

Brief History Of

April 3, 1974, Tornado, Reports (1)

This is one of many sections that contain information, documents, letters, newspaper articles, pictures, etc. of the St. Matthews Fire Protection District. They have been collected and arranged in chronological order. These items were collected, organized and entered into a computerized database by Al Ring. Last revised in 2023.

There were many people who helped with this project over the years, however 3 deserve special mention. Rick Albers, John M. Monohan, Jr. and Jack Monohan.

All graphics have been improved to make the resolution as good as possible, but the reader should remember that many came from copies of old newspaper articles. This also applies to other items such as documents, letters, etc. Credit to the source of the documents, photos, etc. is provided whenever it was available. We realize that many items are not identified and regret that we weren't able to provide this information. As far as the newspaper articles that are not identified, 99% of them would have to be from one of three possible sources. *The Courier-Journal*, *The Louisville Times* or one of the *Voice* publications.

Please use this information as a reference tool only. If the reader uses any of the information for any purpose other than a reference tool, they should get permission from the source.



Personal note from Al Ring & STMFD Report

Working at the time at my service station, I headed toward the fire house just before the Tornado struck. I heard WHAS radio and all the news. Many other firefighters did the same. The next thing we did was probably the dumbest thing I personally have ever done. We pulled S-5, the quint out on the ramp and raised the 75 foot aerial ladder, climbed it to see what we could see. We did see the tornado, though we didn't realize it at that time, because it wasn't shaped like a typical tornado and we had no idea where it was hitting. We thought in Indiana, little did we know. I can just see us trying to get down quickly if it came right toward us, how stupid.

I was in command of S-1 and we responded at Harrods Creeks request to the Northfield area by going up Rudy Lane. At that time we had no idea that St. Matthews area had been hit. Approaching the intersection of Rudy Lane and Brownsboro Road, St. Matthews was knocked out on a possible touchdown of Tornado north of Brownsboro Road. Of course we continued to Northfield, we were committed.

That is why in this section you will see pictures and information on the Northfield area because one complete crew from St. Matthews spent many hours working in that area.

After the Tornado, each officer was asked to write a report of what his crew did during the emergency. The following is the S-1 crew report:

Report made by Al Ring after the 1974 Tornado for STMFD S-1

St. Matthews Northfield April 3, 1974
Officer: Capt. Al Ring S 1 Pumper Crew: 4 men plus officer

As soon as Harrods Creek Fire Department asked for assistance I brought S1 (750 GPM pumper) and a crew of four men to US 42 and Lime Kiln Lane. Lyndon Fire Department units had just arrived and informed me that the roads were blocked, so we parked S1 on the side of the U. S. 42.

At that time I did not know there was a command post. Because the radio was so full of traffic we did not go "10-7." (on scene)

The group from Lyndon told us to search the houses on the first street on the left of Lime Kiln, (Harwood). We were informed that there were plenty of crews checking the houses on the right off of Lime Kiln. I ordered my men to carry all the rescue equipment and forcible entry tools we had and headed for Harwood. In route to that street a firefighter told me they had found an injured girl and needed a stretcher. I told him I didn't think any were available and to make one out of blankets. At that time a surgeon introduced himself to me and asked to help. I sent him with that firefighter to aid the girl.

We checked the three houses facing Lime Kiln Lane and then started checking Harwood. At the start of the street I instructed my men to work in pairs, one group on each side of the street, with myself staying in the middle of the street. They were to report to me after a search of each house about people and fire danger such as gas. My plan was to stay in the middle of the street, aiding them if they had a rescue, keeping track of which houses were searched, counseling the people that were in the street, and giving these people advice. This plan worked for about half the street, and then the team on the right got way ahead and I lost track of them for the rest of the night. Since then we have had a discussion with our people about leaving an officer, and I think we have worked that problem out. Also at about half way down the street, I started grouping all the people (civilians) together and having them take care of older people, and people in shock. I put two older men in charge, and this seemed to work real well. I also informed them to get ready for mandatory evacuation. They did not like this, but a quick meeting with them on why seemed to answer their fears.

I do not know how long it took to cover this street, but it was a very long time. At the completion of this street we spent some time looking for our two lost firefighters, and then started helping clear streets. I also at this time had many conversations with different County Police Officers trying to find out who was in charge and what the over all plan was to be. They were in a state of confusion and had no idea what to do who was in charge or anything else. I suggested they set up a command post and at least stop the traffic from coming into our area, because by this time we couldn't move our trucks or anything else because of traffic. Also at this time I am sorry to say I still did not know who was in charge of us or where the command post was. I asked several other firefighters for this information but they didn't know either.

I then ordered my men to stay in that area and help clean up, and went looking for the command post. It took me about 20 minutes to find it. At the command post Capt. Murphy asked me what equipment we had, how many men, and gave me orders to go to 2210 Glenwood and stand by in case of fires. I went back to my crew, and we headed for this area, helping clear roads on the way. After getting there we stood by for about 45 minutes, until released. We then went to the St. Matthews Command post, to work with them.

Captain Al Ring

After the Tornado, each officer was asked to write a report of what his crew did during the emergency. The following is the report combining all the officers reports:

Report made by Al Ring after the 1974 Tornado

Report made by Al Ring after the 1974 Tornado.

St. Matthews
Officer: Capt. Al Ring

Northfield
S1 Pumper

April 3, 1974
Crew: 4 men plus officer

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At that time I did not know there was a command post. Because the radio was so full of traffic we did not go 10-7. The group from Lyndon told us to search the houses on the first street on the left of Lime Kill, Haddock. We were informed that there were plenty of crews checking the houses on the right off of Lime Kill. I ordered my men to carry all the rescue equipment and forceable entry tools we had and headed for Haddock. In route to that street a firefighter told me they had found an injured girl and needed a stretcher. I told him I didn't think any were available and to make one out of blankets. At that time a surgeon introduced himself to me and ask to help. I sent him with that firefighter to aid the girl.

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Captain Al Ring

STMFD Report

ST. MATTHEWS FIRE DEPARTMENT TORNADO EMERGENCY ON APRIL 3, 1974

At approximately 4:50 p.m. the Harrods Creek Fire Department called for assistance in a tornado touch down at I-71 and Lime Kiln Lane. St. Matthews S-1 (750 GPM Pumper) was dispatched from the fire station and responded by Rudy Lane to US 42, east to assist HCFD. St. Matthews S-8 (Assistant Chief) responded from US 42 and Rudy Lane east to Lime Kiln Lane. Upon S-8's 10-7 at US 42 and Lime Kiln Lane, a HCFD Pumper was on the scene. There was a tree across Lime Kiln Lane 250 feet north of US 42. S-8 attempted to communicate with an unknown firefighter in the HCFD Pumper, but he was preoccupied with radio communications.

At approximately 4:55 p.m., County Alarm notified St. MFD by tone alert of a reported two homes leveled on Indian Hills Trail.

S-5 (Quint), S-6 (Pumper) & S-3 (pumper) were dispatched from the fire station to ST. MFD emergency.

S-7 (Chief) responded from 3909 Elmwood Avenue to the St. MFD emergency.

S-8 (Assistant Chief) responded from US 42 & Lime Kiln to the St. MFD emergency.

S-9 (Assistant Chief) responded from fire station to the St. MFD emergency.

S-8 - Entered Old Brownsboro Road from US 42 at Chippewa, west towards Indian Hills Trail but a tree was across Old Brownsboro Road prior to Indian Hills Trail, and very much damage in the whole area. S-8 checked out damaged homes on Sigamore which parallels Old Brownsboro Road in this area, but found no injuries. S-8, on foot, saw S-7 at Old Brownsboro Road near Duff Lane and went to confer with S-7.

S-7 & S-9 - Responded by Chenoweth Lane (blocked by a tree) east to and north on St. Matthews Avenue (blocked by a tree) west on Leland to Chenoweth Lane, and north to US 42. They entered Old Brownsboro Road at Chenoweth Lane and east to Duff Lane. S-7 & S-9 conferred. S-9 and passenger (firefighter Golden) started search of Duff Lane. They located an injured woman at the last house on the northeast end of Duff Lane with a hand injury. The woman was taken to S-9's car and transported by S-9 to US 42 and Chenoweth Lane where she was turned over to the Jefferson County Police for transportation to medical care.

S-7 & S-8 - S-7 proceeded east on Old Brownsboro Road to Indian Hills trail where a tree and some wires were across the road, and meet S-8 on foot and conferred. S-8 and S-5's crew were to be responsible for the Indian Hills Trail area. S-7 left to check other efforts and set up a command post for the St. Matthews Fire Department.

S-5 Responded by same route as S-9 and arrived on Old Brownsboro Road, east of Duff Lane at a tree across the road with Captain Doug Monohan in command. Since the apparatus could not get through to Indian Hills Trail, Captain Monohan broke his crew into two man groups and started a house by house search north on Indian Hills Trail. S-8 drove across the grass from Old Brownsboro Road to Sigamore, west to Indian Hills Trail for radio and area command station. S-5 checked all houses north on Indian Hills Trail to Tribal. They came back to Arrowhead and east on Arrowhead Road. There were no tornado injuries in this area, but a gentleman at #6 Indian Hills Trail had terminal cancer. this house was 80% destroyed, but he and his wife refused to leave. They were advised that we would return later. In this area, there were no Jefferson County Police. Firefighter Gar Davis responded from his home on Westwing Road, south on Indian Hills Trail. He used his chain saw to cut a tree across Indian Hills Trail at Arrowhead to allow auto traffic through to Old Brownsboro Road, and west on Old Brownsboro Road by way of the grass and sidewalk around and under trees and wires. A Jefferson County Works Tractor with a front scoop was very helpful in clearing trees form Indian Hills Trail and Arrowhead Road. With an open single lane of traffic, traffic soon became a major problem to any rescue problem.

STMFD Report

S-3 & S-6 Under the command of Captain Rakestraw and Captain Handle, made a complete search of the Rolling Fields area. This included Rolling Lane, Pennington Lane, Canoe Lane, Deepdale Lane, and Edmond Lane. The Jefferson County Police were also in this area which resulted in much duplication of efforts.

S-7 Established a St. MFD command post at Old Brownsboro Road on the north side of the Taylor Drug Store. S-7 assisted Dr. Thomas to set up a field hospital at the Second Presbyterian Church.

Approximately 6:p.m.

S-9 and part of S-6's crew went to the north section of the City of Indian Hills, Indian Crest, Eastwind, Westwind, and Bow Lane.

S-5 Dispatched to the Cherokee section of Indian Hills (Trovis Road, Blankenbaker, Comanche Trail, Apache Road, Knowllwood, Daleview, etc. They were later joined in this area by S-9 and part of S-6's crew.

S-3 Dispatched to US 42 and Lightfoot Road to remove a body form an auto. This body was turned over to the Louisville Police Department. S-3 returned to the command post.

S-8 Notified by County Alarm of a request for a wash off on Dupont Circle, responded and did not locate or find a problem. S-8 returned to the Station and put S-4 (Quad) on the track. Firefighter Bill Andriot (older one) had the station under control and organized to receive and take communications and a ready response crew for S-4. S-8 returned to the command post, and then rechecked #6 Indian Hills Trail to see if they had changed their mind on staying in their house. There was no change and S-8 returned to the command post.

Approximately 7: p.m.

S-5 Returned to the command post and set up light generator for the field hospital at Second Presbyterian Church.

S-6 Was dispatched with a bull dozer down Pennington, east on Canoe to provide lights and assistance in road clearing.

A check with the Jefferson County Police command post at US 42 and Pennington resulted in their going to wait for the National Guard before the next phase went into effect.

S-3 Returned to the fire station to be 10-8 with S-4.

Approximately 10:30

All St. Matthews units were 10-8 at the fire station.

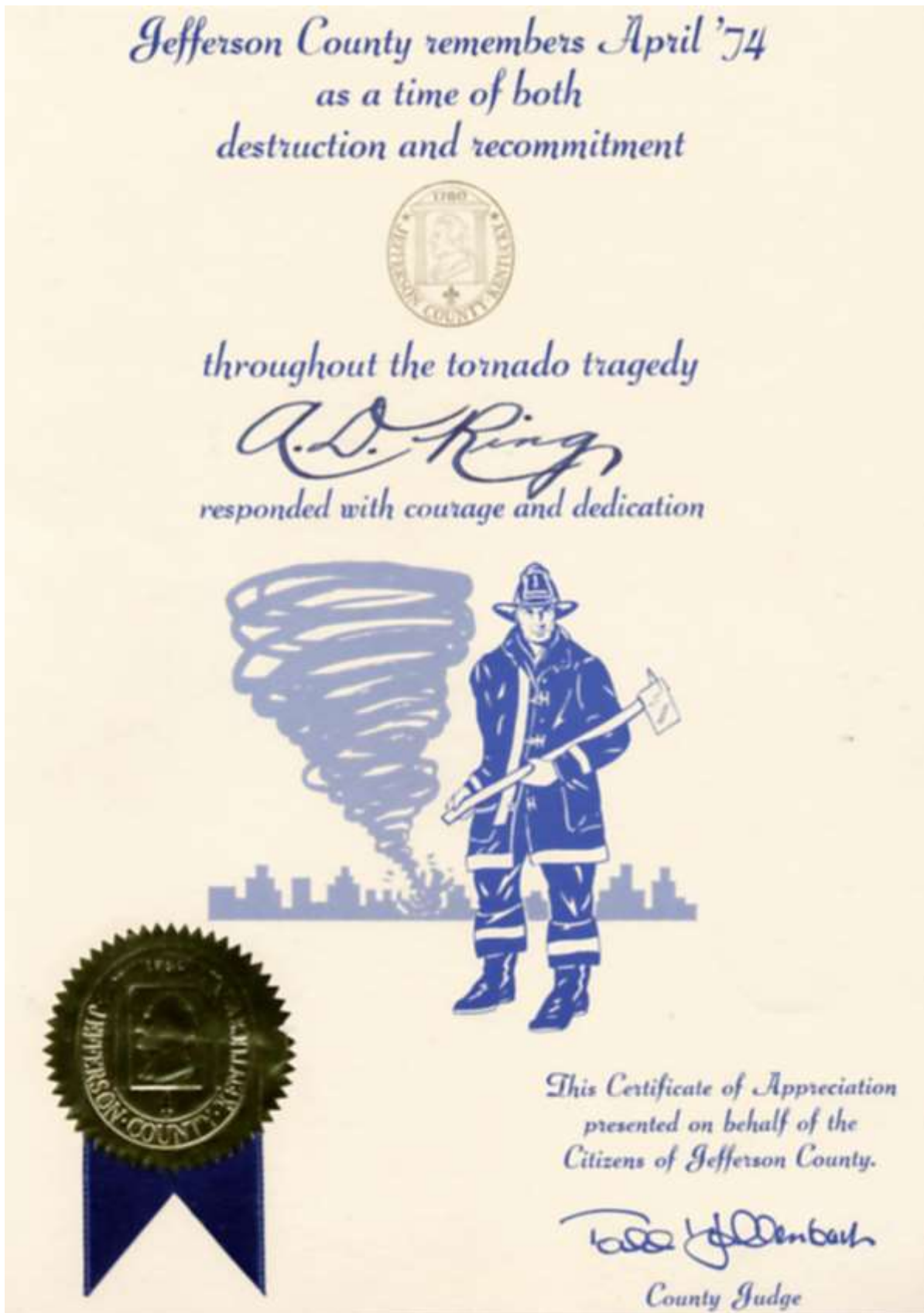
Approximately 11:15

S-5 & S-9 dispatched to Knowllwood Road and Daleview Lane to furnish lights and assistance to Jefferson County Police to search for a missing person. A woman's body was located and the Jefferson County Corner took charge of the body. S-5 & S-9 returned to the station by 12:15 a.m.

S-1 Report under separate cover, because of responding to HCFD area.

April , 1974

Each firefighter that participated in the Tornado Operation received this Certificate of Appreciation from Jefferson County Government



Harrods Creek Fire Department Operational Study & Report

HARRODS CREEK FIRE DEPARTMENT

OPERATIONAL STUDY & REPORT

TORNADO, APRIL 3, 1974



Harrods Creek Fire Department Operational Study & Report

OPERATIONAL STUDY & REPORT OF TORNADO - APRIL 3, 1974

TO: Fire Chiefs Jefferson County Fire Departments

FROM: Harrods Creek Fire Department

RE: Tornado - April 3, 1974

1. Time of Tornado:

First Alert: 4:18 p.m.
Tornado Hit: 4:56 p.m.

2. Location of Tornado:

Glenwood Manor - Northfield Subdivisions

Streets:

Glenview Ave., Wynnwood Circle - Harwood Road - Glenwood Road -
Linewood Circle - Winthrop Lane - Lime Kiln Lane - Hunting Road -
Jenness Court - Stannye Drive - Keewood Court - Stannye Court -
Northfield Drive - Northfield Court - Baylor Court - Rodes Court -
Rodes Drive

3. Weather:

Overcast skies - had been raining on and off during the day.
At time of tornado: Temperature 78° to 73° with hail.
Winds: Southerly- Southwest to West
Humidity - 74%
When weather tower at Standiford Field had to be evacuated
winds were recorded at 132 miles per hour.

4. Buildings Involved:

Private dwellings - one to three stories
Apartment complex - 12 stories

April 24, 1974 - Houses damaged (292)
Houses destroyed (83)

5. Life Hazards:

Area residents

6. Exposures:

North Side: Interstate 71
South Side: US 42 - Shopping Center
East Side: Hills & Dale Subdivision
West Side: Interstate 264 (Watterson Express Way)

Harrods Creek Fire Department Operational Study & Report

7. The tornado:

First arriving unit H-4 (Quad) found tornado had touched down and many houses heavily damaged or destroyed, electric wires down, street blocked by fallen trees. Immediately called County Alarm and ordered Harrods Creek's remaining units to respond.

8. Response:

Harrods Creek - Lyndon - St. Matthews - McLann - Jeffersontown - Worthington - Middletown

9. Operations:

Harrods Creek: Responded with H-7, H-2, - H-4, H-9 (32 men)

At 4:50 p.m. Harrods Creek received an alarm to 6405 Regal Road, Quad 4 responded with three fireman on a resuscitation run, electric power failure in the area. Lt. John Keaney called in that a tornado had touched down at Lime Kiln Lane and I-71, that buildings in the area were heavily damaged, roofs off, trees and electric wires blocking the streets. At this transmission Harrods Creek's remaining units responded.

H-2 pumper and H-9 rescue truck responded via Lime Kiln Lane, H-7 pumper via US 42. At first sighting the holocaust at I-71 and Lime Kiln Lane, Captain Dickey called for back-up assistance from Lyndon and St. Matthews fire departments. Captain James Murphy surveying the damaged area, immediately called County Alarm and requested assistance from all Fire Departments on the East band and any units the Louisville Fire Department could send.

A command post was established at Lime Kiln Lane and US 42. County Alarm was informed of this command post and was to relay this information to the in-coming fire departments. Upon arrival these units were told to park there apparatus and take forcible entry tools into the area and check the houses for trapped victims.

H-2 pumper was parked at I-71 and Lime Kiln Lane, H-9 rescue truck at command post, all forcible entry tools and first aid equipment was carried into area.

H-4 quad continued on to 6405 Regal Road and stabilized the the situation there, setting up a generator and leaving a man in charge (Lt. Alex Martin). The quad then came to the command post.

Personnel began checking the damaged houses for trapped victims. The area's covered were Lime Kiln Lane, US 42, Glenwood Road, Harwood Road, Winthrop Lane, Glenview Ave., Stannys Drive and Linwood Circle. After the initial search the information conveyed to us by the occupants reasonably assured us that all the people in this area were accounted for. There was one fatality (heart attack); mouth to mouth, heart massage and oxygen were administered in an unsuccessful attempt to revive him. A doctor pronounced him dead and the county police removed him from the area. Several people were assisted from the damaged homes, some with minor injuries, by the fireman and Captain Dickey suggested that Glenview East (apartment complex) be used as a refugee center.

Harrods Creek Fire Department Operational Study & Report

Upon request from the command post, a second inspection of the area was begun to verify that all gas and electricity were secure in the damaged area. Chain saws and H-9 (rescue truck with wench) were used to help clear the streets.

Chief Jack Dayton and Captain James Murphy were stationed at the command post to assign equipment and personnel to needed locations. A map of the area was used to guarantee all sections of the disaster areas were properly covered, and all streets were being cleared. During this time County Police were called several times for traffic control, a call for the National Guard was issued and several calls to the utility companies (gas & electric) were made.

At 8:30 p.m. the command post was moved into the disaster area, Lime Kiln Lane and Glenwood Road. Chief Dayton, Asst. Chief Tabler, Captain Dickey and Captain Murphy then toured the areas to determine what action should be taken by the Harrods Creek Fire Department for the remainder of the night. These Officers all agree that the area should be evacuated, but could not get the assistance from the proper authorities.

Because all telephone lines were down in vicinity, the home owners could not report a fire should one occur, realizing this, a portable radio was left with the County Police, making it possible to report any fire directly to county alarm. Due to low water pressure in the area, a water tanker (H-12) was stationed at H2 base for the remainder of the night.

Because of the danger and possible fire hazards, Harrods Creek Fire Department kept two complete crews on stand-by at H2 base for the rest of the night.

Jeffersontown Fire Department

Responded to Harrods Creek at approximately 4:59 p.m. with pumper and ten fireman. After reporting to the command post, they were sent to Glenview and Harwood to check for gas leaks and cut off water in the houses.

Relieved at 8:57 p.m.

Middletown Fire Department

Responded to Harrods Creek with Squad #1 and Engine #2.

Upon arrival was assigned to Glenview and Harwood area for search and rescue. Shutting off gas and water in this section.

Engine # 2 remained at the command post with a crew from Fee Wee Valley fire department to respond to other emergencies in the Harrods Creek fire district, later Engine # 2 was sent to Glenview and Wynnewood Circle to check area.

Captain Jim Crask used a bull dozer to clear street of debris, trees, roof tops and etc. on Harwood.

At approximately 7:30 p.m. Asst. Chief Brooks and eight fireman came to relieve the Middletown fireman, at 8:30 p.m. Middletown units were relieved.

The command post received a call from Chief Martin, informing Captain Murphy that Middletown had a 10 KW mobil power unit which was available. This unit was set up at Glenwood and Lime Kiln Lane. All Middletown units were relieved at 11:15 p.m.

Harrods Creek Fire Department Operational Study & Report

St. Matthews Fire Department:

Responded with S-1 pumper, Captain Al Ring and four fireman to US 42 and Lime Kiln Lane. (This unit was unaware of a command post). Lyndon instructed this unit to search the houses on Harwood Road.

Captain Ring ordered all the rescue and forcible entry tools to be taken with them. Captain Ring found a doctor enroute and sent him with a fireman to give aid to an injured girl.

The houses on Harwood and Lime Kiln Lane between Harwood and US 42 were checked for gas leaks and trapped occupants. There was a large group of older residences milling around and Captain Ring assisted in moving them out of the damaged area.

Captain Ring then came to the command post and was assigned to 2210 Glenview on stand-by in case of fire in that area.

McMahan Fire Department:

Responded with (Mac.#7 - Rescue Unit - four fireman) (Chief O'Leary responded in pick-up truck) (Mac #1 with seven fireman)

When alert was sounded all rescue equipment, forcible entry tools were put on Mac # 7. When Harrods Creek requested assistance, the units responded to US 42 and Lime Kiln Lane. Upon arrival first aid was administered to victim with cut hand.

McMahan then proceeded to Northfield Drive and met Northfield policeman who instructed them to go to Stannye Drive. Upon arrival at Stannye they began checking houses for trapped persons. Word was received of an injured child (Mary Hamilton) on Northfield in a cast from her hips down. Assisted by a doctor the child was examined. The girl and an older man were removed to Suburban Hospital in Rescue # 7.

Continued checking dwellings on Stannye Drive, Jenness Court, Keewood Court, Stannye Court and Northfield Court cutting off gas and water and assisting home owners in the area.

McMahan was relieved at approximately 9:30 p.m.

Worthington Fire Department:

Chief Haunz and two firemen (daymen) responded to US 42 and Lime Kiln Lane (command post), went into area with forcible entry tools, checking houses on Glenwood Road and Harwood. Convinced the area was being properly searched they went to Northfield Court to assist in that area.

Word was received that Worthington's district had also been hit by the tornado. After informing Captain Murphy of this, the men from Worthington left to assist in this area.

Chief Haunz returned to the command post later in the evening and reported that Harbour Manor subdivision had also been hit, and his department had taken care of this area for Harrods Creek.

Harrods Creek Fire Department Operational Study & Report

Lyndon Fire Department:

When requested for a back-up Lyndon responded with L-3 (pumper) and L-5 (quad). These units went to US 42 and Lime Kiln Lane.

Upon arrival, fireman from these units went toward Glenwood Road, checked the occupants of a farm house and determined there were no injuries. They then made a cursory check of the houses in the 2700 block of Lime Kiln Lane and found the occupants were OK.

The next check was in the 6400 block of Glenwood Road, a door to door canvas was made to account for the occupants. All but one house was cleared, neighbors reported that there was a woman and boy unaccounted for. A thorough search was made of the house, garage and a buried car. This took between 30 - 45 minutes. Later one of the neighbors reported that the woman and boy were located at a home several blocks away. Water was turned off at several houses. The next check was made in the 6300 block of Linewood Circle.

At this point Lyndon was requested by radio to return to the command post, and was sent to the Northfield Nursing home on Hunting Road on a reported gas leak, no leak was found, personnel at the home said they had reported over-heating of the auxiliary motor-generator set.

Lyndon returned to the command post and stood-by for further assignments. While waiting they assisted with the clearing of trees on Lime Kiln Lane.

Harrods Creek Fire Department Operational Study & Report

10. Communications:

Considering only one channel on the fire radio, communications were not too bad. The command post usually received information asked for and County Alarm answered requests immediately.

11. Injuries:

Firemen - none reported

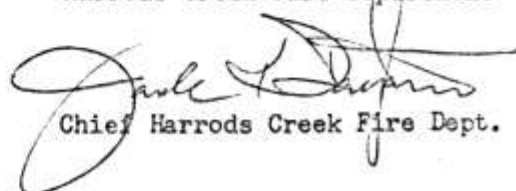
12. Conclusions:

- A. The first arriving units were faced with a serious problem. The initial actions of first arriving units were timely and correct. They called for help immediately.
- B. Despite the fact that no emergency disaster plan for the Fire Departments in Jefferson County exist, the operations went rather smoothly. All departments worked well together and a critical situation was handled successfully.
- C. The over-all coverage of the tornado area was good.
(see maps)

13. Recommendations:

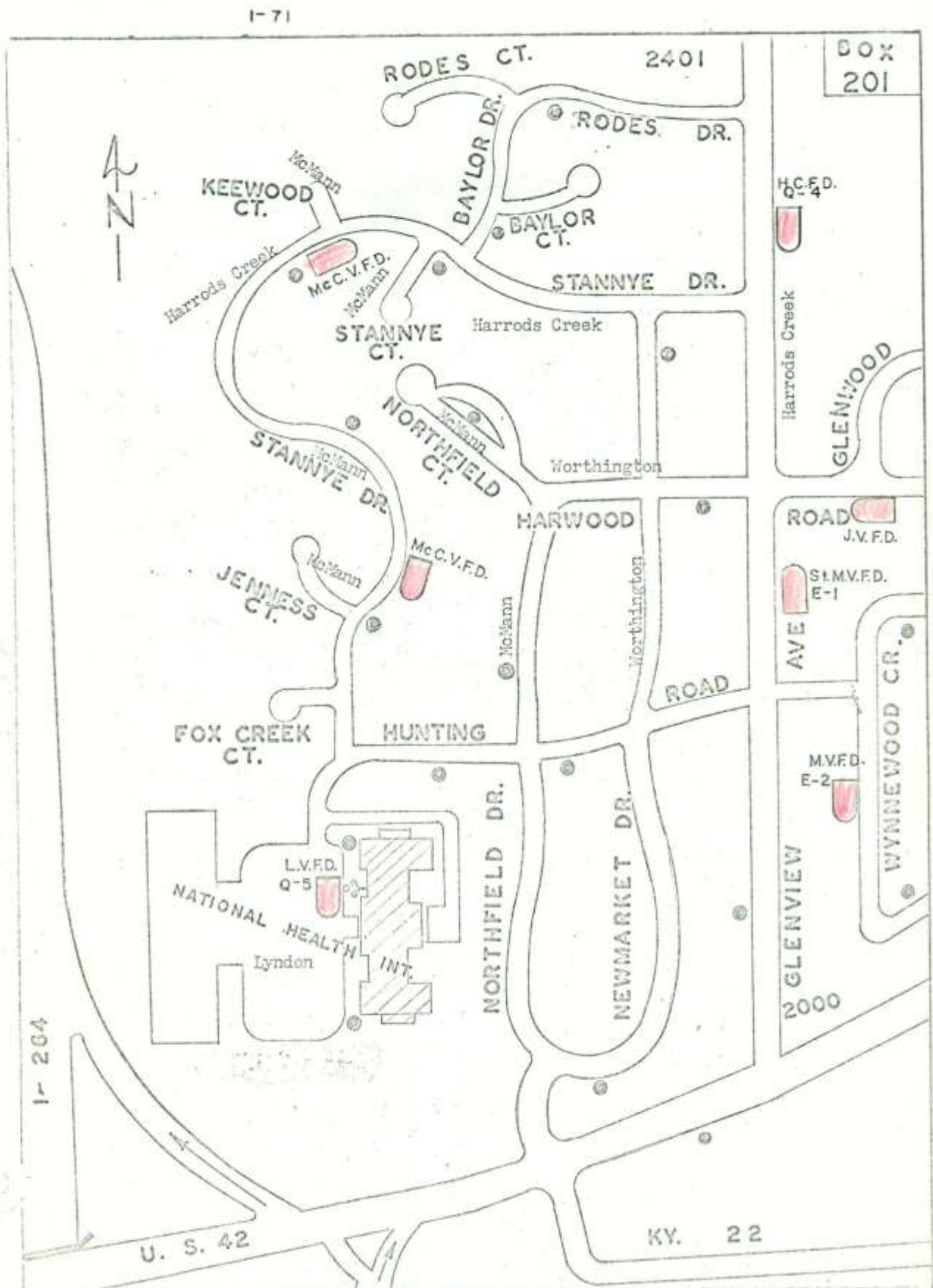
- A. That all County Fire Chiefs critique this operation.
- B. Multi-channel radios for county alarms.
- C. That a training program be initiated involving mutual aid operations on a county wide basis.
- D. That a disaster plan be developed to unite the agencies necessary to cope with: major fires, floods, tornadoes, civil disorders and other such disasters.
- E. That we officially express our admiration and appreciation to the county fire departments and other agencies for the efficient manner in which they came to our aid.

Respectfully
Captain James H. Murphy
Harrods Creek Fire Department


Chief Harrods Creek Fire Dept.

The map shows a network of streets including Limekiln Cr., Glenwood Rd., Harrods Creek, and U.S. 42. Residential areas are marked with house numbers and street names like Lyndon, Harrods Creek, and Glenwood. Commercial and public areas include the Manor Shopping Center, Ballard School, and the Lyndon Fire District. A north arrow is located in the bottom right corner.

Harrods Creek Fire Department Operational Study & Report



1974 Fire/Rescue Disaster Operating Plan

The following is the disaster operations plan put together by Firefighters Inc. after the Tornado. At this time 2001, I do not remember how far this plan went in its adoption. I know myself and many people spent a awfully lot of time and effort putting it together so it would be adopted.

FIRE/RESCUE DISASTER OPERATIONS PLAN

The Disaster Plan is intended to provide a single basic operational plan which may be expanded to meet any disaster situation regardless of whether the cause is manmade, natural forces, or an enemy attack. The basic plan incorporates the following:

1. Provisions for a systematic build up of coordination, supporting services and command capability as they are related to the need, or potential need, during periods of major emergencies.
2. Retention of local operational command in the area where an emergency exists until such time as the emergency has extended or threatens to extend beyond the jurisdiction of a local department.
3. Provision for providing supporting service and coordination to the local departments during emergencies without unnecessary central command.
4. Utilization of existing fire/rescue officers who are most familiar with the problems and are most qualified to cope with them.
5. A disaster organization to make the fire/rescue service as self-supporting as possible, relying to a minimum of support service from outside agencies.
6. A training and planning guideline for local departments which will assist in increasing their readiness to meet any situation.

This plan cannot succeed unless the people within work together for its survival and success, and never lose sight of the objective or purpose. Anytime the people come to feel that they do not know and understand what is going on, the plan is in danger of failing.

ORGANIZATION CHART

COUNTY EXECUTIVE

LOCAL FIRE DEPARTMENT CHIEF

FIRE/RESCUE DISASTER CO-COORDINATOR

COMMUNICATION OFFICER

SUPPLY OFFICER

WATER SUPPLY OFFICER

SAFETY OFFICER

MEDICAL OFFICER

There is no particular reason for having all these staff positions always filled during an emergency. The scope and nature of the emergency will dictate what and who is needed.

FIRE/RESCUE DISASTER CO-COORDINATOR

A senior fire officer recommended by the Jefferson County Fire Chiefs and appointed by the Jefferson County Executive reporting directly to the County Executive.

This Coordinators responsibility is to establish and maintain a comprehensive operational plan for disaster operation in Jefferson County, and to assume operational command of the fire/rescue service when so ordered by the Jefferson County Executive.

DUTIES

1. Establish and maintain liaison with cooperating agencies including Civil Defense, police, etc.
2. Report to the Jefferson County Executive on the operational status of the County fire/rescue services for disaster operations, and submit recommendations thereon.
3. Keep County Executive informed of emergency situation and report operational readiness.
4. Determine mutual aid requirements to and from other jurisdictions of Jefferson County.
5. Debrief and critique subordinates.
6. Prepare a complete report on activities and personnel and submit to County Executive.

1974 Fire/Rescue Disaster Operating Plan

FIRE DEPARTMENT CHIEF

Reports to Fire/Rescue Coordinator at the command post and informs him of the actions taken by his department. Gives his recommendations of the actions needed to be taken.

The Fire Chief or officer in charge should direct the overall operations, coordinate the activities of all personnel and equipment. Should do this through an established chain of command.

COMMUNICATIONS OFFICER

Reports to command post and is responsible for the proper operations of all radio frequencies and telephone circuits.

Establish and maintain a list of the individuals to be notified upon the institution of the Fire/Rescue Disaster Plan. Maintain a continual program of training operators.

Establish liaison with communications division of repair and telephone equipment at field and main command post.

SUPPLY OFFICER

Reports directly to Fire/Rescue Coordinator at command post. Responsible for supplying everything to emergency scene except water for fire fighting. He must know how and where to get whatever is needed.

- A. Fire department equipment available.
- B. Gasoline and diesel fuel
- C. Specialized equipment
- D. Food.

WATER SUPPLY OFFICER

Reports to Fire/Rescue Coordinator at command post.

His responsibility to train several personnel in water supply matters. Keep officers in charge informed of any water problems. Should have maps showing sizes of mains, source of supply and storage. Works with the Water Company and have a complete list of available equipment and capabilities.

SAFETY OFFICER

Reports to Fire/Rescue Coordinator at command post.

His job is the safety of all persons working in and around the emergency area. Will make recommendations on when and how to evacuate areas. Have a thorough knowledge of chemicals, explosives and toxic gases. Act as a liaison for utility companies in disarming power lines, natural gas, etc. Should keep a quick reference system of all pertinent information.

MEDICAL OFFICER

Reports to the Safety Officer at the command post.

Should be trained to handle all medical operations.

- A. First aid of injured.
- B. Care and organization of rescued.
- C. Transportation of the injured and dead.
- D. Keep records of injuries and fatalities.
- E. Arrange for a temporary morgue.

Plans for a disaster should include setting up a command post, preferably with a well—equipped communication van, where specific duties may be delegated, contact may be maintained with all parts of the area's and with the fire alarm office, necessary relief of men can be made, rescue and first aid teams can be coordinated, crews can be fed, liaison can be maintained with the police, water and building departments and various utilities, provisions can be made for refueling apparatus and provisions can be made for the newspaper, radio and television.

All agencies should report to the command post for instructions.

COMMAND POST

When selecting sites:

- A. Provisions should be made for parking large number of apparatus.
- B. Should have a commander responsible for operations, insuring accurate records of all activities for future analysis.
- C. Admission to command post should be restricted only to authorized personnel.

Schools are good sites for command post.

1974 Fire/Rescue Disaster Operating Plan

Should be out of area, but within response distance.

Be provided written documentation of authorities and responsibilities of key participants in the plan.

Command post should be plainly marked for the benefit of incoming companies.

(List of materials to be carried in command post van)

A. Phone numbers and address:

1. All municipal, county, city and state police.
2. All ambulance services, with number of vehicles and day and night manpower.
3. Hospitals and medical centers.
4. Civil Defense
5. All utilities, gas, water, telephone, power.
6. Transportation companies.
7. Staff officers.
8. All mutual aid fire departments, with equipment and manpower for both day and night.
9. All signals and codes used in transmissions by various departments.
10. Maps of the county showing the protection areas for each department, also on the map show the location of fire stations, hospitals, schools.

B. Radio Equipment:

1. Four channel. radio's for fire departments
2. C B radio to contact local heavy equipment apparatus.
5. Civil. defense frequency
4. A heavy duty generator on a trailer.

C. A status map showing the commitment of forces to the command post and the remaining protection of the area should also be provided.

AGENCIES THAT SHOULD BE INCLUDED IN OVERALL PLAN

1. Police Department
2. State police
3. National Guard — U.S. Army
4. Civil Defense
5. Public Works
6. Water Company
7. Electric Company
8. Telephone Company
9. Gas compare
10. Heavy equipment contractors
11. Hospitals
12. Red Cross

JOB DISCRPTION

1. To immediately set up his office, and hire a secretary.
2. Have a radio installed in car, and portable radio.
3. To start setting this plan.
4. To get with each department and see that they fill their chain of command, and meet with these people.
5. To train each department chain of command, and keep them trained. To supply them with all the information they need.
6. To meet with all people who will work out of the center and set up plans with them.
7. To help acquire equipment necessary for disasters.
8. To set up system with civil defense for buying salvage equipment.
9. To have at his disposal and to furnish to his chain commands, all lists of equipment . where is, how to get it, etc.
10. To train and help departments train for disasters, set up schools, coordinate training with all other rescue groups.
11. To work on map system for his use, and supply to departments.
12. To assign and implement back up system for himself.
13. To attend all Chiefs meetings, and Fire Freighters, Inc. meetings.
14. To help departments, with radio codes, number systems, training systems, back up systems, getting manpower, etc.
15. To be able to offer Chiefs help in the future in areas such as plans for hydrant inspection, building inspection, back up systems, more and better overall training systems, coordinate with state and other agencies that can help in training and operations.
16. To work with representatives from the Federal Government for revenue shearing.

LOCATION OF OFFICE

The office for this person should be as close to the Civil Defense operations room as possible.

1974 Fire/Rescue Disaster Operating Plan

SALARY, EXPENSES

His salary should be in the range of what the city pays a Major to Lt. Colonel. \$18,000 to \$23,000.00.

He should have a furnished office, with equipment, secretary, and a budget for expenses.

His car should be radio equipped.

His should be supplied with portable two way radio.

BACK UP SYSTEM

This man should design a back up system for himself. He will be sick, vacation, so on, This should probably be two or three high ranking volunteers, that he personally trains, and they will have the authority to take his place.

OPERATIONS COMMITTEE

It is recommended that the Chiefs, each year select a committee of 3 to five men, one being chairman. Their job will be to hire and fire this man with the Judge's approval, and that watch this operation at all times. A written report should be given to them from this man each month, describing in detail what has been done, future plans, etc. Also this man reports at each Chiefs and Firefighters, Inc. Meeting.

QUALIFICATIONS

Familiar with Jefferson County area.

Firefighting experience.

Managing experience.

Communication experience.

Training and instructor experience.

Leadership ability.

Professional ability.

1974 Fire/Rescue Disaster Operating Plan

FIREFIGHTERS, INC.

Al Ring, Pres.
25 Westport Terrace 40207
R. 896-4271 B. 896-9120

COUNTY ALARM COMMITTEE

Robert H. Saddle, Chmn.
11308 Taylorsville Road 40299
R. 267-6598

FIRE PROT. DIST. ASSN. of JEFF. CO. INC.

Samuel J. Cox III, Pres.
7313 Lorenzo Lane 40291
R. 239-9310

JEFF. CO. FIRE CHIEFS ASSN.

Harold Ackins, Pres.
5706 Marigold Court 40213
R. 968-6568 B. 897-6521

INSURANCE SERVICES OFFICE of KY.

Anthony F. Gray
940 Starks Bldg.
455 So. 4th Street 40202
R. B. 587-1343

STATE FIRE MARSHALL

Warren Southworth
3rd fl. Capitol Plaza Towers 40601
B. 564-3626 (587-7511)

John Thomas - Fire Prev. Jeff. Co.
R. 458-2191
Day - 581-6111 give message to Edna

JEFF. CO. FIRE PROTECTION PROGRAM

Dennis M. Clare, Director
1614 Kentucky Home Life Bldg.
239 So. 5th Street 40202
R. 459-6282 B. 582-3891

COUNTY ALARM

Wm. J. Vollmer, Supt. Communications
Rm. 38 City Hall Annex
611 W. Jefferson Street 40202
R. B. 585-5351

JEFF. CO. FIRE SAFETY OFFICER

Ron Riddle
301 Fiscal Court Building
527 Court Place 40202
R. B. 581-5950

TAX OFFICE

Terry Sharp
301 Fiscal Court Building
527 Court Place 40202
R. 896-1181 B. 581-6197

JEFF. CO. CIVIL DEFENSE

E. E. DuRand, Acting Dir.
Rm. 113 City Hall
601 W. Jefferson Street 40202
R. 241-8930 B. 583-4230

JEFF. CO. REG. VOC. EDUCATION PROG.

Wm S. McClain, Fireman Train. Inst.
111 E. Kentucky Street
B. 584-7321

Air Pollution Control	635-7471	Jefferson County Sheriff	584-0221
Cnemtrac	584-1231	Jeff. Co. Works Dept.	581-5810
Crisis Center	589-4313	Kentucky State Police	1-765-6118
F. B. I.	583-3941	Lou. Gas & Elec.	582-3511
Ford-Floyd Wrecker Service	636-3423	Louisville Police	581-3411
Forest Rangers Station	363-4363	Louisville Water Co.	582-2431
General Hospital	589-4321	Lou. & Jeff. Co. Air Bd.	
Health Dept.	584-5281	Bowman Field	458-1575
		Standiford Field	368-6524
Holsclaw Forest Fire Tower	368-2715	Nat'l Weather Service	363-9655
Jefferson County Police	582-2281	Poison Control	582-1831
Jefferson Co. River Patrol	583-2094	Simpsonville Wrecker Svc.	451-1870

1974 Fire/Rescue Disaster Operating Plan

<u>DEPARTMENT</u>	<u>CHIEF</u>	<u>TELEPHONE</u>	<u>STATION ADDRESS</u>	<u>TELE.</u>	<u>STATION ADDRESS</u>	<u>TELE.</u>
Black Mud	Frank Harden 4910 Lagona Dr. 40219	R 969-4297	1714 Rangeland Road	969-0521		
Buechel	Garland Miller 6801 Watterson Tr. 40291	R 239-3958 B 454-3883	2206 Bradford Drive	458-9382		
Camp Taylor	Harold F. Adkins 5706 Merigold Ct. 40713	R 968-6562 B 837-6521	1441 Lincoln Avenue	452-6665		
Dixie Suburban	Charles C. Teague Jr. 4705 Lynn Lea Rd. 40216	R 447-4440	1904 Park Road	448-6711		
Eastwood	Wayne Evans 207 Gilliland Rd. 40018	R 245-4572	U.S. 60 & Gilliland Rd.	245-9950		
Edgewood	Dave Tierney 5515 Norton 40713	R 969-0942	1125 Orchard Avenue	964-6011		
Fairdale	Jim Longacre 10204 W. Manslick Rd. 40116	R 368-9231	W. Manslick Road	365-0122		
Fern Creek	T. L. Cox 6805 Watterson Tr. 40291	R 239-3601	6126 Barstow Road	239-7075	Yielda Hills Dr. 239-7075	
Harrods Creek	Jack Dayton 5209 Union St. 40222	R 426-1366	6417 Upper River Road	729-1451	4306 Line Court Dr. 328-1575	
Highview	Joe Stark 6007 Reuland Church Rd. 40291	R 239-3120 B 964-9492	7308 Feganshew Lane	339-3553	Outer Loop 964-5314	
Jeffersonstown	Robert A. Laddie 11302 Taylorsville Rd. 40739	R 257-0598	10540 Watterson Tr.	267-7300		
Lake Brearland	William Cooper 3220 Stegner Ave. 40216	R 447-1656	4623 Dale Run Road	447-6326	4812 Camp Ground Rd 447-0240	
Lydon	Donald White 9505 Holston Road 40216	R 426-1686 B 634-9411	U125 Violet Avenue St. 205	424-7474	8416 Chestnut Road 424-1544	
McNair	Paul L. O'Leary 3131 Hunsinger Blvd. 40220	R 454-3461	3812 Hunsinger Lane	455-4755		
Middletown	Robert Martin 11604 Fernick Ln. 40243	R 245-0366 B 744-4104	11704 Shelbyville Road	245-7555		
Oakdale	Kenneth B. Akridge 9703 Caven Ave. 40226	R 966-3404	7111 Blue Lick Road	964-2816	10508 Preston Hwy. 968-1066	
Pekee Valley	Norman Turner 138 Rellington Rd. 40014	R 241-4151	LaGrange Road	241-8343		
Pleasure Ridge	R. K. Back 12315 Starlight Way 40272	R 937-7123	4502 Kennel Lane	935-4444	5417 Valley Sta. RJ. 937-5149	
St. Matthews	John Monahan Jr. 3909 Elmwood 40207	R 893-7202	6114 Lyndon Ave.	893-7825		
Shively	Bernard J. Wether 2120 West Ln. 40216	R 442-3737 B 447-2582	3930 Park Drive	448-7212		
South Dixie	Donald E. Smith 6624 Lincolnton Rd. 40272	R 935-4363	6411 Chism Road	937-1655	6501 Beckham Ln	
South Oldham	Milton C. Stoeck Hwy. 22 40014	R 241-8350 B 241-8442	LaGrange Road	241-4545		
Worthington	Carl F. Peunz Jr. 5701 Faurz Ln. St. 1 40222	R 241-4421	4700 Murphy Lane	241-5365	8412 Brownstone Rd. 402-2711	

County Fire Apparatus Numbering System

October 1, 1975: The new apparatus numbering system went into use on October 1, 1975, adopted immediately by all districts except Lyndon, Fairdale, Pleasure Ridge Park and South Dixie. These districts all came on board with it by the early 1980's. The system remains in use today with very little change from its original form. There are just a few less fire districts, due to mergers in the early 2000's. Department's no longer in existence are: Black Mudd "60"; Edgewood "44" (both merged into Okolona Fire District); South Dixie "35" (merged into Pleasure Ridge Park Fire District). This was all a result of Firefighter's Inc., after the 1974 Tornado and its dedication to have better communication for major disasters.

10-SERIES CODE

*10-1	CLEAR THE AIR
10-2	TRANSMISSION IS CLEAR
10-3	CANCEL YOUR RUN
10-4	MESSAGE RECEIVED
10-5	FOOD
*10-6	RESPONDING
*10-7	ARRIVED - OUT OF SERVICE
*10-8	IN SERVICE
10-9	REPEAT MESSAGE
10-10	MECHANICALLY OUT OF SERVICE
10-17	EMERGENCY
10-20	LOCATION
10-21	CALL BY PHONE
10-22	REPORT IN PERSON
10-23	CALL CHIEF & ASST. CHIEF
10-40	HOSPITAL RUN
10-49	NON-INJURY ACCIDENT
10-50	INJURY ACCIDENT
10-52	POLICE FOR TRAFFIC
10-54	NEED INVESTIGATOR (ARSON-CORDONER, ETC.)
10-82	INJURED PERSON (FIREMAN-ADULT-CHILD, ETC.)
10-100	BY AUTHORITY OF CHIEF

CODE 1 RESPONSE
NORMAL DRIVING PROCEDURE

CODE 2 RESPONSE
WARNING LIGHTS ONLY


CODE 3 RESPONSE
WARNING LIGHTS & SIREN

*Must Be Used When Transmitting With County Alarm Office

**COUNTY
FIRE DEPARTMENT**

**Four Digit Vehicle
Numbering & 10-Series Codes**

Compliments of



- Camelot Shopping Center
- 129 St. Matthews Ave.
- 8-Mile Shopping Center
- Brownsboro Rd. Shopping Center
- Middletown Plaza Shopping Center
- 3301 Barbour Lane
- 4104 Murphy Lane

FIRE DEPT. NUMBERS
(Denoted By 1st & 2nd Digits)

EAST BAND - 154.25
(Base Stations Designated By Department Name)

*ANCHORAGE	6 6
EASTWOOD	7 7
HARRODS CREEK	1 2
JEFFERSONTOWN	3 3
LYNDON	1 6
McMAHAN CENTER	5 5
MIDDLETOWN	9 9
*PEWEE VALLEY	8 4
ST. MATTHEWS	8 8
WORTHINGTON	1 8

WEST BAND - 154.37
(Base Stations Designated By Department Name)

BLACK MUDD	6 0
BUECHEL	3 7
CAMP TAYLOR	5 0
DIXIE SUBURBAN	3 0
EDGEWOOD	4 4
FAIRDALE (Not Using Four Digit Numbers Marking With Two Digit)	
FERN CREEK	7 1
HIGH VIEW	1 1
LAKE DREAMLAND	4 0
OKOLONA	8 0
*PLEASURE RIDGE PARK STA. 1	2 1
NOTE: Also Use These Digit Numbers On Special Band - 154.15	
STA. 2	2 2
STA. 3	2 3
STA. 4	2 4
STA. 5	2 5
*SHIVELY (Not Using Four Digit Numbers Marking With Two Digit)	
SOUTH DIXIE	3 5
*ZONETON (Also Use Special Band - 154.325)	8 1

*Not Dispatched By County Alarm Office

FOUR DIGIT NUMBER SYSTEM

1st & 2nd DIGITS - FIRE DEPT.

3rd DIGIT - TYPE OF VEHICLE

4th DIGIT - VEHICLE NUMBER

NOTE: These Digit Numbers Reserved For Supporting Agencies Such As County Alarm (2001) & Disaster Coordination (9002)

TYPE OF VEHICLE
(Denoted By 3rd Digit)

0	*- CHIEF OFFICERS
1	- MISC. PERSONNEL
2	- PUMPERS UP TO & INCLUDING 1,000 G.P.M.
3	- PUMPERS OVER 1,000 G.P.M.
4	- QUADS & SEMI QUADS
5	- QUINTS, AERIALS, SNORKELS, ETC.
6	- TANKERS
7	- BRUSH
8	- SQUADS & RESCUE
9	- SERVICE & UTILITY

*3rd & 4th DIGITS WILL ALWAYS BE AS FOLLOWS:

0 1	- CHIEF OF FIRE DEPT.
0 9	- FLOATING COMMANDER

VEHICLE NUMBER
(Denoted By 4th Digit)

- ANY NUMBER DESIRED BY FIRE DEPT. TO DESIGNATE THEIR VEHICLE.

NOTE: When transmitting say "UNIT" then the four digit number. Portable radios used in conjunction with apparatus will carry the apparatus number plus letter A, B, etc. When displaying numbers on vehicles use yellow numbers on black background reading left to right or top to bottom from the rear showing forward direction of travel.

Dick Gilbert—WHAS Radio —reporting of Tornado

Courtesy http://www.april31974.com/dick_gilbert_whas_april_3_1974.htm



Dick Gilbert- WHAS Traffic Reporter

On April 3, 1974, in Louisville, Kentucky a helicopter traffic pilot turned from mild-mannered reporter to a hero as he tracked an F4 tornado demolishing parts of Louisville. Dick Gilbert is credited with saving countless lives by warning residents of the path of the tornado during an incredible live radio broadcast from his helicopter. The entire transcript of the program follows. Special thanks to WHAS, David Jennings and Mark Travis for their help in making this page a possibility. If you use any text from this broadcast, please make sure you give credit to WHAS and Dick Gilbert.

[Approximately 4:15pm, April 3, 1974]

John Burke: Dave Reeves just handed me another report: 6 miles WSW of Brandenburg, close to Midway, a
Glen Bastin: John, could you give us quickly some safety rules, people in their homes, what they should do?

John Burke: At this time, the best thing to do . . . get your portable radio, so you can stay tuned to the radio station, head for the basement, SW corner of the basement. If possible, get under a workbench or some sturdy piece of furniture. If you have no basement, you head for an inside room which has walls that are not too far apart, hopefully with enough support above you that nothing will come down on top of you. Those in mobile homes and whatnot hopefully can find some shelter outside of the mobile home - mobile homes are very vulnerable to this type activity. I don't want to get people overly concerned; I know this excites people to a great extent, but nevertheless, they should take these reasonable precautions and not get overly excited, because they will hear it coming - if it did come in their direction. The noise associated with these is very loud, so they should hear the noise associated with these storms. But, by all means, I would certainly suggest heading for shelter, which, as I say, in a basement or an inside room, during the next 45 minutes to an hour. And, take the radio along so you can stay on top of this.

Jeff Douglas: All right, Traffic Tracker Gilbert, it's a wild afternoon, and you are a service of Beef & Boards dinner theater, Simpsonville, where you dine in elegance and see a Broadway show for one low price. Dick..

Dick Gilbert: Well, we do have a pretty wild and rugged weather picture on our hands here, so be prepared for it as you are driving. The pavements are wet now throughout the driving area. I haven't made it out to the extreme northeast corner yet, but, the rest of the picture has wet pavements all the way, lightning and gusty winds, and sprinkles and bursts and gusts of rain here and there. So, watch it, and traffic is starting to slow down as you might expect it would under these conditions.

Westbound on the Watterson, we have very heavy traffic it looks like a morning situation. Starting back at Taylor Boulevard, I'm sorry, at Taylorsville Road, and it's running very slowly and heavily to the top of the hill as we get over near Poplar Level. Eastbound, we're tightening up back at Taylor Boulevard, and running heavily all the way out to Durrett Lane. The southwest. . . I couldn't get out to into the extreme southwest on Dixie Highway and out in the Pleasure Ridge Park area. The weather looked a little bit suspicious out there, so you folks out there will have to be on your own for a little bit. But the Outer Loop around the Kentucky Turnpike looked pretty good, and Preston is still doing a nice job - no delays over a block long at any of the lights there.

Dick Gilbert—WHAS Radio —reporting of Tornado

Southbound on I-65, starting to slow down now at the horse barns, running a bit heavily out to the Watterson interchange. Drive carefully, Dick Gilbert, Skywatch 84.

Jeff Douglas: All right, a tornado warning in *effect* until 5:00 for Metro Louisville tonight. We will continue with music Good and Gold. We will, of course interrupt for all important weather information.

Jeff Douglas: A lot of people leaving their work now, getting into cars. And, let me briefly review the weather situation - there are severe thunderstorm warnings for a good portion of this area, including metro Louisville and southern Indiana. But, more importantly, now, we have a tornado warning which includes all of Metro Louisville and surrounding areas. This is a warning; it will be in *effect* until 5:00 tonight, so be on the lookout, be on guard. We reviewed the rules, the suggestions for what you should do if you should spot a tornado. It might be a good idea to keep a lookout. There have been numerous, numerous sightings in and around the area of tornadoes. Not trying to alarm anyone, but we want you to be aware of the situation and know that, should something happen, you can take cover. Now, we are told that tornadoes make a good deal of noise, so you'll probably hear one if one is around. And, like I said, keep an eye out for tornadoes - at least until 5:00. We'll have updates until then from the Weather Bureau and the Weather Service. Alrighty? OK. We'll continue with music from WHAS and *Jeff Douglas*, it's 4:25.

Chuck Patyk: Chuck Patyk, WHAS news. County police report a tornado sighted at Terry and Greenwood in the southwest section of Jefferson County. They say the tornado is moving in a path directly north. At this time, people in that area should take cover immediately. Again, Jefferson County police report a tornado sighted at Terry and Greenwood, in southwest Jefferson County. People should take cover at this time. Take a portable radio with you if you can, and keep posted on the weather. We might, at this point, while we have this tornado sighted in Metro Louisville, go over some of the safety rules that you can take at this point to protect yourself from any damage.

In a home, move to a basement, if possible. The southwest corner is probably the safest - offers the greatest protection. In a factory, move to an interior section, which offers the greatest protection. If you're in open country, as you might be in the southwest part of the county, move away from the tornado if you sight it, at a path at right angles to the tornado. If there's no time to escape from the winds, lie flat in the nearest depression, such as a ditch or ravine.

Jeff Douglas: Let's see what it looks like from the air with our Traffic Tracker Dick Gilbert - he is a service of Louisville Trust Bank. Dick...

Dick Gilbert: Well, I'm out over Oxmoor shopping center now, at the Watterson and Shelbyville Road, and checking out the eastern quadrant here. Flashes of lightning now and then, and there's light rain on the bubble. All of the pavements are wet. Traffic is very heavy, and it has slowed down significantly, as you might expect under these conditions. The Watterson, for example, is already very heavy, both east and westbound. Westbound, it looks like a morning situation - we're tightening at Taylorsville Road, and it's running rather slowly westbound all the way over into the Poplar Level area. Let's see here. . . I don't actually physically see any tornado activity at the moment, but it does look highly suspicious down there beyond the Iroquois Park area and out in the southwest. So, that appears to be the area that's affected at the moment.

All in all, I know of no specific accidents and so forth. Wet pavements, strong, gusty winds (I can certainly testify to those!). So, be extra careful, particularly on bridges and overpasses. Dick Gilbert, SkyWatch 84.

Dick Gilbert—WHAS Radio —reporting of Tornado

Jeff Douglas: OK, let's cut in here. Chuck Patyk is here with a phone call. Chuck...

Chuck Patyk: OK, John Burke is on the phone, and he's about to leave the Weather Service. I understand you've got the tornado sighted there?

John Burke: No, I don't see a tornado, but here comes the wind! We're hitting winds up to . . . Good gracious sakes alive!

Chuck Patyk: How high is the windspeed at this time?

John Burke: There's 50 right there. By golly, the whole thing's going! Hear it? I'm going! Goodbye!

Chuck Patyk: John Burke at the National Weather Service office at the airport. Apparently the tornado activity over there at this time. We'll be checking back as soon as he can get back into that area.

Jeff Douglas: What did he mean by 'I'm going!'? It sounded almost like the wind was at the Weather Bureau! Is that what he meant?

Chuck Patyk: John was telling me before we got on that he was going to have to get out of there quick.

Jeff Douglas: Oh, I see. Let me see if I've got this straight before you run off, Chuck. I apparently didn't understand you, and I don't want to, you know, press the point, but I was a little confused. . . was the fact that they were having difficult weather at the Weather Bureau itself?

Chuck Patyk: Definitely. He said he had sighted the high winds, and that it was just a matter of a few moments before he felt there would be a tornado there - and, apparently at this point there is a tornado at the airport. Perhaps Dick Gilbert could check in and tell us what he sees at this point.

Jeff Douglas: Well, OK. Dick, if you're up there in SkyWatch 84, what can you add? (no response)

Jeff Douglas: 4:40, and Bob Johnson has joined us. Bob...

Bob Johnson: Jeff, the city police say that a tornado is moving across the southern part of the city. It was spotted near the Fairgrounds, moving from the south, generally toward the north. They say that it has touched down near the Fairgrounds, and apparently damaged Freedom Hall. We don't have any more details at this time, other than the fact that people in the Louisville area should take cover.

Jeff Douglas: OK... and, on that, our lights in here begin to blink. OK Bob, I appreciate any more that we . . . when you get information, we'll have it right on the air. Let's see if we can contact our Traffic Tracker Dick Gilbert in SkyWatch 84 for a report. Dick...

Dick Gilbert: Yes!

Jeff Douglas: OK, can you tell us, fill us in anything more on what you can see from your vantage point?

Dick Gilbert: Well, it's a spectacular sight. . . the low clouds, very black, low clouds. Let's see. . . at the moment, they're just about over Bowman Field, out at Taylorsville Road area. And, it is swirling around, and it looks like smoke underneath it. There is no real tight, definitive tornado as such - it's still turning at a . . . Yes!

Dick Gilbert—WHAS Radio —reporting of Tornado

There's one now, starting . . . yes, dipping down from the bottom of the cloud. And let's see. . . that will be over in the Highlands, probably along Bardstown Road and somewhere near Eastern Parkway is where I'd guess that one is.

The power transformers have been blowing regularly in the path of this thing - big, large explosions of blue-white light that help to clock it pretty well. Now, it's clearing up very nicely behind it - as a matter of fact, just south of Standiford, it's clear - I can see all of the hills. The Iroquois Park area is just about out of it now. But it is definitely moving up toward the Crescent Hill water tank now, and I'm starting to get some strong - very strong - gusts way out here on Bardstown Road near the GE plant. That's the way it looks to me. Be very, very careful! Dick Gilbert, SkyWatch 84.

Byron Crawford: All right, Jeff, Dave Reeves of the Weather Service is on the phone. Dave, you've seen something?

Dave Reeves: Yes, we've been tracking this tornado on radar, and we just witnessed it pass north of Standiford Field here. It was north of the Fairgrounds. To us, it appeared like it maybe went over the Executive Inn area, but I'm sure it was north of there - and it was moving almost due east. It was quite a black shaft, and you could see debris lifting up in the shaft. So, anyone in eastern Jefferson county and the counties just east of Jefferson should, I would say, take cover at once, if possible.

Byron Crawford: Dave, is there any indication that there is more than one tornado in the vicinity?

Dave Reeves: No, once these echoes get right overhead on our radar, we just see one big spot. And it's quite difficult until they move out away from us - you know, say 10 miles east of us. Then we start picking them up again.

Jeff Douglas: Glen, why don't you just come over here informally - you can't do it on that line. I've got John Burke of the Weather Service on the line here. We'll just make the right connections and we'll be . . .

Glenn Bastin: Yes, John. . .

John Burke: Yes, that storm, we could watch it come right in on the airport here, Glen. There was no funnel in it until it actually got right to the airport, then a funnel developed right in the parking lot, north of the terminal building, and moved on to the east. And, it's moving eastward 45-50 miles per hour. So, this was ten minutes ago, so that's over in the eastern part of Jefferson County now, moving on eastward. However, Glen, we do have another big storm down south of us, headed east, and it's headed in the direction of Mount Washington, another one about the same size. So, for the next hour or so, the Mount Washington area certainly should be on the alert for developments and take all proper precautions, like we were mentioning earlier.

Glen Bastin: OK, now this cloud, this storm that is moving through Jefferson County, does it appear on your radar to be moving out of the heavily populated area?

John Burke: Yes, it's over east of Bowman Field now, and moving on eastward at 45-50 miles per hour. And, as I say, when it went through here, it didn't have a funnel when it came in, but the funnel developed right here in the parking lot. And then it moved on eastward - we could see it move on off to the east. And, that's when I left there before, because I was going to get out of there! I was right next to the window and I was talking to Chuck, and I just thought it was time for me to leave!

Dick Gilbert—WHAS Radio —reporting of Tornado

Glen Bastin: I can't really say that I blame you! The Mount Washington storm, what does it appear right now. . . does it appear to be another severe one?

John Burke: Yes, another one. And on the intensity of the one we had. And, it could very well contain a tornado also.

Jeff Douglas: We'll see if we can do anything with Dick Gilbert here. . . I think he is on another line, checking with. . . well, let's just make sure I've got the right buttons here. Dick Gilbert in SkyWatch 84, can you hear us?

Dick Gilbert: Yes!

Jeff Douglas: There we go!

Dick Gilbert: There we go! I've been talking to the newsroom, Jeff.

I'm right over the Fairgrounds. First of all, let's talk about traffic. . . this tornado touched down right here at the horse barns on the north-south expressway, and it has turned over several cars. And, let's see. . . one, two, three, four, five, six, seven, eight. . . I would say eight automobiles have been blown across the road or turned over. There's an ambulance here working in the road. Traffic northbound is moving and trick- ling through here, one at a time. Southbound, well, yes, the same thing, getting way over on the shoulder.

Now, the wind damage hit the roof of Freedom Hall and it tore three big holes in the roof. Then it moved over on the eastern end of the building and ripped off about a third of the roof here. The horse barns are no more. It totally wiped out the horse barns. All of the mobile homes and trailers behind the Freedom Hall have been completely torn up. And, over by the. . . I think it's the Twilight Drive-In here, we've had about four trailers completely torn apart. There's fire equipment and emergency equipment in there. Now, be very careful on Crittenden Drive - I see more police cars and emergency equipment heading down toward the trailer park there, that's just off the southwest corner. Apparently, this is where the twister first touched down, and this really caused a problem. Avoid that north-south expressway - they can only get one or two cars through it at a time. Try and use some other route. That's the way it looks from up here, Dick Gilbert, SkyWatch 84.

Chuck Patyk: Dick, this is Chuck Patyk. Can you see the storm at this time, from your viewpoint?

Dick Gilbert: No longer, Chuck. The only dark area I see is . . . let's see. I would put that out beyond Indian Hills, on the river, heading toward, say, Harrod's Creek at this moment. I'm looking back now the other direction, looking for this other one you mentioned at Elizabethtown, and it still looks clear down the river there, past West Point. There is a grey area over toward Fort Knox. That's the way it looks now. We're in a kind of a clear area at the moment.

Chuck Patyk: OK. We'll be checking back with you in about five minutes, shortly after 5:00.

Dick Gilbert: I'm trying to work a possible route for you. If you came out 1-71 and went up Zorn Avenue to Brownsboro Road. . . no, that isn't going to work. It's just almost impossible. . . they are letting a few cars drift through, until you get out to 1-71, just east of the Watterson - and that's where it absolutely comes to a complete standstill. I'm looking at 1-64 now - from the downtown area, out past the Big Four bridge, all the way out around the turn and out as far as the tunnel, which is as far as I can see, it's at a standstill. So, 64 is out of the picture. I strongly suggest you stay downtown and keep tuned and see if we can work out some routes here when we get our wits about us. The weather apparently has moderated; I'm heading downtown to pick up one of our photographers here. There seems to be light rain over in the Corydon area. The sun is beginning to peek through now, out in the Iroquois Park area, and, hopefully, our spell of bad weather cells is behind us now.

Dick Gilbert—WHAS Radio —reporting of Tornado

The damage, once again, it started, as far as I've been able to tell, it started at Standiford Field, just at the northwest corner of Standiford Field, and it took a track across the Fairgrounds and Audubon Park, and out into Eastern Parkway and Bardstown Road. It went through the golf course at Cherokee Park. It went between Barret Junior High School and the Baptist Seminary. It hit Stilz, Frankfort, Pennsylvania, Hillcrest, the Crescent Hill Golf Club. It went into Indian Hills and angled right on across to the 1-71/Watterson interchange. That's the way it looks from here, Dick Gilbert, SkyWatch 84.

Dick Gilbert (final report made to the WHAS newsroom): I don't know if you can read me or not. I just landed across the street from you here, to let the photographer out. We've been photographing the damage and they are going to develop these films and run them as soon as possible. Yes, I have just made another pass across the entire area. One thing I have noticed is, that for the most part, the people that are out and surveying the damage and so forth do not appear to be overly depressed - I get all sorts of friendly waves and reactions from them. The emergency equipment is moving into most of the areas. As you just heard, at the Crescent Hill water company, the power transformer right there at the site, at Stilz Avenue and Frankfort, that was crushed, like a giant had stepped on it. So, they will have a power problem at that location. And then further out, in Indian Hills, in the Zachary Taylor monument area, we have a high tension line down on that cross-country line that cuts across there. So, there's a power problem at that point. Telephone poles have been damaged right along the path of the thing, of course. As I mentioned much earlier this afternoon, I could see the path of the tornado not so much by the dark cloud as by the explosions of blue and white light from the transformers as these telephone poles were snapped off.

Once again, the damage starts at Standiford Field, at the Fairgrounds, at the trailer park there by the Twilight Drive-In, and it ran right across Audubon Park, up into the Eastern Parkway area, by Newburg Road. There are a lot of big, I mean really old trees, huge trees, right down across Newburg Road. It's going to take quite a while, I think, to get those things moved, and open up traffic there. The path went right on out then, into Crescent Hill. It passed between Barret Junior High School and the Baptist Seminary on Grinstead Drive. As I said before, it hit Stilz and Frankfort. It hit the south end of Hillcrest and Pennsylvania Avenue - very badly there. Went right across the golf course, into Indian Hills, across Zachary Taylor, and then out across the Watterson and 1-71 interchange, into that new housing development. And then, just east of there, as far as I've been able to tell, that is the extent of the damage at that point.

Now, as you can see, this cut traffic right across the heart of the city. I'm looking at the north-south expressway - southbound, we're still tightening at Hill, and it's bumper-to-bumper out past the Fairgrounds. 1-64 is bumper-to-bumper, through the Cochran Hill tunnel. 1-71 is tightening beyond Zorn, and crawling out into the eastern section. So, you're going to have to pick your way and be very, very careful. And, I strongly suggest you have a full tank of gas, because you're going to spend a lot of time sitting out there in traffic. That's the way it looks to me, Dick Gilbert, SkyWatch 84.

Jeff Douglas: It's just a little after 7:00 - it's one after 7:00 on WHAS Louisville. Give Byron a chance to get something cold down his throat. It was very, very strange sitting here this afternoon, reading all of the reports, not really knowing what was going on, and then, just like a shock, that first report from Traffic Tracker Dick Gilbert, about what he saw. Having had a large, vast experience in covering things like this all over the country, Dick said that this one of the worst he had ever seen. The way he actually traced the tornado that went through Jefferson County, and each stop along the way. . .

Byron Crawford: Yes, Jeff, the help Dick has given us in the past few days has been immeasurable, because from that vantage point, seven or eight hundred feet in the air in the helicopter, he can be of great assistance - not only to us, but to authorities who want to know what's happening with the tornadoes. Of course, he flew over Campbellsburg the other day and gave us a fine report on conditions up there, tracing the path of that tornado. This afternoon, he was actually up while the tornado was cutting that swath through Louisville and Jefferson County. Many thanks go to Dick Gilbert - he'll be up again in the morning.

NOAA and the 1974 Tornado Outbreak



Home

Kentucky

Between 3:40 p.m. CDT April 3 and midnight, at least 26 vicious tornadoes struck Kentucky-- in the worst storm disaster in the State's history. These tornadoes killed 77 persons, injured 1,377, and caused damage estimated at \$110 million. Losses were sustained by 6,625 families, and between 1,800 and 2,000 of the State's farms were damaged to some extent. The tornadoes affected 39 counties within a strip some 150 miles wide extending from north to south through the central part of the State.

The first storm (47) was the most severe. It touched ground 5 miles southwest of Hardinsburg (Breckinridge County) at 3:40 p.m. CDT and 30 minutes later slammed into Brandenburg (Meade County). This tornado, which had an intensity rating of F5 on the Fujita scale and a path 500 yards wide where it tore through Brandenburg, killed 31, including a number of children who apparently were playing outside after school.

Within an hour of the Brandenburg death and destruction, five other tornadoes (43, 48, 51, 52, and 59) touched down at locations ranging from Louisville (48) and Boone County (43) in the north to Simpson County (59) near the Tennessee border. The pattern of rapid development farther south and east, with individual tornadoes moving rapidly northeastward, continued into the evening hours. Tornado activity ended in the north-central part of Kentucky by 7:00 p.m. CDT. From then until midnight, activity was concentrated in the south-central part of the State.

The Louisville tornado (48) touched down at 4:37 p.m. CDT one-quarter mile north of Standiford Field. It was witnessed by National Weather Service employees at the Weather Service Forecast Office. This storm was on or close to the ground as it traveled through 10 miles of residential property in the metropolitan area. It widened and increased in intensity as it moved northeastward. In the eastern 3 to 4 miles of the metropolitan area its maximum intensity was F4. Three deaths were attributed directly to the tornado. Three others were reported killed by heart attacks. A total of 225 injuries were reported in Louisville and Jefferson County.

Pulaski County, in south-central Kentucky, was struck by three separate tornadoes during the evening. The first of these (74) touched down near Mt. Victory at 7:55 p.m. CDT and moved into Rockcastle County before lifting. This storm killed 6 and injured 30 in Pulaski County. One death and 10 injuries were reported in Rockcastle County. The second tornado (73) moved into southern Pulaski County shortly after 9:00 p.m. after killing 2 and injuring 16 in eastern Wayne County. The storm hit Alpine at 9:20 p.m. CDT and caused 29 injuries in Pulaski County. The County apparently was struck by Kentucky's final

tornado of the outbreak (64) between 11:30 p.m. and midnight, as the storm moved from Piney Grove Church near the Russell County line through Nancy and Bobtown to Level Green (in Rockcastle County).

Killer storms also were reported in Boyle, Clinton, Franklin, Hardin, Madison, Nelson, Simpson, and Warren Counties.

For more information contact [Curtis Carey](#) at (817) 978-4613 ext. 140.

Analysis and Reconstruction of the 1974 Tornado Super Outbreak



ANALYSIS AND RECONSTRUCTION OF THE 1974 TORNADO SUPER OUTBREAK

RMS SPECIAL REPORT

INTRODUCTION

The Super Outbreak of tornadoes that occurred on April 3-4, 1974 was the most intense and widespread tornado outbreak in recorded history. In total, 148 tornadoes spanned 13 states producing about 900 square miles (2331 square km) of tornado damage in less than 18 hours. This report reviews the event's meteorological and damage characteristics, describes the impact subsequent research had on tornado risk models, and examines the property losses possible if the outbreak were to occur today.



Risk Management Solutions

Analysis and Reconstruction of the 1974 Tornado Super Outbreak

METEOROLOGICAL CHARACTERISTICS

Looking back, the atmospheric characteristics preceding the super outbreak provided clear evidence of the high potential for widespread tornado development. On the evening of April 2, 1974 a deep area of low pressure (983 millibars) over the Colorado-Kansas border created strong winds blowing from the south over the lower Mississippi River Valley. This forced high-humidity air northward from the Gulf of Mexico to the lower Midwest and Ohio Valley states. This moist layer of air was "capped" by warm, dry air, which limited thunderstorm development and created highly unstable atmospheric conditions. Recognizing this, the National Oceanic and Atmospheric Administration (NOAA) issued preliminary severe weather alerts on the morning of April 2 for much of the central and southern plains states.

During the morning of April 3, the center of low pressure moved northeastward to the Iowa-Illinois border. As the air warmed up during the day and winds converged near the ground, an explosive and sudden outbreak of thunderstorms developed around 2:00 pm Central Daylight Time (CDT). Three major squall lines of thunderstorms oriented in a southeast-northwest direction developed (see Figure 1). The most northerly line covered central Illinois, the central line extended from northwestern Kentucky to central Indiana, and the southern line ran along the Tennessee-North Carolina border. Most of the tornadoes were produced by individual thunderstorm cells within these lines. The individual tornadoes moved northeastward at 40-60 mph (65-95 km/hr), while the larger scale squall-line systems advanced toward the southeast.



Figure 1: Satellite image of the Eastern U.S. at 21:00 GMT on April 3, 1974

Up to 15 destructive tornadoes occurred simultaneously during the Outbreak. Among the suite of tornadoes produced, the longest life of any single tornado was two hours and five minutes. Ninety percent of the tornadoes, however, lasted less than 40 minutes. Many of these tornadoes were part of 'families' or a sequence of tornadoes spawned in succession by a single thunderstorm cell. Dr. Ted Fujita identified 30 such tornado families that comprised 74% of the Outbreak's

Analysis and Reconstruction of the 1974 Tornado Super Outbreak

tornadoes and resulted in 98% of the 315 deaths. The longest-lasting tornado family existed for nearly five hours, while the average life was approximately two hours.

The total path length of all tornadoes combined was approximately 2,600 miles (4,185 km), covering a total area of approximately 900 square miles (2331 square km). Dating back to the late 1800s, no other single-day event has surpassed the super outbreak in terms of the number of tornadoes or the area they affected.

Analysis and Reconstruction of the 1974 Tornado Super Outbreak

EVENT DAMAGE CHARACTERISTICS

Following the super outbreak, Dr. Ted Fujita and his colleagues initiated the most extensive aerial tornado survey ever conducted. The aerial survey was complemented by the collection of vast amounts of engineering data on the performance of individual structures subject to wind and debris loads. It took Fujita's team nearly 10 months to confirm the characteristics of each of the tornadoes in the event depicted in Figure 2. The F-scale classification statistics of the Outbreak are shown in Table 2.

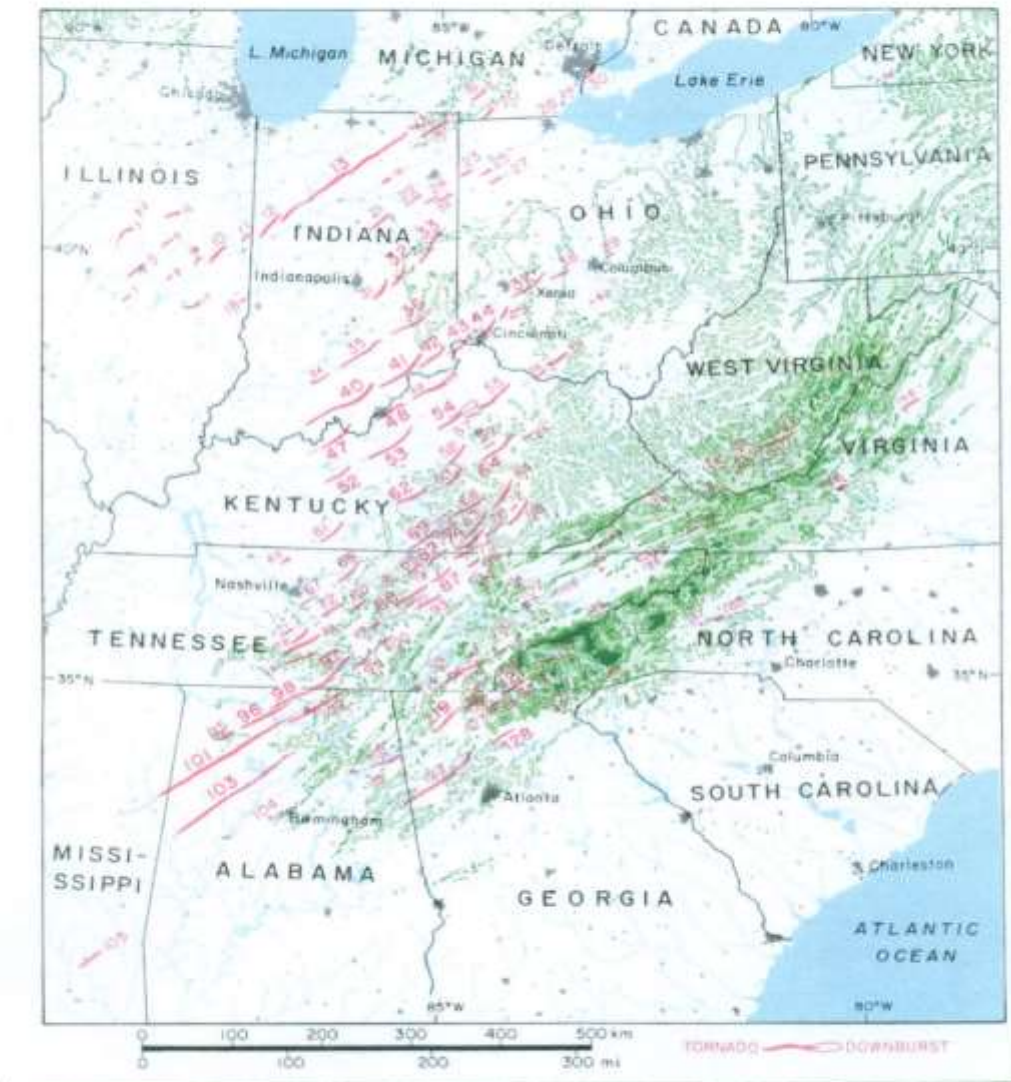


Figure 2: Map of the 1974 Tornado Super Outbreak

Analysis and Reconstruction of the 1974 Tornado Super Outbreak

Peak F-Rating	No. of Tornadoes	Total Length (mi)	Mean Width (mi)	Total Area (sq mi) ¹
F5	6	302	0.487	147
F4	24	858	0.457	392
F3	35	710	0.366	260
F2	30	360	0.185	67
F1	31	295	0.062	18
F0	21	46	0.028	1

Table 2: F-scale classification statistics from super outbreak

A total of 315 people were killed, more than 6,000 people were injured, and over 27,590 buildings were damaged. Of those that died, 74% were killed while in houses or buildings, 17% in mobile homes, 6% in automobiles, and 3% while seeking shelter. The economic damage amounted to \$600 million. Ten of the thirteen affected states were declared disaster areas. The greatest storm activity and damage was spread across Alabama, Georgia, Tennessee, Kentucky, Indiana, Illinois and Ohio. Table 3 summarizes the damage in these states.

State	No. of Tornadoes	Deaths	Injuries	Economic Damage (\$ M)
Alabama	8	86	949	50
Georgia	7	17	104	15
Illinois	13	2	20	11
Indiana	20	49	768	>100
Kentucky	26	77	1,377	110
Ohio	9	3	41	>150
Tennessee	28	50	635	30

Table 3: Super outbreak damage statistics for key states

Damage and loss statistics about some of the most devastating individual tornadoes follows. The map reference number is provided in parentheses after each of the tornado headings.

Xenia, Ohio Tornado (37)

The most deadly tornado in the entire Outbreak devastated Xenia (pop 25,000) in Greene County, Ohio shortly after 3:30 pm CDT. Thirty-four people were killed and more than 1,600 injured. The F5 tornado destroyed around 1,300 buildings, while 2,000 others sustained some damage resulting in a loss of over \$130 million.

Analysis and Reconstruction of the 1974 Tornado Super Outbreak

Brandenburg, Kentucky Tornado (47)

The state's most severe tornado (F5), which hit Brandenburg in Meade County, was the first of 26 to impact Kentucky. It was even noted to have caused a significant fall and subsequent rise in the level of the Ohio River as it passed over. Across the entire state, 6,625 families had damaged property and between 1,800 and 2,000 of the state's farms incurred damage.

Alabama Tornadoes (96, 97, & 98)

Two tornadoes (96 & 98) caused 55 of the 86 deaths in Alabama and injured 408 people. Over 1,100 buildings, 200 mobile homes, and numerous motor vehicles were destroyed or heavily damaged. The first tornado (96) formed near Newburg (Franklin County) at 6:30 pm CDT and moved northeastward. The second (98) followed a parallel track approximately 30 minutes later, and located only a half-mile north of the first. The second tornado caused 11 more deaths and 121 injuries after crossing into Tennessee. One home was hit by two tornadoes (97 & 98), unroofed during the first pass and blown entirely away during the second.

Other Severe Weather

Tornadoes were not the only agents of damage. A severe thunderstorm hit St. Louis at about 1:05 pm CDT. This storm, which had high winds and baseball-size hail, caused 25 injuries and \$45 million in damage; a record hail loss at the time. Hail up to three inches in diameter was also observed near Charlotte, North Carolina. Heavy snow and freezing rain affected northern Michigan, along with damaging wind gusts and flash flooding that washed out some roads and bridges. Missouri, Michigan, Mississippi, New York, West Virginia, Virginia, North Carolina, and South Carolina were also affected by either tornado or severe thunderstorm activity.

Analysis and Reconstruction of the 1974 Tornado Supper Outbreak

INFLUENCE ON MODELING AND PUBLIC POLICY

In the 1970s, the Nuclear Regulatory Commission actively supported tornado risk probability research to aide in their regulatory decisions. The creation of the Fujita damage scale in 1971 provided a critical means of translating observed damage into wind speed estimates. However, prior to the 1974 Super Outbreak, researchers were unable to characterize the intensity distribution within a tornado's path.

Fujita's extensive aerial survey after the 1974 Super Outbreak provided the necessary data to develop an empirical relationship for the width of each F-scale damage area within a tornado path. As an example, Fujita found that the swath of the F5 damage area within an F5 tornado was very narrow, usually less than 20 miles (32 km) wide. This survey data provided a new means for assessing tornado intensity probabilities that accounted for the gradation of damage within the tornado path. A schematic drawing by Fujita in the late 1970s illustrates this method (see Figure 3). To this day, this relationship remains the basis for estimating the intensity distribution within tornadoes.

Research from the 1974 event also provided further evidence of intense vortices embedded inside a tornado and led to the discovery of downbursts (small scale damaging downdrafts) that were recognized as the cause of several major airline accidents in the following decade.

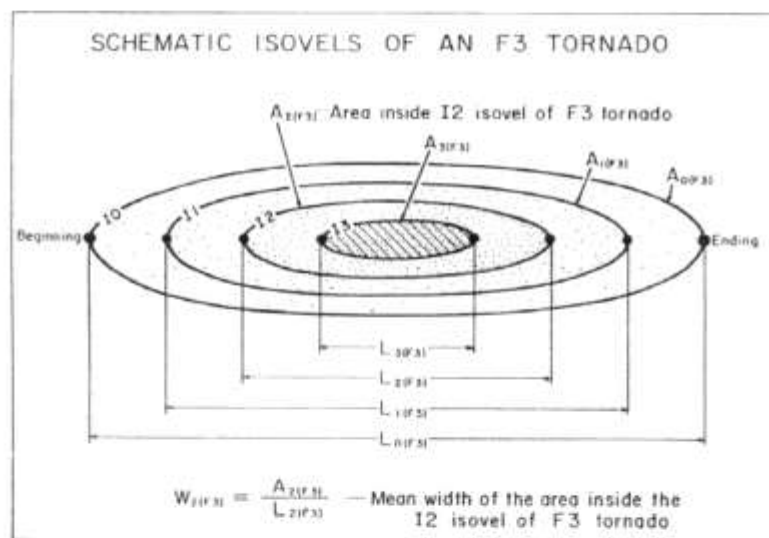


Figure 3: Contours of maximum wind speeds (isovels) by F-rating inside a hypothetical F3 tornado

Aside from the scientific advances, the outbreak also led to NOAA's rapid expansion of its weather radio network. During the 1974 event, tornado warnings were being posted so frequently, that they could not be transmitted from the National Weather Service (NWS) offices fast enough using teletype. Commercial radio stations also had difficulty re-transmitting the information. After the Outbreak, NOAA initiated an immediate expansion of its Weather radio network across the country, along with a modernization program that allowed the National Weather Service to adopt new technology, improving weather warning lead-times and accuracy.

Analysis and Reconstruction of the 1974 Tornado Super Outbreak

HAZARD AND PROPERTY LOSS RECONSTRUCTION

Based on Fujita's detailed color map of the event's tornadoes and intensity ratings, RMS reconstructed the tornado and downburst hazard from the 1974 Outbreak. This process involved digitization of all 148 tornado paths and downburst areas followed by calibration of these areas to account for adjustments made to path sizes in the map's original production. The intensity within each tornado was derived based on the area/intensity relationships established by Fujita and his collaborators as a result of their extensive aerial survey.

Because of the extraordinarily localized impacts of these phenomena, RMS used land use cover data to disaggregate its 2003 U.S. Industry Exposure Database by line of business and coverage to a resolution of 984 feet (300 m). This detailed resolution was needed to accurately represent the average loss potential from an individual historic event.

RMS' reconstruction and modeling effort suggests that a repeat of the 1974 Super Outbreak today would cause a record level of economic and insurance losses. The insurance losses would likely reach as much as \$3.5 billion for wind losses alone. Unlike recent major tornadoes, such as the 1999 Oklahoma City Tornado, the impacts of a super outbreak would be distributed over quite a large area, with losses exceeding the \$500 million mark in Ohio, Indiana, and Kentucky. A repeat of the 1974 Outbreak would surpass the \$3.13 billion insurance loss (PCS July 28, 2003) recorded for the May 2-11, 2003 sequence of tornadoes that impacted 18 states. While there were more tornadoes in the May 2003 outbreak (~190 tornadoes), the area impacted by intense tornadoes was actually less than the 1974 Super Outbreak.

Analysis and Reconstruction of the 1974 Tornado Super Outbreak

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The Courier-Journal The Louisville Times

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How to care for your damaged trees

The following information was provided by TREES, INC.

On April 5, 1974 a major thunderstorm system—extending from Mississippi to Canada—spewed numerous tornadoes, one of which cut a wide swath through Louisville, Kentucky, affecting residential and business areas, schools, public facilities, and parks. Severe damage was suffered in dwellings, businesses and schools and to our trees, not only in the parks, but along public thoroughfares and on private and public property.

Within a few days after the tornado a group of concerned citizens organized TREES, INC., primarily to raise funds for the replacement

and repair of damaged trees in the affected areas.

During conversations with tree technical consultants in this organization it was decided that the experience derived from this event should be made generally available. Actually, these suggestions are applicable to any damage sustained by a tree, a windfall, or drought whether it be wind damage, icing, heavy snow, flooding, or other natural disasters—even damage sustained by such things as an auto accident.

PRIORITY LIST

1. WASH MUD OR DUST FROM TREES AND SHRUBS—THE ENTIRE TREE, TRUNK TO LEAVES.

Immature trees and shrub plants require copper and other gases to carry out their life processes, and dust or mud coating trunks, branches and leaves must be removed, then down all vegetation to remove tornado or wind-blown debris or flooding siltation.

2. WATER THE GROUND AROUND PLANTS WELL INCLUDE ALL ROOT AREA COVERED BY THE CROWN.

Prolonged high winds as well as tornadoes remove large quantities of water from vegetation and the soil surrounding trees. The immediate replacement of this lost moisture is of utmost importance and all outside plants should have their entire root systems watered for hours, depending on their size. Watering thoroughly with a good sprayer for several hours each day (preferably overnight) three times the first three weeks, then twice a week for several weeks may be necessary for several months to help trees overcome the shock.

3. AVOID EXCESS TRIMMING OF DAMAGED TREES.

If your tree has only a very few branches broken (less than 15% of the foliage crown) considerable thought should be given not to cause further damage by reducing the balance of the tree to match the condition of the injured portions. If heavy pruning or removing of trees is to be accomplished it should be done during the months of December, January and February (in the Ohio Valley Region), dry heavy pruning in the other months either should not be done or considerable care should be taken, preferably trimming not more than 25% of the foliage crown. This is the recommendation of the International Trade Tree Committee. Check with your local shade tree association or arboretum.

4. RIGHTING OF LEANING OR PARTIALLY FALLEN TREES

Most leaning trees, large and small, can be righted immediately, using the proper technique. The soil immediately surrounding the base of these trees should be thoroughly soaked with water so that when the tree is being righted in its original position the soil will move back into place around the tree roots. Keep the roots thoroughly moistened, shaded and protected from the wind by covering the exposed roots with burlap or other slightly porous materials until the tree is straightened and rooted. Care must be exercised that the tree is properly braced from three or four sides with ropes or cables so that the tree will not fall back over because of the waning process. All cable or any bracing procedures should be made with lag bolts or bolts used in a professional way, taking great care that the trunk is not cracked with the bracing equipment which will cause shaking. Larger trees will have to be braced in this manner for two to four years, depending on original damage to the root system. See illustrations number 1 and 2. Smaller trees can be braced in the same manner with heavy wire and rubber hoses, the latter to prevent injury to the trunk. Care must be taken on these types of installations by making at least once-a-year adjustments in order to avoid choking or retarding of the tree's normal growth.

5. REPAIR OF BROKEN BRANCHES

Often strong winds break large limbs from trees, especially when they have just loaded out. Broken ends of tree branches are likely sites for infection by undesirable bacteria and fungi that may further damage the tree. For limbs larger than approximately 2 inches diameter, the ends of the broken limb should be pruned or sawed and the wounds covered with a proper wound protection compound or fungicidal paint. Wounds

caused by broken limbs of about 1 1/2 inches in diameter or less do not require protective paint as they will usually heal within the growing season.

Drinking the cut end with a commercially manufactured tree dressing compound two to three days during the growing season until the wound heals or until the branch ceases to form leaves, will lessen the chance of bacterial and fungal damage. See the illustration number 3.

6. BARK REPAIR

The bark prevents loss of water and infection by disease and insects. Injury from any cause must be repaired. All loose bark should be removed from around the injury up to where the bark is still adhering tightly. This open area should be dressed with a commercially manufactured tree dressing compound. Keep compound off good bark. These paints or wood preservatives can actually harm the plant and prevent healing. The commercial tree dressing compound contains plant growth hormones that promote healing. It is a wise investment. All large trunk injuries should be covered with two coats of orange shellac first and then finished with the commercial tree dressing compound.

7. THIN BARKED TREES

All maple trees (and other trees with a thin bark, such as Dogwood or Redwood) which have had their outer foliage removed will now have their bark exposed to sun rays that will cause "sun scald" which is similar to the severe sunburn on your skin. This can be prevented by dressing with whitewash at least two times per growing season and at least twice in the winter season. Once whitewash, after drying, will reflect the heat rays of the sun, these coatings each year will help prevent this additional stress on the injured tree until new foliage has grown to shade the exposed areas.

8. GROUND COVER PROTECTION

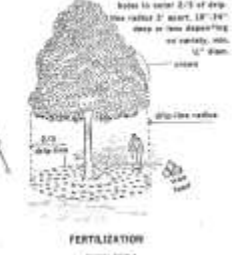
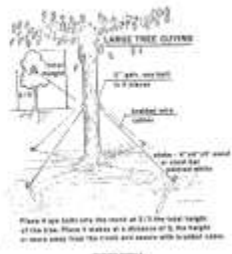
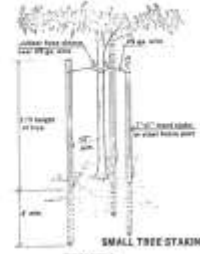
In woodlots and forests the loss and removal of large numbers of trees exposes the ground over to increased sunlight and loss of water causing much ground cover to die, exposing the soil to possible erosion. Such erosion decreases the chance of recovery of remaining trees in the area. Again, watering and fertilizing as well as artificial shading can help. Plant as many new trees as necessary. Immediately, this will provide shade which is absolutely necessary for the survival of the herbaceous ground cover plants. These plants prevent erosion of the soil and provide the complete ecological environment of their portion of the forest canopy. Supplemental plantings of sun-tolerant herbaceous plants such as asters, vines, ground covers and grasses or mulching with straw or leaf mulch may be necessary in large areas where replacement of the full canopy is not possible immediately. Remember to fertilize and water the understorey plants to replace their water loss. Watering thoroughly for several hours each day (preferably early morning or late evening) with a good sprinkler may be necessary for several months to help the plants overcome the shock.

9. EXTENSIVE DAMAGE

Trees with more than one-third of their crowns missing due to injury of any nature will never grow new full crowns. These trees can be saved for only a few years, but then only with maximum care.

10. FERTILIZING

Since the upper and middle functions of injured vegetation have been impaired, fertilizing is needed. Elements can be made use of in solution or fertilizers for individual trees, shrubs, and evergreens. Multiple-use



fertilizers should not be used. Different trees require different kinds of fertilizers. Check with your local nurseryman, arboretum, or tree expert. Illustration number 4 is the proper deep root feeding method.

11. SPRAYING

It is especially important to keep your plants free of insects by spraying as needed during this recovery period. Your local arboretum, tree expert, and nurseryman will assist you with the proper chemicals and methods to use.

12. At this point we must emphasize: Do not let the panic button—all is not lost! Follow these instructions and you can contact one of your local reputable arborists, shade tree experts or nurserymen. Please be aware that your area will be invaded by itinerant "tree trimmers" who will be offering their "expert" advice and expensive services even though they are not professionally qualified. Do not listen to their stories. Contact your local shade tree expert or arborist or ask your Chamber of Commerce, or Better Business Bureau for references.

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Personal Accounts

Comments from firefighters—

4/3/1974 4:15 p.m. Tornado swept through our district, 2 fatalities, one man in a car, one lady in a garage (by Jack O'Toole—(January 2011))

Several of us, including Rick Albers, were at the firehouse the afternoon of April 3rd 1974 due to the inclement weather. I was supposed to be headed to Frankfort KY to visit my cousin but instead diverted to the firehouse. As 4:15 PM approached we noticed an L&N train stop in front of the firehouse and quickly reverse direction, something that was way out of the ordinary. Next we could see the funnel cloud, and the debris swirling in the sky. Even before the tone sounded we formed a plan and a crew and headed out. I seem to recall S4 was off the track and we took S5. Many streets along the way were blocked by fallen trees. Once we made it to the Indian Hills area, we were dispatched as search parties, checking house after house, expecting the worst, hoping for the best. Luckily school was already out and there was plenty of warning. Everyone in the dozens of homes we checked were OK, usually found hiding in the basement. After we finished checking all of the damaged homes, our crew was called over to the location of one of the two fatalities, where a woman had been rushing into her home and was hit by a falling ceiling beam. Had she stayed in her car, in the garage she would have suffered no injuries. A few days later I learned the man who died in the car, found wrapped around a telephone pole several feet off the ground was related to a friend of mine. His wife was scared by the storm and called him to rush home from work to be with her. Many years later around 1987 in Dallas TX at a Toastmasters public speaking meeting, a woman was called on to give an impromptu 5 minute speech about a disaster she had once experienced. She talked about the April 3rd tornado in Louisville, KY and related she had lived through it, living in an affected neighborhood. As part of her speech, she was allowed to call on anyone in the room to answer a question about her topic. We were judged on our ability to speak even if it was a subject we knew nothing about. I had probably turned white by the time she called on me and asked "what would you do if you were faced by such a tornado". I stood up and responded "well in fact I lived through that very tornado as a member of the local fire department.....". Later she complimented me on my ability to make up such a brilliant story on the fly. When I told her I did not make up the story, she about fainted. Two people in Dallas TX, who both lived through a major weather event in Louisville, years earlier. Small world indeed.