be proceeding back to my location to work on the breakout. I then made contact with Air Attack and requested that a SEAT drop be made on the breakout. SEAT 475 was holding over the fire and made a drop on the breakout within about 1-2 minutes of my request. The retardant drop was well placed but was not effective in suppressing the breakout. The drop did reduce the fire intensity within the breakout area enough to allow Friendship 3 to begin plowing; however, the fire intensity within the breakout area soon picked up again with frequent torching. The initial attempt by Friendship 3 to contain the breakout by plowing from the original line to Chicago Ave. failed as torching along the line carried the fire over the furrow. All resources of the Right Group soon arrived at the breakout location. The Right Group supervisor directed his units to plow east to the gas pipeline right-of-way. Despite intense fire activity, this section of fireline held.

Approximately 45 minutes into the fire, I was informed that the Adams County heavy dozer (a D5) was assigned to me and was located at the origin. I proceeded back to the origin, met with the operator, and instructed him to construct driveable break from the origin to Chicago Ave. The Adams County heavy dozer operator did an outstanding job of building driveable break. With no additional guidance he proceeded to build excellent break at an impressive pace. The operator had a radio that functioned very well and communications between us were good. For approximately the next hour, the heavy dozer and myself were the only personnel on B Division. I proceeded by foot back up the line to Chicago Ave. and was then contacted by OPS to inform me that B division had been extended about 1 mile to Buttercup Ave. I proceeded by foot to Buttercup Ave. and found the line to be in good shape. I then proceeded approximately ½ mile north of Buttercup Ave. to inspect the line as the D division had not yet been established. This section of line was also found to be in good shape and holding.

Approximately 2 hours into the fire I received additional resources. Poynette 1, a 5 person point crew and a Fish and Wildlife Service brush truck with 2 people were assigned to work with me. All personnel were directed to patrol the firebreak, improve the line where needed and mop up only those smokes located very close to the line. The entire break on the B division was driveable and

in good condition approximately 2 hours after the start of the suppression effort. We continued to patrol and improve the line until about midnight at which time we were replaced by the night crew.

In general, everything went very well on B Division. My primary concern was the lack of resources available to patrol line and deal with breakouts. The heavy dozer and myself were the only resources working on the right flank, behind the right group, for about the first 2 hours. The "right group" had proceeded about 2.5 to 3 miles before additional "division" resources began to arrive. Attempting to patrol this much line, alone and on foot was difficult. Air Attack provided critical assistance in checking the line. Considering the consequences of having a breakout occur a mile or more behind the "group", I believe that every effort must be made to assign personnel to the divisions as quickly as possible. Point Crews would serve this purpose very well. An ATV or 2 equipped with water would also be ideal.

Radio communications were generally excellent. There was some confusion at times due to the use of the radio identifiers B Division, D Division, etc. rather than Bravo Division and Delta Division. At one point OPS contacted me and informed me that they had received a report of a breakout on B Division. Air Attack and myself spent time looking for a breakout which did not exist. A small breakout had occurred on D division (not B) which had been quickly taken care of. I believe that unclear radio traffic was the cause of this misunderstanding.

MAY 6, FRIDAY

Arrived at the ICP at 9:00. I received the assignment of "Road Group" supervisor with instructions to ensure that all public roads within the burn area were made safe prior to the landowners being allowed into the area. This was to be accomplished quickly as limited public access was to be allowed starting somewhere around noon. Medford 1 was assigned to work with me. Priority was given to removal of trees which had fallen over the roads or appeared to be in danger of doing so. This work was completed around noon. Medford 1 was re-assigned to work on a division at that time. I continued (along with my rider Rick Greene) to patrol roads removing additional hazard trees. Also spent considerable time inspecting the area around unburned structures and extinguishing burning materials that continued to pose a threat to those structures.

MAY 7 AND 8 , SATURDAY - SUNDAY

Assigned B Division Supervisor with the assistance of Tomah 1 on Saturday and Cornell 1 on Sunday. Each day we patrolled the line and the entire area south of Buttercup Road. Found only a handful of smokes each day. Along with personnel on A division we performed a near 100% mop-up of the entire area south of Buttercup Ave by the end of the 4th day.

Chris Klahn **"H" Division Supervisor**

MAY 5, 2005

At 1:45 p.m. Mike Lehman and I were at the Necedah Ranger Station. We heard a FD page in Adams County for a grass fire involving a trailer. We watched Rapid Patrol take off for the fire and watched the SEAT begin to load. We then left for the fire. The location of the fire was given as Cottonville Ave. and 10th. While enroute, Friendship Ranger ordered additional suppression resources including four additional rangers. The Friendship Team Leader ordered the Rapids Incident Management Team and named the Incident Command Post at Big Flats Fire Station.

At 2:00 p.m. we arrived on Chicago Ave. as the head of the fire approached from the south. I radioed the Incident Commander, Friendship Ranger Jodi Malin for an assignment. The IC assigned me the "H" Division Supervisor. The "H" Division Supervisor is responsible to float with the moving head of the fire and exploit opportunities to narrow or stop the forward spread of the fire. Those opportunities are usually changes in fuel types, changes in fire behavior or natural or man-made fire breaks. I crossed the head of the fire that was burning in densely planted red pine, 15–20 feet tall. The fire was burning very intensely as a surface dependent crown fire.

At 2:15 p.m. we stopped on Chicago Ave. at the pipeline and met with the Operations Section Chief, Friendship Team Leader John Schwingel. OPS gave me a short briefing on my assignment. I asked if he knew of any opportunities that I might utilize to stop the fire. OPS said, "No, you've got 10 miles of pine". I went and triaged a structure north of Chicago Ave. adjacent to the pipeline. Only one FD unit was available, a 3000 gallon tender with no pump from Big Flats FD. With no time and little water we did not attempt any structural protection action. The fire crossed

Chicago Ave. to the west of the pipeline and soon jumped back into the crowns of the mature 40-foot tall jack pine. The fire swept past the structure in the crowns and spotted across the pipeline. The fire almost immediately again became a crown fire and we left to scout north of the fire.

At 2:30 p.m. we began evacuation on Buttercup Ave. from 9th Drive working west. We stopped at each house to ensure the residents were not present or if they were present we demanded that they leave immediately. We proceeded south on a private road, 9th Court, stopping at each residence. At the second to last residence, there were 7 people trying to put out spot fires in the yard and around their outbuildings. We told them to leave while they still had a chance.

Five individuals eventually agreed and got into vehicles. One woman and one child refused and began spraying water from hoses on to the lawn around the house. I asked Lehman to turn around my truck as the fire was pressing down on to us and I wanted to ensure that we were not overrun or trapped by the fire. The head of the fire was crowning into the yard and both finally agreed to leave.

At 2:45 p.m. we left 9th Court and continued evacuation west down Buttercup Ave. There were many sightseers driving the road that we demanded they turn around and leave the area. Some were less than gracious to our advice. We continued to meet resistance to evacuate from some residents. We finally located a Sheriffs Deputy on Buttercup at the pipeline crossing. I gave him the fire number of a residence that the occupants had refused to leave. He went to the residence and they moved. I advised the deputy that this evacuation was a "life or death" evacuation situation. He said he understood and would pass the word along to the other officers conducting evacuations.

At 3:15 p.m. we watched as the fire crossed Buttercup Ave. east of the pipeline. The Fire Department Boss, Big Flats Fire Chief and WI Rapids Team Leader, Steve Coffin arrived on scene. I talked briefly with them on the extent of the structural threat along Buttercup and down 9th Court.

At 3:30 p.m. we went back down 9th Court to check on the structures the fire had passed through. We heard DNR tractor plows in the woods just east of the end of 9th Court. We made contact with the Right Line Construction Group Supervisor, Brian Luebke. Friendship 3 tractor

plow was overheating so Lehman went to troubleshoot the problem on the line. I was assisting in the burn out operation following the tractor plows when a loud roar erupted from the location near the tractor plows. I initially thought that 2 tractor plows ran into each other. The roaring stopped for a few seconds then erupted again. I realized that it was a propane tank jetting off excess pressure. I scouted up a small driveway and saw a 500-gallon propane tank jet gas that immediately ignited from the emergency pressure relief valve on top of the tank. The flames shot 50 feet into the air as the gas burned off with a loud roar. I advised the Right Group Supervisor of the situation and advised the tractor plows to swing wide to the right of the area to avoid the safety issue of the tank over pressuring and exploding (boiling liquid expanding vapor explosion). The Right Group Supervisor asked if he could accompany me to scout the rest of the structures for other potential problem propane tanks. We did scout all of the structures east of 9th Court up to Buttercup and over to 9th Drive. I dropped off the Right Group Supervisor to rejoin the tractor plows, Lehman continued operating with the Right Group.

At 3: 40 p.m. I asked Rapids Patrol for an update on the fire. Patrol indicated that there were several large farm fields south of CTH C and east of 8th Ave that may narrow the head of the fire to the north.

At 3:45 p.m. I asked a FD unit to ensure evacuations were completed on 9th Drive north of Buttercup and proceeded to Browndeer Ave. The Sheriffs Deputies had roadblocks in place and I assisted with the evacuation of residences on Browndeer Ave. I explored several woods trails south of Browndeer and west of 9th Ave to determine the width of the head and fire behavior. The head fire continued to be a surface dependent crown fire with lots of intensity. I generally could hear the roar of the fire before I could see the head fire approach. Spotting was generally short range that I could see, 50 – 250 feet in front of the head fire but very numerous and continuous.

At 4:00 p.m. Lehman rejoined me and we proceeded north to CTH C and 8th Ave. We located the farm fields indicated earlier by Patrol. The fields were large (40+ acres) with mostly green alfalfa in them. If the Right Group could tie into them the fields had the potential to narrow the right side of the head. We completed the evacuation of several residents on CTH C.

Met with Line Boss, Jodi Malin and Jim Barnier on CTH C. They informed me that a CL215 was ordered from Minnesota (maybe two CL215s) and was due on scene in 30 minutes. We discussed at length the use of that resource to best utilize its capabilities. We reached a consensus that we would use the CL215 with retardant south of CTH C or use it with foam north of CTH C. As the head approached CTH C a SEAT (Airtractor 802) stationed a Black River Falls made a retardant drop on part of the head.

At 4:30 p.m. The fire spotted over CTH C. I watched a single spot ignited under some jack pine north of the road, immediately torch out and ignite a wooded shed. In the period of a minute, large numbers of spots had ignited across CTH C, combined and become a surface dependent crown fire again. We drove through the head and noticed several buildings burning both south and north of CTH C. Briefly met with Fire Department Boss and Rapids Team Leader and discussed use of air resources and the progress of the structural protection efforts. Recrossed the head and proceeded north on 8th Ave. The residents east of intersection were reluctant to leave, we informed the deputy at the intersection who assured us it would be taken care of.

At 4:45 p.m. OPS informs me that the CL215 has arrived. Line was assigned air resources for deployment. Line and I have a conversation that the air resources should drop along the flanks in front of the Line Construction Groups to assist in line construction to speed up production. Line informs OPS of that intention. OPS assigns CL215 to right flank and SEATs to left group. I mention to OPS that the major structural involvement was on the left flank and that the CL215 might be better utilized there. OPS agrees, CL215 left flank and SEATs right flank.

As I drive up 8th Ave I noticed the CL215 dropping up by the head. I radio OPS and inform him that the CL215 is dropping on the head of the fire that is a mile wide. OPS states he will fix it.

At 5:00 p.m. the head of the fire spots across 8th Ave into paper company red pine plantation, 12 – 18 foot tall and torches out immediately. The fire makes a major run in this plantation, over 1/2 mile in 8 minutes up to Bighorn Ave.

At 5:09 p.m. the fire spots over Bighorn Ave. The head of the fire enters a large red pine plantation (55 feet tall) and crowns with 100-foot flames. (Fire Monster Photo taken) SEAT (Airtractor 802)

drops retardant on the truck inhibiting visibility to drive. We proceed to the intersection of Bighorn and 7th Ave. and wash of the retardant.

At 5:25 p.m. the fire spots over 7th Ave. We attempt to pass through the head to assess structure involvement along 7th Ave but it is too smoky and hot. We retreat and drive over to 6th Ave and begin to evacuate residents north of Bighorn Ave.

At 5:45 p.m. the fire is burning in paper company young red pine plantation again south of Beaver Ave. Sheriffs' Deputies had completed the evacuation of Beaver Ave. We continue ½ mile north to Badger Drive. Deputies had completed the evacuation of Badger Drive west of 6th Ave and inform me that a FD is way down on the west dead end of Badger Drive wetting down structures. I asked the deputy to continue the evacuation to the north. At that time, the Pittsville FD units came out to 6th Ave. I informed them that the fire is ½ mile south and that I didn't want them back in on the dead end any longer. I told them that the structures east of 6th Ave on Badger were the next priority. The FD units headed east down Badger Drive.

At 6:00 p.m. went back down to Beaver Ave. Head of the fire approaching Beaver in paper company 10 – 15 foot tall red pine, crowning the whole way. On the way back east we met a truck with a squad chasing. The truck went past us heading west and we stopped the Deputy. The Deputy told us the truck had run the roadblock. I told him we would chase down the truck and make sure they weren't in danger. We turned around and followed the truck to a cabin. They were apparently turkey hunters (in camouflage) and were retrieving a black lab from the cabin. I turned around in the road and was yelling at them to hurry up. The head of the fire was 150 feet south of our location on Beaver Ave. Just after the dog was loaded, a SEAT (Airtractor 802) made a retardant drop between my truck and the head of the fire. This time the truck only got a light coat of retardant. Both trucks safely exited the fire area heading east without further incidents.

At 6:10 p.m. we watch the fire jump Beaver Ave. We drove back through the head and saw numerous spot fires burning north of Beaver Ave. At the intersection of Beaver and 7th Ave. a distraught resident was talking to the Deputies manning the roadblock. This resident was very concerned about her bird that was left in a home north of Beaver Ave. She begged us to save this \$1000 Macaw bird that she had had for ten years. I relented and she told us her fire number and that the bird was in a cage on the porch. I

made a plan with Lehman that I would drive in, drop him off to grab the bird while I turned around and we would high tail it out of there. Everything went as planned except Lehman couldn't carry the birdcage. It was 6 feet x 4 feet x 4 feet made of heavy gauge metal. So I jumped out and we both wrestled the cage on top of my truck. We returned to the roadblock with the slightly disheveled Macaw to a grateful owner.

At 6:20 p.m. On the way back through the head we noticed that the fire was lying down. The fire was staying on the ground and burning in hardwood and under mature jack pine. For the first time all day I realized that this may be an opportunity to take direct suppression activity on "H" Division. I left the truck and walked into the woods north and Beaver and again confirmed that the fire was a surface fire with 3 – 4 foot flames. I also realize that that surface fire will threaten the numerous structures north of Beaver. I contact the Fire Department Boss on FIRECOM radio frequency to request permission to utilize the Pittsville Fire Department Units to provide that protection immediately. After a short discussion and some hesitation, I received permission to deploy the Pittsville FD on Beaver Ave.

At 6:30 p.m. I located the Pittsville FD on Badger Drive and told them that they had been assigned to provide structural protection "in the black" to structures north of Beaver Ave. They rolled up the hose that they had deployed and followed me to Beaver Ave. After a short briefing with all of the firefighters, the officer in charge began triaging structures. The OIC used the "gator" to scout and triage as needed. The FD resources assigned were one engine, one tender with pump, one brush truck and the "gator". At the west end of Beaver Ave. I met a Rudolph FD engine. I brief the firefighters and asked them to work east toward the Pittsville FD Units securing structures as they went. They accepted the assignment and I went back east on Beaver Ave.

At 6:40 p.m. after scouting the head again from the backside, I asked Lehman to order two tractor plows from ICP to begin suppression on the head. I crossed through the flaming front to scout ahead of the fire for possible avenues of access and fireline placement. The head of the fire was a single line of surface fire burning in oak (lots of wilt pockets) and mature white pine with lots of small regeneration under it. The fire behavior was intense surface fire with jackpots of down oak wilt and torching in white pine regeneration. I began flagging in a line to use as a guide for line construction.

At 6:45 p.m. OPS called me on my cell phone to get an update, I had neglected to put my portable radio to scan white bravo radio frequency. He informed me that he had received my order for two tractor plows but had none, but offered me two private dozers (D – 5 size). I accepted the two dozers and asked that they report to Beaver Ave. and 6th Ave where Lehman would meet them. I also asked OPS for the CL 215 to cool the head and buy me some time to construct the control line. I was concerned that with private dozers, the progress would be slower than with tractor plows and I did not want to be pressured by the fire while constructing line with inexperienced operators. OPS granted me permission for the use of the CL 215 and asked me to contact DNR Air Attack directly with my air support needs. I radioed for Air Attack on DNR red frequency and was told to go direct with “Air Attack Four” about my assignment for the CL 215. I tried several times before Air Attack Four answered. I told Air Attack Four that I wanted a drop from the CL 215 across the apex of the head. He acknowledged the assignment and I never heard from him again.

At 7:10 p.m. the two dozers arrived and Lehman had them unload where my flag line came out to 6th Ave on an ATV trail. The dozers walked in to a fork in the ATV trail. I briefed Lehman and the Komatsu dozer operator where I wanted the line (driveable) along an ATV trail for the most part and that they would anchor the line into a yard behind a house. I sent the Komatsu dozer (unknown Construction Company) with Lehman working to the south. I briefed the Adams County D – 5 dozer operator that I would lead him north constructing a driveable firebreak as we went. The fire had passed my initial flag line so we went cross- country for a while until we hit another ATV/property line that traversed a ridge above a creek. I had walked that trail earlier in my scouting. We rapidly built line along that trail.

At 7:30 p.m. I noticed increased air activity over “H” Division. Different planes going in different directions. I reminded Lehman of the hazards associated with the large drop from a CL 215 and suggested that he seek a canopy, meaning consider utilizing the Komatsu dozer rollover protection for cover. I continue to lead the Adams County dozer constructing fireline. I also remind the operator of the possibility of an airdrop on our location. I notify OPS that the white pine regeneration is heating up and that I still had not gotten any air support. I tried again to radio Air Attack Four with no response.

At 7:45 p.m. Lehman radios me that he was just dropped on by the CL 215 and was soaked to the skin. We had received no warning or any radio contact before the drop.

At 8:00 p.m. the northwest line is anchored in by the Adams County dozer into a small feeder creek. I crossed the creek and scouted the remainder of the line back to Beaver Ave. on the west side of the head. The Adams County dozer was instructed to improve the fireline back to the fork in the ATV trail where we started. I radio Lehman that information. Lehman informs me of his progress.

At 8:08 p.m. OPS calls and wants the Adams County dozer redeployed to “D” Division at CTH C. Division Supervisor Eric Zenz needed it to build driveable break behind the Right Line Construction Group. I am reluctant to give it up while the west side of the head remains without firelines and burnout needs to take place on the constructed lines. OPS agrees to assign “H” Division a task force including ATVs and US Fish and Wildlife Service Fire Management Officer, Tom Zellmer to complete the necessary burn out. I agreed to redeploy the Adams County dozer. I inform Lehman of the plan and to load up the Adams County dozer for redeployment.

At 8:30 p.m. the Task Force arrives at the intersection of 6th Ave. and Beaver Ave. I brief Zellmer on the assignment to burn out the constructed dozer lines from the yard of the house to the feeder creek. I hold a short briefing with the firefighters assigned to the task force. I assign Lehman “H” Division Supervisor while I drive to ICP to update OPS.

At 8:45 p.m. brief OPS and Situation Unit on status of the fire. Corrected the fire map based on my personal knowledge. Lehman radioed that he and the Adams County dozer are enroute to “D” Division. While at the ICP I notice two tractor plows on the available board. I asked OPS if they could be assigned to “H” Division to complete the fireline west of the feeder creek. OPS assigns Medford 1 tractor plow and Tomah 1 tractor plow to “H”. I brief the operators and riders and asked them to follow me to their assignment area. I stop and pick up Lehman on CTH C on the way back to “H”.

At 9:10 p.m. I drop off Lehman to check the progress of the burnout operations by Zellmer and I take Medford 1 and Tomah 1 to unload their units. I rescout the area of the firelines from Beaver Ave. north to the feeder creek. I assign Tomah 1 to furrow several small areas of black

north of Beaver before moving east to the main slopover area. I assigned Medford 1 to furrow the main slopover north of Beaver and burnout if they could not furrow on the black.

At 10:00 p.m. OPS calls for resource needs for the night shift. I request two tractor plows for patrol and mop up. OPS advises me to finish my firelines and to then plow south from Beaver Ave. on the west side of the fire to assist Left Line Construction Group complete their lines.

At 10:30 p.m. all fire north of Beaver Ave has completed firebreaks. The "H" Division has been held. There is still over a mile of uncontrolled fire on both flanks south of Beaver Ave. Medford 1 is assigned to the eastern fireline to support the Zellmer burnout. Tomah 1 is assigned mop up and patrol on the western fireline.

At 11:15 p.m. the Left Line Construction Group Supervisor, Bob Bartholomew reports he has reached Beaver Ave. He had not. I find the Group on 7th Ave where they had followed a feeder creek east to 7th. I reluctantly informed the group that there is still Ω mile of line yet to be completed. I lead the Group up to Beaver Ave and they anchor to the road and head south to complete their line. I inform OPS of the situation.

At 11:30 p.m. the Right Line Construction Group anchors into Beaver Ave. A portable Salvation Army Canteen had been set up at the intersection of 6th and Beaver for their refreshment. After a few photos, I began to shuttle some operators back to their transport units 7 miles south.

At 12:30 a.m. on May 6, 2005 the Left Line Construction Group reported that they had completed the line. The Cottonville Fire is contained! The Left Group resources are moved back north to Beaver Ave. and I began to shuttle some operators back to their transport units.

At 1:30 a.m. all of the suppression resources assigned to "H" Division are released back to the ICP for check out. Lehman and I assist in loading tractor plows onto transport units. All Right and Left Group resources are loaded and enroute back to the ICP.

At 2:30 a.m. we proceed to the ICP. All "H" Division resources have completed check out. The Komatsu dozer is left on 6th Ave but the operator has checked out. Lehman and I check out from the Cottonville Fire Incident. We proceed to WI Rapids to a motel for the remainder of the night.

Mike Lehman

THURSDAY, MAY 5, 2005

Aprx 1:45PM At Necedah Ranger Station. Heard page for fire in Adams County. Chris Klahn, Co-op Ranger, and I responded in Chris's engine (8X with 150 gallon tank).

Aprx 2:00PM Arrived on scene on Chicago Ave. (Pictures on Chris's camera) Assigned H Division by IC, Jodi Malin. Fire burning in Red Pine 15' – 20' tall, surface dependent crown fire.

2:15PM Met with John Schwingel, Operations Section Chief, had briefing on H Division and fuels ahead. "10 miles of pine." One structure triaged on Chicago and pipeline. No time or adequate resources for any effective pre-suppression efforts. Monitored fire behavior as head crossed Chicago Ave. and pipeline (pics on CK camera and ML camera). This structure survived.

Proceeded to Buttercup Ave and performed evacuations on Buttercup and 9th Court. Residents refused to leave at trailer on 9th Court. Persuaded to leave when crown fire became visible (pics 2:35PM) and Chris told the woman she was going to die if she stayed. This trailer home was lost.

Patrolled Buttercup in front of head to do size up of head width. Monitored fire behavior as head crossed Buttercup from east end.

3:28PM Returned to 9th Court. Made contact with Right Group. 500 pound propane tank was venting. Very spectacular. Klahn met with Brian Luebke, right line construction group supervisor and scouted structures ahead for hazards (propane tanks). I took Klahn's engine to monitor fire behavior and progress behind the head at Buttercup Ave. I returned to 9th Court and Klahn took engine and proceeded to north of fire head for more size up. I joined right group to diagnose 450-C (Friendship 3) overheating problem. Determined a branch had blocked shut the exhaust flapper. Unit ran fine the rest of the day. I stayed with right group and proceeded north to Buttercup Ave. (pics 3:51PM)

Right group proceeded north of Buttercup Ave. I stayed on Buttercup waiting for Klahn to return and pick me up per our plan. No fire on right flank; line completely burned out. Fire size was large enough that I could not reach Klahn or OPS via red net. I had the OPS (Schwingel) cell phone number and called to help with my

transportation. OPS was busy and I was told I was on my own. I started walking east on Buttercup (east of the right flank) towards an LE squad that was doing traffic control about ½ mile east on Buttercup. He saw me and came to investigate and gave me a ride to Brown Deer Ave. where I was reunited with Klahn and continued to perform evacuations on Brown Deer Ave.

Returned south on 7th Ave and took woods trail to west in front of head for reconnaissance. Evacuated ourselves as head approached. Reported head width to IC/OPS.

Aprx 4:10PM Proceeded to County Hwy C. Met with LINE (Jodi Malin) and Jim Barnier. Discussed potential strategy to make a stand at Hwy. C if CL215 arrives in time. It did not. Fire spotted across C and took off as a crown fire almost immediately (pics 4:40PM).

Met with Steve Coffin, Fire Department Co-Boss, discussed use of air resources and structural protection progress.

Proceeded to Big Horn Ave. Performed evacuations and organized LE and fire departments to assist. Monitored fire behavior and head width. Head was approximately 60-100 yards south of Big Horn ("fire monster" and other pictures 5:18-5:22PM). SEAT dropped on head right by us on south side of road. Marginally slowed head progress. Retardant completely covered our engine. Unable to see through windshield. We proceeded east to 6th and Big Horn and washed truck.

Proceeded to Beaver Ave. and organized evacuation with LE and fire departments. 2 LE squads reported a civilian truck ran their road block west on Big Horn. Chris and I followed and got the civilians out after they retrieved a dog from their building. SEAT dropped along head and slowed progress. At Beaver and 7th Ave. a resident who had evacuated approached us concerned about her \$1000 Macaw bird. We got her fire number and proceeded to her residence and retrieved large cage and bird and took to owner. She was extremely grateful.

Head crossed Beaver Ave. Klahn requested FD for structural protection "in the black" on Beaver. Permission granted and the Pittsville FD was found on Badger and briefed on change of assignment (pictures; approx 7:06PM). Klahn proceeded on foot in black behind center of head to do reconnaissance. Reported ground fire with 3 foot flames in hardwoods; fire behavior significantly reduced. Reported such to OPS. Asked

for dozer/tractor plow resources and received two D5 dozers at drop point 8 (6th and Beaver).

Klahn performed reconnaissance and flagged ATV trail for possible line to stop head. Chris returned to IC and obtained map of fire. Up to this point the only map we had was the page out of the Wisconsin Gazetteer and a locator book borrowed from a deputy.

A taxi dropped of burgers and chips for supper while unloading D5s on 6th Ave.

Chris and I each took one D5 down ATV trail. Chris went north and west and I went south and east. I tied in to residence green grass at Beaver Ave. Chris tied into small creek on left side of head. Chris called for one air drop to slow head at apex. I heard OPS direction that air resource priorities were to support left and right group as they were still 1.5-2.5 miles south of Beaver Ave. and had active fire behavior in pine fuel. Don't know if Chris got a drop where he wanted it. But the CL215 dropped directly on me on the right side. This was at approximately dusk (9:00PM??) as I was kneeling with my pack off retrieving and installing my headlamp. Fortunately it was water only and no retardant. I was approximately 40-50 yards east of the right flank of the head fire. This drop completely missed any fire and had no effect on fire progress. There was no communication between Air Attack 4 and H division after the initial drop/contact and no communication that drops were imminent. The lead plane and CL215 seemed to make several dry runs in multiple directions before the drop that soaked me with no warning. CL215 made a 2nd drop on my flank a bit later. I only got misted on that time. This drop was closer to the fire (still about 30 yards east of right flank) but still had no effect on fire behavior. Fire behavior on the right side of the head was minimal; two foot flame lengths burning slowly, on the ground in hardwoods.

Klahn took engine to ICP and got updated maps and reported progress. I managed H Division finishing up line completely around right side and front of head (from right flank at Beaver Ave. to creek on left side of head). When Chris returned, I was assigned to move the Adams County D5 to Foxtrot Division at County Hwy. C and 7th, which I did and turned unit over to Zenz.

We left the second contractor D5 (Komatsu) on right side of head line to shore up line and make driveable break and meet up with Zellmer firing crew coming up line.

Klahn picked me up on County Hwy C. We returned to Beaver Ave. Klahn acquired two tractor-plows (MED 1 and Tomah 1) and we put in line off of Beaver Ave. on left flank and tied into the little creek where the D5 line ended. Made hand line to tie dozer line into creek. Contractor D5 turned over to Zellmer to knock down a few snags and then he parked his dozer on 6th, got a ride to ICP and was released. Sent MED 1 to residence on Beaver Ave. on Right flank to tie into D5 line and assist in patrol of burnout on that flank. I managed TOM 1 and firing crew on left flank from Beaver Ave. to creek.

Klahn and I proceeded to Beaver and 7th area where left group got to Beaver. Klahn shuttled operators back to origin to retrieve heavy units. I worked on NEC H pump problem. Unable to fix in field.

Klahn and I proceeded to ICP for debriefing and check out at 2:40AM Friday. Spent night in Wis. Rapids.

FRIDAY, MAY 6, 2005

Klahn and I took Jolene Ackerman around fire for photos and WUI discussion.

Performed initial attack at structure on County Hwy. C with Spooner south ranger. Smoldering fire had approached structure.

Klahn, Ackerman and I got a flight with air attack to survey and photo fire from air.

Physical Fitness Issues

I estimate I walked over eight miles on Thursday. Approximately one mile of that was in a run when doing evacuations. I weathered the day fine from a physical standpoint. The only negative was some sore feet and one blister on my foot. I am a firm believer that my level of conditioning (arduous at the national level) was critical to surviving the day alert and functioning at full capacity.

EQUIPMENT ISSUES KNOWN TO ME

- ✓ Friendship tractor-plow (Backus) broke plow pin. Fixed in field by operator.
- ✓ Friendship 3 tractor-plow overheating. Found a branch had blocked shut the exhaust flapper. Fixed by operator.
- ✓ Black River Falls tractor-plow bent beam of plow and broke moldboard extensions. Able to continue plowing. New plow installed on Friday by Tomahawk shop crew.
- ✓ Necedah tractor-plow blew a radiator hose. Fixed by Friendship mechanic on Friday (had to order hose).
- ✓ Necedah tractor-plow (Wilhorn-H) backed into tree and broke fire water filter housing. Fixed by Black River Falls mechanic on Friday.
- ✓ Wisconsin Dells tractor-plow starter failed. Fixed Thursday night in field by Black River Falls mechanic.
- ✓ Medford 1 tractor-plow fire water pump wouldn't draft water below Ω tank. Pump worn out. Temporarily repaired Friday at Friendship shop.
- ✓ Friendship tractor-plow (Teri) broke moldboard extension. Plow OK and remains in service.
- ✓ Black River Falls tractor-plow has fire water suction box lid leak. Ongoing problem. Fixed after incident at Black River Falls shop.

Carl Backhaus - Friendship 1

11 HRS TP-219, 40 MILES

#5211, 23 TECH HRS

Dispatched to fire from friendship ranger station, second tp on right flank behind frd 3. We had a spot or slopover at beginning that frd 2 picked up and we commenced plowing north.

The tactic of the lead tp plowing with two tps blading the line wider worked well in the red pine plantations. The line held until Chicago Ave. & the pipeline where we had a spot over the line which was contained.

From Chicago Ave. north we made quick time with frd 1, 2, 3 & nek 2 plowing in oak & jackpine.

Near 9th crt private rd, as i was going to plow around a mobile home, a large lp tank blew its top. (later paced off as 30ft from me). After tank vented we plowed to buttercup ave. Where i believe dells 1 joined us. We caught multiple spot fires north of buttercup in a large diam. Red pine plantation to protect a structure.

Between buttercup & browndeer aves. We experienced another hard wind push from the west in a red pine plantation so we plowed east to an oak jackpine stand where my plow pin broke.

Nek 2 & friendship ranger's rider/burnout guy (Mike Bunker) helped me quickly change the pin. We caught the group at browndeer crt. & proceeded north. South of county c we lifted plows at a field and ran east to contain the large spot fire. North of city c to our end point at beaver ave. It was dark with lower fire activity.

Over all the group did an excellent job. We put in good line that held and was probably drivable. I believe we tried and learned a lot from our tactics. The line burners worked especially hard to keep up doing an excellent job in hot, smokey conditions, we need to rest and replace them at intervals.

FRD 3 - Kirk Fitpold

PRE-INCIDENT

On May 5, 2005 WI Rapids Daily Fire Operations Plan called for a heavy unit to be pre-positioned @ Big Flats starting at 1230. I was standing by at the Town Hall for about an hour when Dyracuse tower called in a small white smoke at 175 degrees at five miles (approximately 1333). Shortly there after, Adams County Fire District and Friendship DNR were paged to a reported grass and mobile trailer fire at 972 S. Chicago Ct. Friendship Ranger made an initial resource order including 2 heavy units. I contacted WI Rapids Dispatch and put myself in-service to the reported fire. While enroute to the fire, I verified the best access/directions to the fire with Friendship Ranger (East on Cottonville Ave. to 10th Ave. turn north, and then proceed east on S. Chicago Ct.). I arrived on scene at 1346, and proceeded to unload the tractor plow.

INCIDENT ASSIGNMENT

As I approached the origin of the fire, I was assigned to the right flank and was instructed by Friendship Ranger to wait until a second tractor plow was with me before proceeding. Moments later, FRD 1 had arrived and we proceeded to plow on the right flank with Mike Bunker burning out the line. I was in the lead with FRD 1 following. We had plowed ~100 yards towards a red pine plantation when the wind shifted and became more out of the west. Fire behavior/intensity increased and our furrows did not hold. There were reports of breakouts/slopeovers over our containment lines. I proceeded back along the black until I meet FRD 2 and Right Group Supervisor (i.e. NEK Ranger). All three tractor plows regrouped with Right Group Supervisor and then continued on. From this point on having three tractor plows teamed up proved very effective. The line was holding as the group was crossing Chicago Avenue. We were busy saving a structure at 924 Chicago Ave. near the pipeline. During such time Bravo division reported a slopeover/breakout south of Chicago Avenue. We backtracked and eventually contained the breakout.

We continued northeast from this point with 4 tractor plows (NEK 2 had joined FRD 1, 2, & 3). As the right group neared 9th Ct. PV several situations occurred simultaneously. A large LP tank began venting near FRD 1. I believe the rest of the group backed off and stood by for a few moments. At the same time I (FRD 3) temporarily

overheated due to the exhaust flap being slammed shut by a tree branch on the tractor plow. The LP tank eventually stopped venting and the alarmed ceased on FRD 3 after a quick fix. All was well and we continued on.

As we neared Buttercup Ave. & 9th Ave. Dells 1 had joined the group. As we plowed north of Buttercup Avenue, multiple spot fires were contained while protecting several structures. Shortly there after, we entered into another 15' red pine plantation. Here we experienced another hard wind shift from the west. It was most advantageous for us to continue thru an Oak/Jack pine stand just to our east towards 8th Court and Browndeer Court. In this area, FRD 1 broke a plow pin. NEK 2 and Bunker assisted with the repair while FRD 2 and I continued plowing until we tied into Browndeer Ave. near 8th Avenue.

At Browndeer Ave. and 8th Ave. Wausau 1 and a Prey unit joined the group. We continued to the northeast, eventually tying into Dry Creek. After walking the tractor plows around the creek we continued constructing control line until a large field just south of County Trunk C. From there we were directed to contain a spot fire (~10 acres) to our east.

Dusk was falling as we headed north of County Trunk C. Fire behavior was low from County Trunk C until Bighorn Avenue and beyond. As we crossed Bighorn Ave. and 7th Avenue, Air Attack assisted the group due to the lack of an active flame front. We continued on until we hit a dyke near Beaver Ave. and 6th Avenue. We then walked the tractor plows around the dyke and eventually tied the control line into Beaver Ave. with H division.

From Beaver Ave. we were given rides back to our units. After loading the heavy unit, I arrived back at Friendship 0300 on May 6, 2005.

TACTICS & FUEL TYPES

Tactics varied due to fuel type. And there were numerous fuel types along the way.

In 15'-20' red pine a minimum of three tractor plows were needed, using a combination of plowing and blading. This provided an adequate control line amongst the tree canopy and ground fuels.

Line construction rates were best thru mixed Jack Pine/Oak Hardwood stands. Placing two to four furrows wide with additional tractor plows patrolling the line and/or blading the furrows towards the "green" proved very effective.

Progress thru mature red pine (i.e. plantations with 1st and/or 2nd thinning) was slow at times due to stumps. Operators needed to take their time due to the fuel type being so rough on the equipment. At other times in this fuel type, the lead tractor plow was best utilized by punching a path thru the fuel (i.e. trees etc.), allowing furrows to be placed by the 2nd and 3rd tractor plows.

Line construction slowed thru areas with extreme Oak wilt kill and dog-hair jack pine stands. Again, there were times the lead tractor plow was best utilized for punching a path thru the fuel for additional tractor plows following up with furrows.

Plowing along the black after dusk without an active fire front was difficult at various times. To mitigate the problem, the right group outfitted a rider with a head lamp and utilized them as a forward scout for the lead tractor plow.

FIRE BEHAVIOR

At times we observed extreme fire behavior. Safety was never compromised due to burning out the line and bringing our safety zone with us. If need be, we slowed line construction down to monitor the fire and its behavior. As conditions improved we continued on with line construction.

COMMUNICATIONS

As usual there was an extreme amount of radio traffic on red, especially during early stages of initial attack. A lot of radio traffic and good information came from Rapids Air Attack regarding the current situation. Establishing communications on White Alpha repeater (unsure when this took place?) appears to have minimized traffic on red net. In future training sessions, an emphasis should always be placed on establishing that communication link as soon as possible.

AIR RESOURCES

I personally saw only one retardant drop from the SEAT along the right flank near Chicago Avenue. Fuel type at this location was 15' red pine and the drop did not seem to be very effective in that area.

Air Attack was extremely helpful after dark. There was quite a bit of communication and coordination between Air Attack and the right group as operations continued thru the nighttime hours. It would have been much more difficult without Air Attack there.

SAFETY

I felt comfortable and safe with our assignment along the right flank. Thanks to several riders, we were always burning out the line. They were on foot for a long time. We as an agency should consider switching out the torchmen/riders during future project fires of this size and nature, if they are willing. Providing ATV's for left & right group supervisors and/or riders should be explored in further detail. ATV's are not always at our disposal, however it would improve line construction rates. Overall, the right group worked together extremely well throughout the entire incident.

POST INCIDENT

Vehicle traffic did pose a problem on Saturday May 7th. It was very difficult and unsafe driving/operating the heavy unit after the evacuation area was reopened to the public.

Terri Wilson

FRD 2

On 5-5-05 I was on stand by at Hwy. Z and 21. Shortly after the page went off I went in service to the fire on S. Chicago Ct. After arriving on scene the IC assigned me to right group. I started as the third tractor on the right flank. I caught the one break out and met up with FRD 1 and FRD 3. We then started putting in line. NEK 2 and Dells 1 met up with us at the pipeline and Chicago Ave. We crossed Chicago Ave. and continued on. Along the way Wausau 1 and a tractor plow from Prey joined the right group. After crossing numerous roads and detouring around two cricks we arrived on Beaver Ave. fueled up, returned to the ICP, and then on to our stations.

We used various tactics putting in line. At times the lead tractor was plowing with the following tractors improving the line with the blade and in other places there are 5 furrows. Of course the tactics we chose matched the fuel types we were in and the fire behavior we were experiencing. I believe at all times there was at least one person burning out the line. The riders – the ones burning out the line - did a fine job, and by the time the group got to Beaver Ave. these folks were beat.

I know of only one SEAT drop on the right flank. It occurred on the pipeline and Chicago Ave. and it was a retardant drop. We did lose the portion

of the line that was dropped on. When we came out to 8th Ct. a CL 215 flew overhead on what I believe was a drop run but I did not see the drop.

Overall things went well. At times there was very active fire behavior and we made slow progress. At other times it appeared that the actual fire was just creeping along and the active fire behavior was being caused by the burnout.

***Scott Wilhorn -
TPL1 Necedah Ranger Station***

***James Newlun -
FFT2 Necedah Ranger Station***

05/05/05

We were dispatched to the Cottonville fire from our standby location in Germantown. Upon arrival I checked in with the IC and was assigned to the left group. I unloaded the tractor plow and tried to get in contact with the left group supervisor. At that time, left group sup. was trying to get a hold of Nekoosa 1 to advise him of a slop over. After several unsuccessful attempts left group made an announcement of emergency traffic only and kept trying to get a hold of Nekoosa 1. I made the decision that I would just check the line and not put in a third furrow until I caught up with the group. I advised my rider to bring a hand tool and follow behind. I caught up with the group somewhere between 1/8 and 1/4 mile north of the origin. About the time I caught up with the group Nekoosa 1 had return from the north and the three tractor plows started building line to the north. When we got to Chicago Ave it was determined that Nekoosa 1 had radio trouble and we would keep him between Necedah 2, in the lead, and Necedah 1, following behind. The next mile went fairly quickly. Necedah 1 broke down as we approached Buttercup Ave and was replaced by Dells 2.

We crossed Buttercup and started for Brown deer Ave. Shortly after crossing Buttercup we came across two separate structures that the fire was burning around or pushing one side. The first one was a travel trailer and the fire was pushing up against the east side. I tried to blade a line between the fire and the structure but a small area burned under the trailer. I used a little water and wet down the area under the trailer.

The second structure was a mobile home and had flames coming from under the deck and along side the trailer from an ornamental bush that was burning. The main fire was just creeping around the lawn. Upon arrival I went to the deck and knock down the flames from it and the bush burning along side the trailer. I decided to check the back of the structure where I found a wooden fence around the back yard. I knocked part of the fence down to gain access and found a few items burning near the house. I extinguished them and joined back up with the rest of the group. While I was doing this Nekoosa1 had been pushing a burning outbuilding away from the structure. Left Group Sup. tried to get a hold of ops to get a fire department to check on both structures but was unable to give them a location of where we were. The structures were turned over to Necedah 1 and a couple of fire department vehicles at the intersection of 10th and Buttercup. The left group got back together and started building line. Just before Brown deer Ave we encountered "Dry Creek" that was not dry. Left Group Sup. and Gary Krause found a narrow, shallow area that we decided to try and cross. We pushed a little fill into the creek and were able to cross.

At Brown deer Ave we stop and refilled drinking water and met with Line Boss. My water tanks on the T.P. were down slightly so I decided to fill them with water from Friendship 4x4. I shut off the foam supply but there must have been some left in the system because some foam ended up in my tanks. I overfilled both sides trying to flush the foam out. When I completed filling the tanks I did check the water supply and shower system and both worked.

The area between Brown deer and County C was mainly residential area. Most of the active flames were extinguished by fire departments. We did plow a line along the perimeter and pushed burning wood piles and other objects away from structures. North of the corner of Blackhawk Lane and 9th Ave most of the fire stayed east of 9th and had burnt up to 9th Ave. We did plow around one area on the west side of 9th about half way between Brown deer and County C. Less than 1/4mile south of County C the fire jumped 9th Ave and was burning down to Big Roche a Cri Creek. We started building line but quickly came to the creek and had to build hand line down the hill to the creek. While our riders built hand line the tractor plows followed a path out to 9th Ave and proceeded to County C.

On County C we had an extended break as we tried to figure out if the creek was holding north of "C" or not. Here we met Tomah ranger, Tomah 2, Antigo1, and three private heavy dozers. With the help of air attack, it was determined that the creek was holding except for one small area that had crossed the creek. Because all of the equipment that had just arrived was still on trailers it was determined that they would go to the west side of the creek and work on that spot, along with one of the private heavy dozers. The equipment that was unloaded would stay on the east side and work with the other two private dozers. The Left Group Sup. decided that the equipment on the east side of the creek would road the tractor plows east on County C, north on 8th Ave, and west on Bighorn Ave. to the fires edge. Before proceeding we did get food and water.

Along the way I tested my pump again and determined that it did not work. Upon arrival at Bighorn Ave, Nekoosa 1 and Wautoma 1 looked at it and thought that it was because of the foam in the tanks. As Nekoosa 1 and Wautoma 1 plowed a line south of Bighorn Ave, I dumped all of the water out of the tanks and flushed them with clean water. I had a fire department fill the tanks with clean water but was unable to get the pump to prime. We were unable to determine the exact cause of the problem but thought it was a problem with the pump. The Left Group Sup. asked if I felt comfortable continuing without water. I said yes as long as we stayed together as a group and the fire activity did not pick up.

North of Bighorn Ave the creek was holding and most of the active flames were out. It was determined that we would build drivable break along the edge of the uplands and the creek bottoms to assist with mop up later. Along the way there were a few spots that were actively burning so we dropped off into the creek bottoms and did plow around them. We came out on 7th Ave and thought we were on the fires edge but there was an area south of Beaver Ave and west of 7th that had burnt. We went to the fires edge along Beaver Ave. and started building line south of Beaver. We continued until we came to a branch of the creek and could not go any further. We turned around and went back to Beaver Ave. At Beaver Ave. we met with "H" division and learned that they had containment on everything north of Beaver Ave. and our assignment was complete.

We started shuffling people back to get trucks with the help of "H" division. While waiting for my truck and trailer to arrive I had Mike

Lehman look at my pump on the dozer. We worked on it for about 20 minutes but nothing could be found wrong. Once the truck and trailer arrived I loaded my dozer and headed for the ICP with rider and Necedah 1's rider. We checked out at ICP somewhere around 3:00am and started back toward Necedah.

The next day, with the help of Dan Barton, it was determined that I had a crack on the suction side of the pump allowing air to enter the system. That problem was fixed but it was also determined that there was a transmission leak that will need to be repaired by John Deere.

Eric Zenz

ASSIGNMENT

F Division Supervisor (F Div ran from Cty. Hwy. C to Beaver Ave.)

ASSIGNMENT DETAILS

Drive down Cty. Hwy. C to the right flank of the fire and determine if the Right Line Construction Group will have problems getting to Cty. Hwy. C soon. Once the line construction group works north of Cty. C put in driveable break and patrol the control line to the terminus of the division at Beaver Ave.

RESOURCES ASSIGNED

Forester Chris Schmitz and Adams County D5 Dozer

ACTIONS TAKEN

Chris Schmitz and I drove to the right flank of the fire on Cty. C. The Adams County dozer would arrive later when it was available. As we were arriving the Right Line Construction Group was reaching Cty. C. I spoke to Brian Luebke and he informed me they were going to break at Cty. C for food and fuel. They had been burning out the line as they went north.

The line construction group moved north up the right flank of the fire. The Adams County Dozer was not available yet. Therefore, Schmitz and I started patrolling F Div on foot and with the Black River 4x4 when possible. Snags were felled when warranted.

When I was given my assignment at the command post I asked, "What are communications on?" I was told, "Communications will be on Brown." I then left for the field. Later, I checked on the status of the Adams County heavy dozer. I attempted to contact

line on Brown, but was never able to reach line. At the command post I was given the Operations Section Chief's and Ops's cell phone numbers. The cell phones proved to be an effective backup communications tool. I used my cell phone to call back to the ICP and was then informed divisions were on brown, line construction groups were on red, and line was on white.

In the future a written communications plan would be a valuable resource to units checking in and heading out to the field. The communications plan could be handed out with the map. The plan would inform field personnel on the communications link between divisions, line construction groups, ops and the operations section chief.

I was informed the Adams County heavy dozer would meet me at drop point six. I met the dozer. Driveable break was constructed until relieved by the night shift.

SUGGESTIONS:

Hand out a written communications plan with the map.

Ron Schneider - WDNR Forester Ranger, Tomah Ranger Station Echo Division Supervisor Resources Assigned to Echo Division

PERSONNEL EQUIPMENT

Ron Schneider (Tomah Ranger, Echo Division Sup) Type 7X

Ryan Greeno (Tomah Rider – Tomah 7X)

Staci James (UWSP Rider – Waupaca 1)

Jason Guthrie (Rider – Necedah Ranger Station)

Garry Rapala (Forestry Technician – Tomah)
Tomah 2 (450 H tractor/plow)

Pete Solin (Antigo 1 Forestry Tech)
Antigo 1 (450 tractor/plow)

Hintz (Contracted dozer)
Caterpillar D4 hi-track

ASSIGNMENT FOR ECHO DIVISION

Construct fire line with dozers and tractor plows to contain forest fire on the west side of river. Line construction to begin where fire begins north of County Hwy. 'C' to the north and anchor fire line back to river or road. Echo Division area of responsibility north from CTH 'C' to Beaver Avenue.

FORCES RELIEVED

NONE

The fire had burned west across the river somewhere north of CTH 'C'. No resources had yet been assigned to this division other than the responsibilities of the left group. Assignment was given by operations and briefed to myself from the Left Group Supervisor, Bob Bartholomew (Necedah Ranger).

DETAILED ASSIGNMENT

Schneider and Greeno left Tomah Ranger Station at about 5:30pm and arrived at the ICP at about 7pm. A flat tire while enroute slowed the response. We checked in at the ICP and waited about 20 minutes for our assignment. We drank and ate supper and were supplied an updated fire map.

Echo Division assignment was to construct and patrol driveable fireline from County 'C' north to Beaver Avenue (2 miles). I met left group supervisor, Bartholomew, on site at county 'C' with our assigned resources. Bartholomew informed me that the fire had jumped Roche A Cri Creek to the west somewhere north of County 'C'. The division had been assigned 3 dozers to complete the task of building fireline west of the river north of County 'C'. Bartholomew decided to reorganize the resources to better suit the needs. The Echo Div was assigned 1 dozer and 2 DNR tractor plows. The other 2 dozers were re-assigned to the left group.

Schneider and Greeno walked up the west side of Roche A Cri Creek from County 'C' to the north to find the fire. All other resources drove up to Bighorn Ave and south 1/2 mile on 9th Avenue on a dead end and unloaded near a plowed agricultural field. Air attack guided me north to the fire. Air attack informed me where the fire was, and that citizens were attempting to suppress the fire with handtools. There also was a farm tractor near the fire edge. Schneider walked back to the field after walking the fire edge and guided a path for the dozers to enter. The 3 dozers drove the path to the fire and drove south to anchor the fireline at the RAC Creek. Dozers completed the anchor and constructed line with the heavy dozer in front. I informed the citizens to clear themselves and equipment from the area. The sun was setting at this time and visibility was getting poorer. The fire was burning in pine and oak litter with torching of some smaller white pine. Large white pine were not torching although wind shifts were pushing the flames lengths across the fireline. One spot

fire was observed by air attack and suppressed with a tractor plow. Fire line was completed and anchored on the north into RAC Creek. No structures were threatened in the fire area. Two deer hunting tower blinds were saved with water and handtools. During and after fireline construction, four people on foot (Schneider, Greeno, Guthrie, James) were walking the fireline to patrol for slop overs or spot fires.

DEMobilIZATION

Echo Div resources were relieved at about 2:30 am. Wausau Forester, Mike King and the UWSP Fire Crew arrived with brush trucks and 2 ATVs. I drove the fire line with Mike King and showed him the extent of the fire line. We also looked at a structure which was reportedly threatened, but the active fire was on the other (east) side of ROC Creek. He assigned one firefighter to monitor that situation and the remaining to patrol the line. He informed the crew that they would not be felling trees during nighttime hours due to safety concerns.

SAFETY CONCERNS / EFFICIENCY

All personnel working on the fire had sufficient personal protective equipment except for the operator of the heavy dozer. He had no radio or clothing. He did an excellent job and there were times when he slowed down and waited for torching trees to burn before proceeding. He had worked on forest fires before with his dozer. I was confident of his abilities. Air attack was a great lookout for safety. We had the black with us for a safety zone at all times. Nighttime operations were a challenge. I walked back to my truck to get flashlights for all firefighters. Radio traffic was busy on Brown and Red channels. It was very important to identify the division by entire word (Echo) instead of letter (E) due to similarly sounding letters on the radio.

We were first assigned to build line on the west flank from County 'C' to Beaver Avenue, but the fire was burning on both sides of the creek which was not crossable. Bartholomew reorganized our resources and informed operations. The fire east of the creek and south of Beaver Avenue was worked on by the left group instead of Echo Division. This caused a little confusion when we first started our assignment.

