

Samples

**ANKENY**

**JUNE 18, 1974**

***TORNADO!***



## **ANKENY'S VIOLENT NIGHT**

Tuesday night, June 18, 1974 at 10:30, a killer tornado ripped through Ankeny, Iowa. High winds of 70 to 80 miles per hour, accompanied by heavy rain and hail, hit this town and other parts of Polk County. Just before it arrived, the sky was festering with wind, rain, and constant sheets of lightning. When it hit, the lightning turned green, and ears and windows started popping from the immense pressure changes of the storm. When it was all over, damage to the town business and residential areas was estimated to be between 10 and 20 million dollars. This book is a documentary of Ankeny's damage and recovery from that killer storm.

COVER STORY—These Mammatus clouds preceded the tornado by several hours and were photographed by many Ankeny Citizens.

COVER PHOTO: PHOTOGRAPHER—LYNN VOGT  
COLOR SEPARATION—BILL ROCAP  
MEREDITH PUBLICATIONS

# PRELUDE

**By: Marv Tuttle**

Foamy yellowish-green clouds lit the sky. It was a night in a million for Iowans to behold those formations floating in the air.

But for Ankeny, Iowa, a city of 13,000 people, it was also a night never to be forgotten in the saga of "Iowa's fastest growing city."

Those clouds which represented serenity and calmness for the many that viewed them also served as a premonition for the activity which was to occur.

It was the usual Ankeny day on June 18. Paper boys were completing their routes, Ankeny's baseball team was engaged in a contest with Ames, most of the Ankeny businesses had wound up for the day, and fathers were out running their evening errands. Just the night before, people were complaining before the City Council about their basements flooding due to the plush rains which had hit Ankeny.

But the clouds of June 18 struck a chord of dissonance with prior nights that Ankenians had experienced. How the purpose of the clouds — where and when — was to be unveiled, nobody knew. Many citizens took a nonchalant attitude towards the possibilities of a severe storm, a mistake they probably won't repeat.

The serenity of that night soon turned into a catastrophe for Ankeny people as the quiet quickly unfurled sounds of whirring, crashing winds which sent trees "timbering" one by one, crushed houses into matchsticks, and soon had Ankeny in a state of disbelief. Yes, that was the night of June 18, 10:32 p.m., when the city of Ankeny was knocked out of commission . . . but just for a short while!

It had happened before, about six years ago, on the east side. No one was killed, but it did happen.

This time, two persons died in the destruction. It hurt to lose them, but it was a miracle there weren't more.

Perhaps you could look at the chaos which engulfed Ankeny as a test of the city's strength to fight back.

Did Ankeny sit on its haunches and wonder in amazement at the wounds inflicted by the tornado? No! The next day the city looked together on that terribly hot day at the awesome task of rebuilding with confidence and determination.

# ***Where were You the night of . . .*** **JUNE 18?**

Doreen Volz and Janie Gray were near the Ford Tractor establishment when a transformer dropped on the back of Doreen's car. Linda Alleman and Sherri Saveraid were located in a car in the Ankeny Walgreen parking lot. They ducked their heads in case the windows were smashed out by the heavy winds (which they were). All four girls looked for help and found it. Nobody was hurt.

Mr. and Mrs. Wallace White of 1110 SE Trilein were in bed at the time of the tornado. They were the only two fatalities in the storm as their house was uplifted by the tornado and brought down into the street.

A neighbor, William Doughton, found the bodies clad in bed clothes.

Otis Anderson, owner of Anderson's Shoe and Clothing Store, and his son Doug were working on their stock car when the killer storm hit. The Andersons headed for a nearby drainage ditch. They were lucky, but their home was demolished.

Lawrence Jones, manager of Henry's Drive-In, and several of his employees were about ready to wrap up business when the storm hit. They all hit to their knees and crawled out of the front portion of the building and into the back room where they waited for the storm to end. The front portion of Henry's was totally destroyed while the other part saw little damage.

A few women were engaged in a card game at the Ankeny Golf and Country Club on the night of June 18. They knew it was a bad night with it raining hard, but the thought of a tornado probably never entered their minds until they returned home that night.

The fire whistle had blown to warn of an approaching severe storm at 9:45 p.m., but at 10:15 most people in Ankeny thought it was a false alarm. There was a dark cloud to the north, but it was a common assumption that tornadoes don't strike from the north.

People stood in their yards watching the weather, some chatting with their neighbors about it. The most common thought expressed was that everyone was sick of the rainy weather and was just hoping for a sunny day.

A few listened to portable radios and heard of the severe storm damage in Amcs, but the stations said the wind was headed

southeast which meant that it would miss Ankeny. A tornado watch was broadcast but Ankeny and Des Moines were on the very edge of the watch area, so no one thought too much about it.

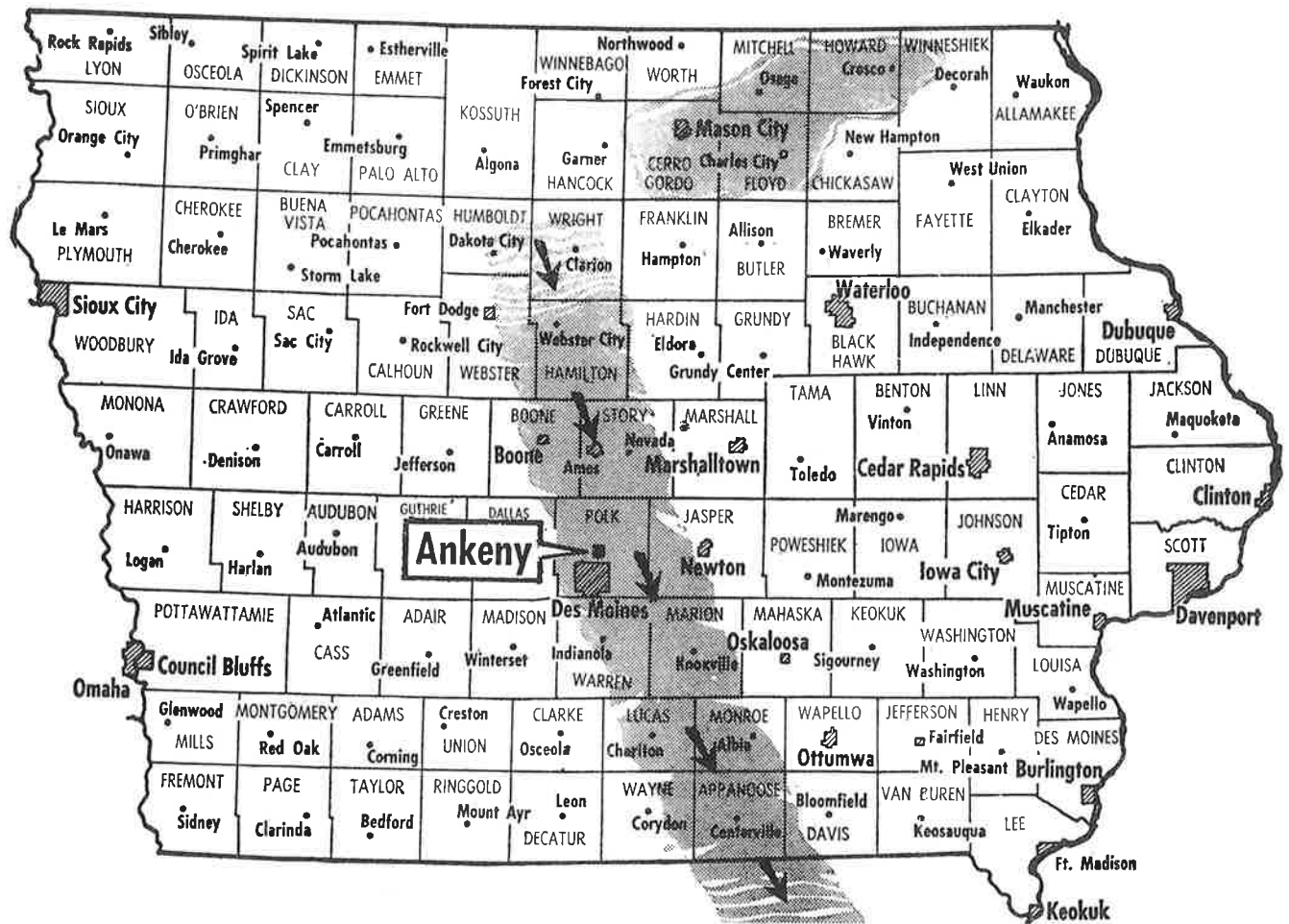
Then at 10:35 everyone began to take it seriously as the wind blew up and warned of an impending storm. People scurried into their homes and began to close windows. The wind kept coming and along with it, heavy rain. The wind got worse and people headed for the lowest part of their houses and for the best protection they could find.

People huddled under pillows or mattresses in case a window should

blow in. Those who could see out of a window watched green and blue lightning. Others could only hear parts of their houses blow away and for those in the least affected part of town, garbage cans hitting the sides of their houses.

Everyone waited for the wind to abate but for a half hour it just kept blowing, at times subsiding a little, but then picking up again. Finally it stopped and left only the rain. And finally even that ceased.

People sighed their relief and found candles to light. They slowly emerged from their houses to find Ankeny damaged and two dead.



**THE MAP SHOWS THE PATH...**

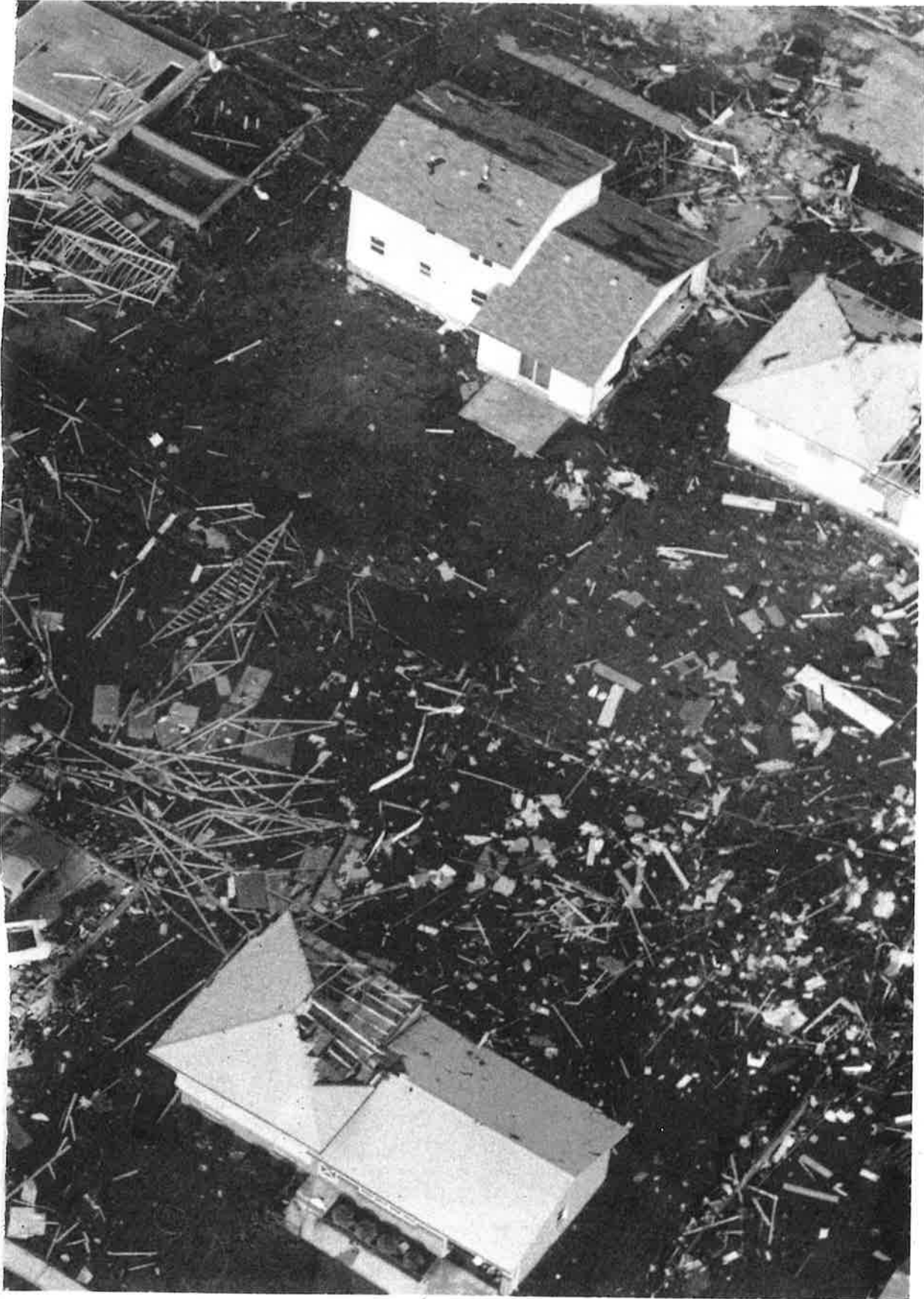
**and the  
CLOCK  
tells  
the  
TIME**



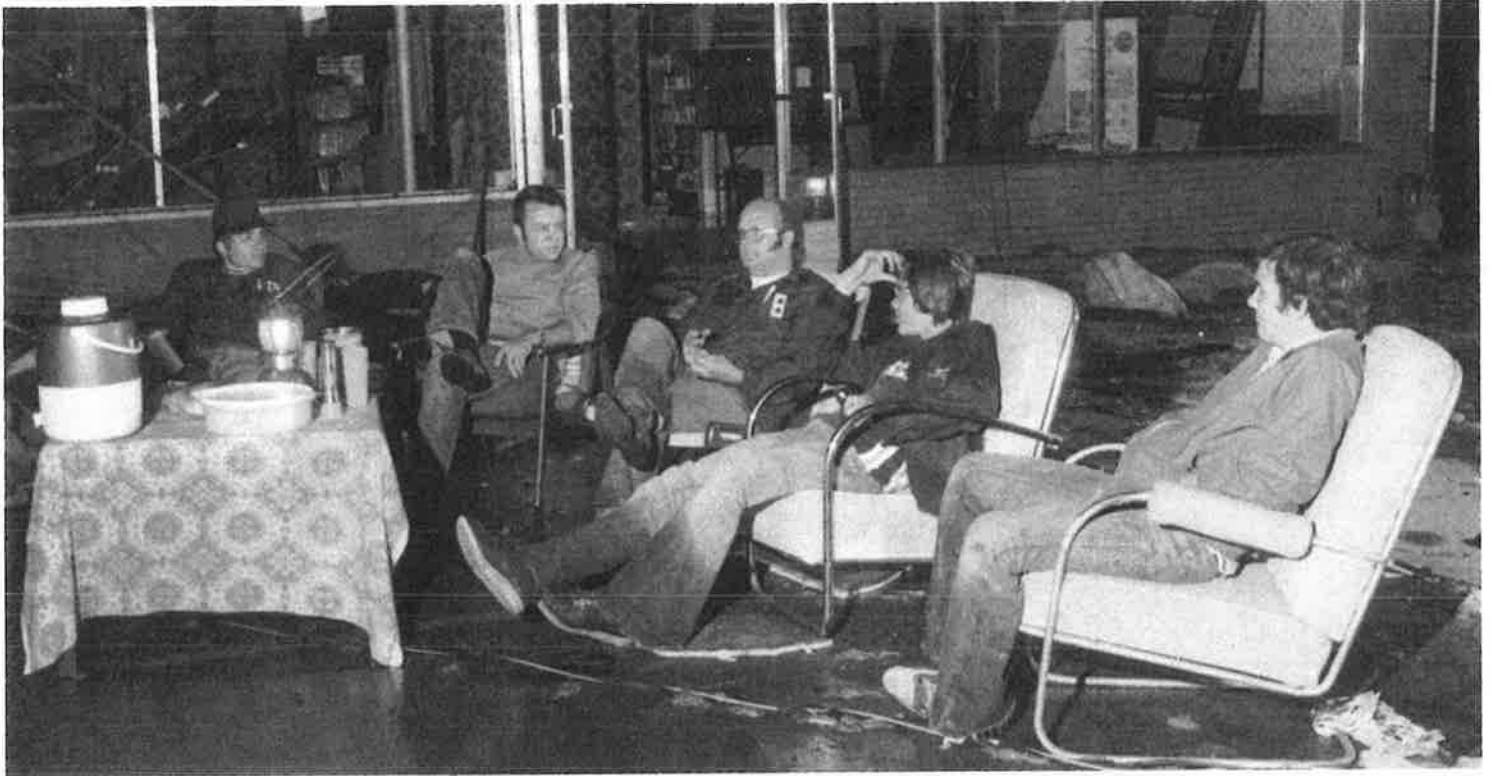
# *Houses and Garages were*



# ***Scattered Like Matchsticks***



***It was a busy morning.***



Five persons guard the wreckage of Luke Bros. Carpets & Linoleum against looters. (Left to right) Dick Luke, Larry Luke, Francis Alexander, Mike Luke, and Terry Alexander.



Walt Webb of Des Moines, Assistant to Polk Medical Examiner R. C. Wooters, searches through rubble of the White's house.



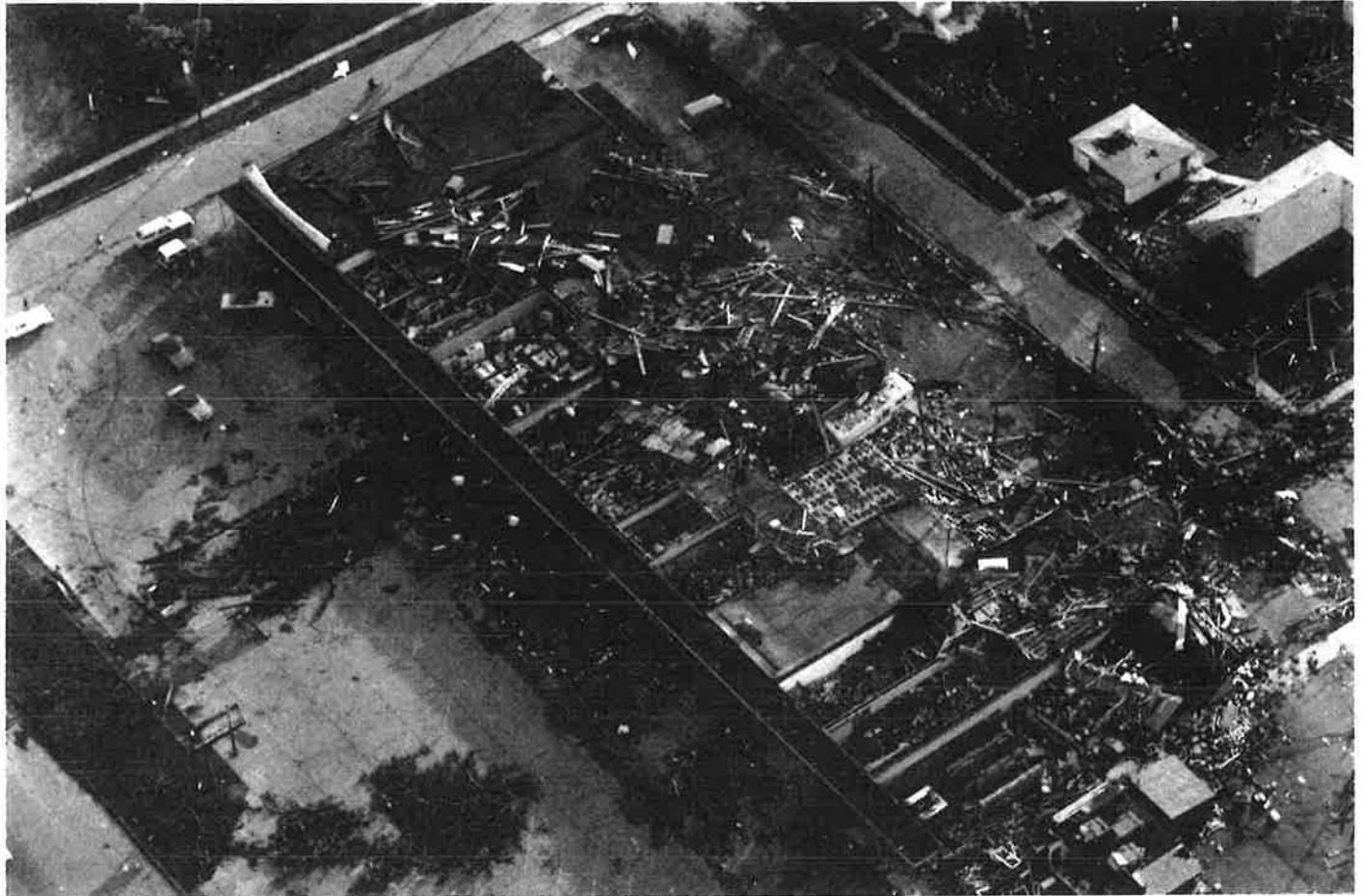


Jerry Card, Ankeny Safety Director pokes through rubble of the home at 1110 Trilien Dr. where Mr. and Mrs. Wallace White were killed and their house was demolished.



Francis Sapp, an Ankeny volunteer fireman, examines a splinter that was blown through a wall of the J. W. Janssen home during the height of Tuesday night's tornado.

# ANKENY PLAZA WAS HARD HIT!



Much of the damage to the commercial areas in Ankeny was inflicted upon the Ankeny Plaza. All stores in the shopping center received extensive damage.

Roofs were ripped off and merchandise was sent flying out of the stores into the Plaza parking lot and into Highway 69.

Quick and decisive action was taken directly after the storm by the Plaza merchants as they started to re-build.

Businesses were put out of commission from ten to sixty days in their shops, but they still continued to conduct sales in mobile trailers, etc.

All stores were heavily protected from looters by the Iowa National Guard, Highway Patrol and the Ankeny police. The Guardsmen helped Plaza merchants store salvaged equipment in other warehouses. In the case of Bud Paullin, owner of Paullins Jewelry, his showcases were taken to Stuart, 55 miles away, to be refurbished.

The heavy losses taken by the merchants were made up by their fighting spirit to get back into business as quickly as possible. Their spirit was typical of the rest of the area as they started Ankeny on its way back to a "City to live and grow in."

Cory's hardware section was completely demolished, but some appliances were salvaged.



PRESS-CITIZEN

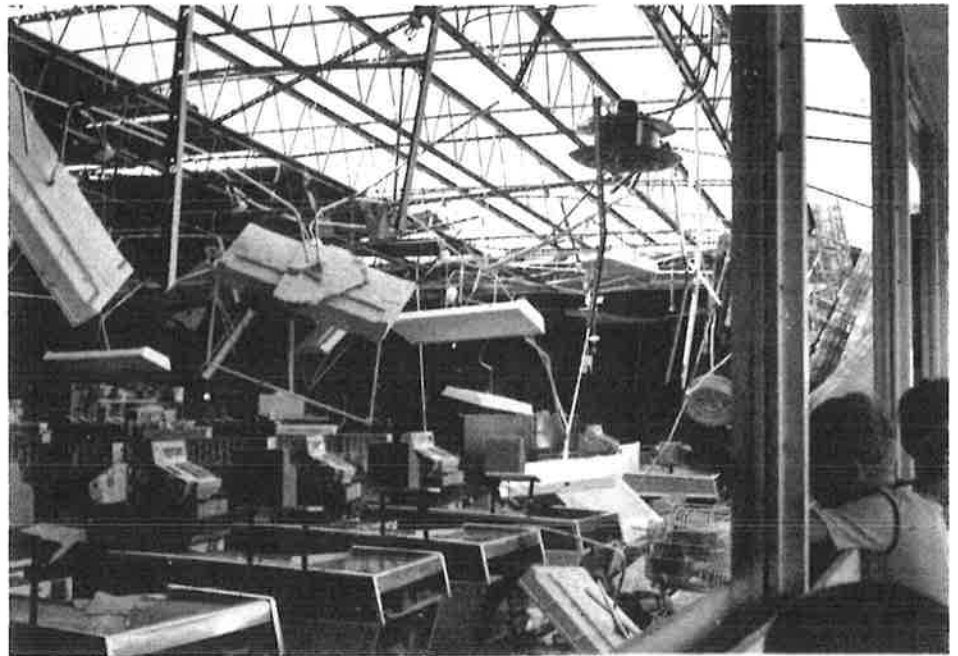
Six persons inside Henry's Hamburger shop escaped injury by lying on the floor behind the counter. The front of the shop was ripped apart.



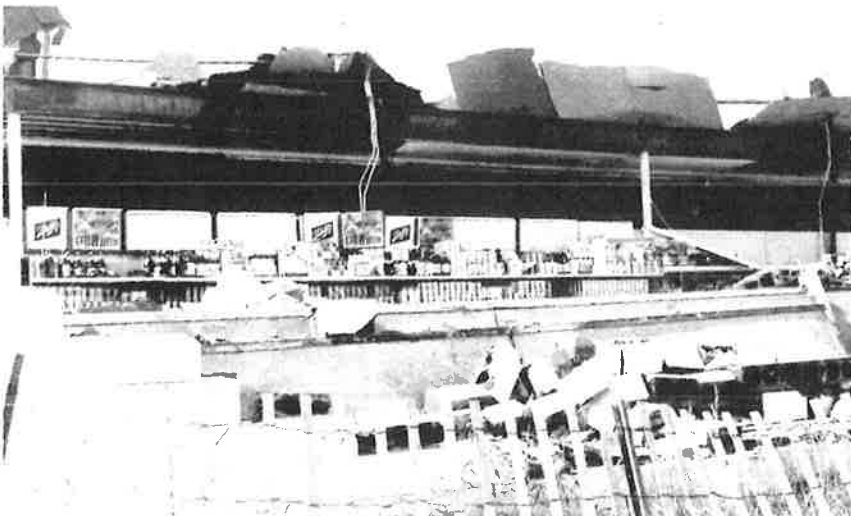
BROWN



PRESS-CITIZEN



MAYNARD



PRESS-CITIZEN



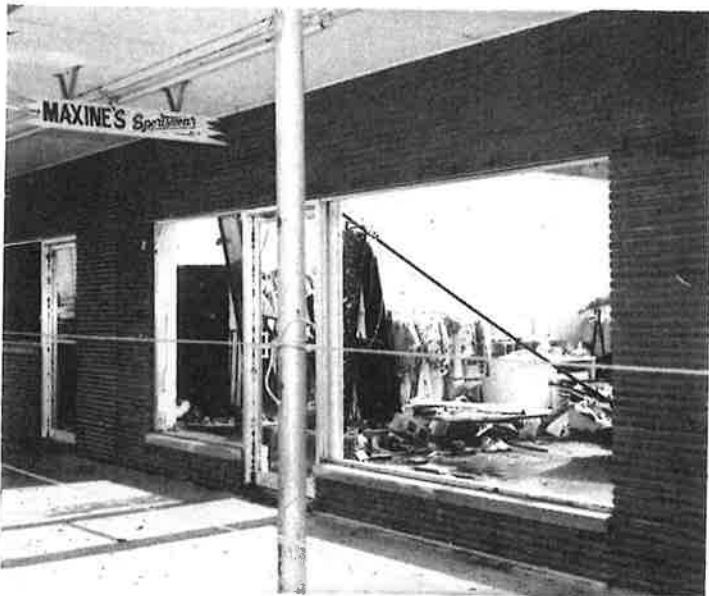
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**BEN FRANKLIN**



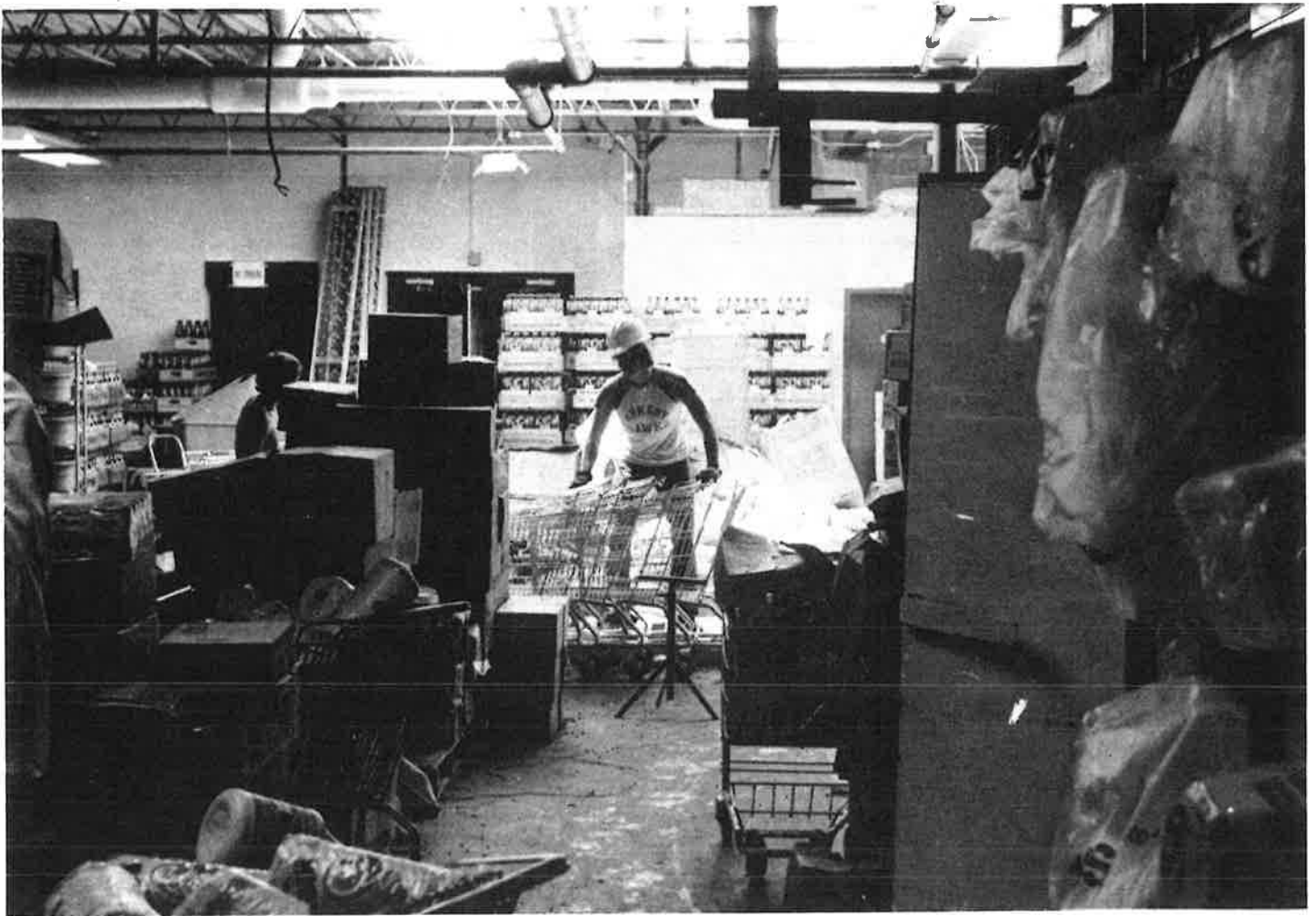
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**BEN FRANKLIN**



PRESS-CITIZEN

**MAXINE'S**



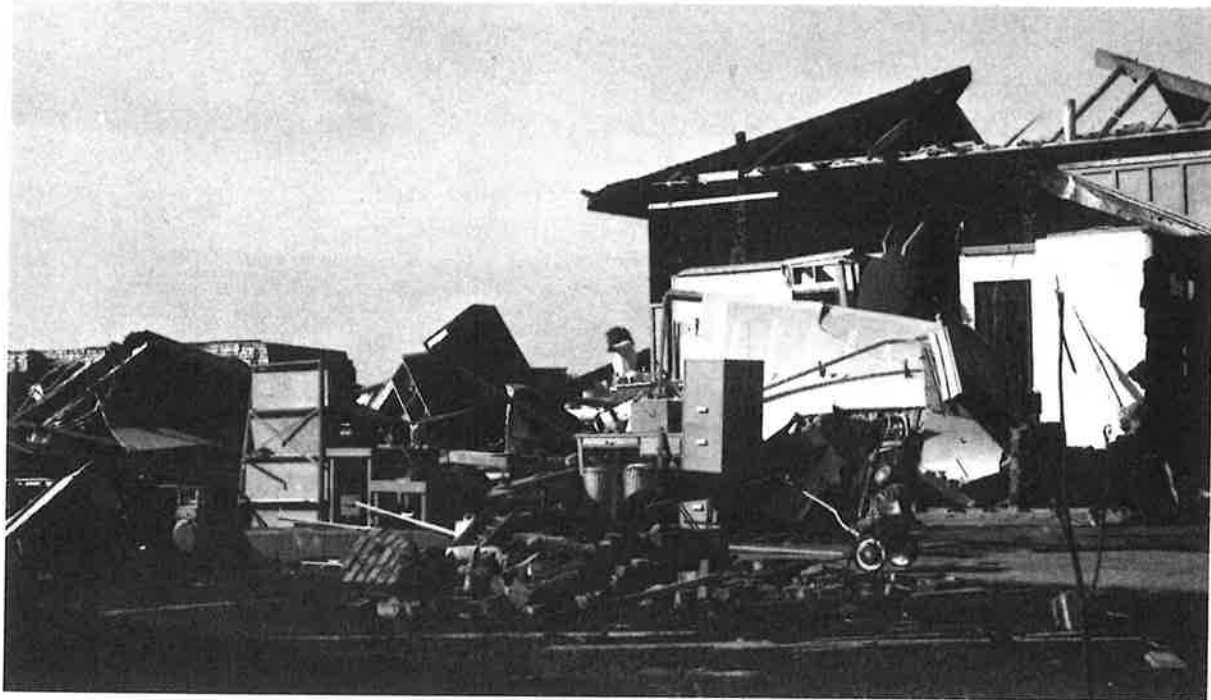
PRESS-CITIZEN

Cleaning up debris  
at Hy-Vee . . .  
. . . and Flatt's  
Clothing Store



GARCIA

# Homes were hit in the Southeast Area . . .



GARCIA



YEAGER



YEAGER



MILLER



CHESBROUGH



BROWN

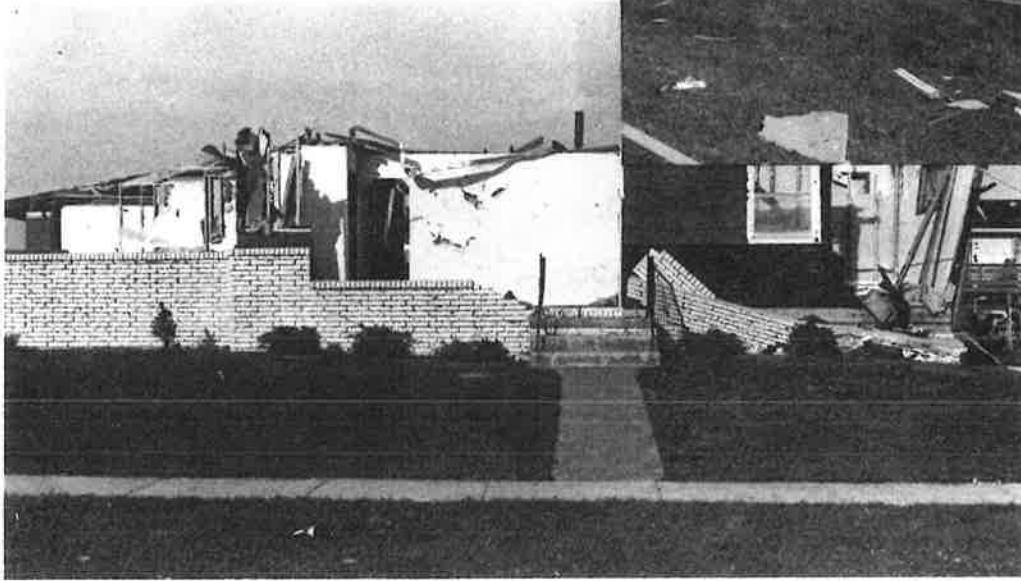


CHESEBROUGH

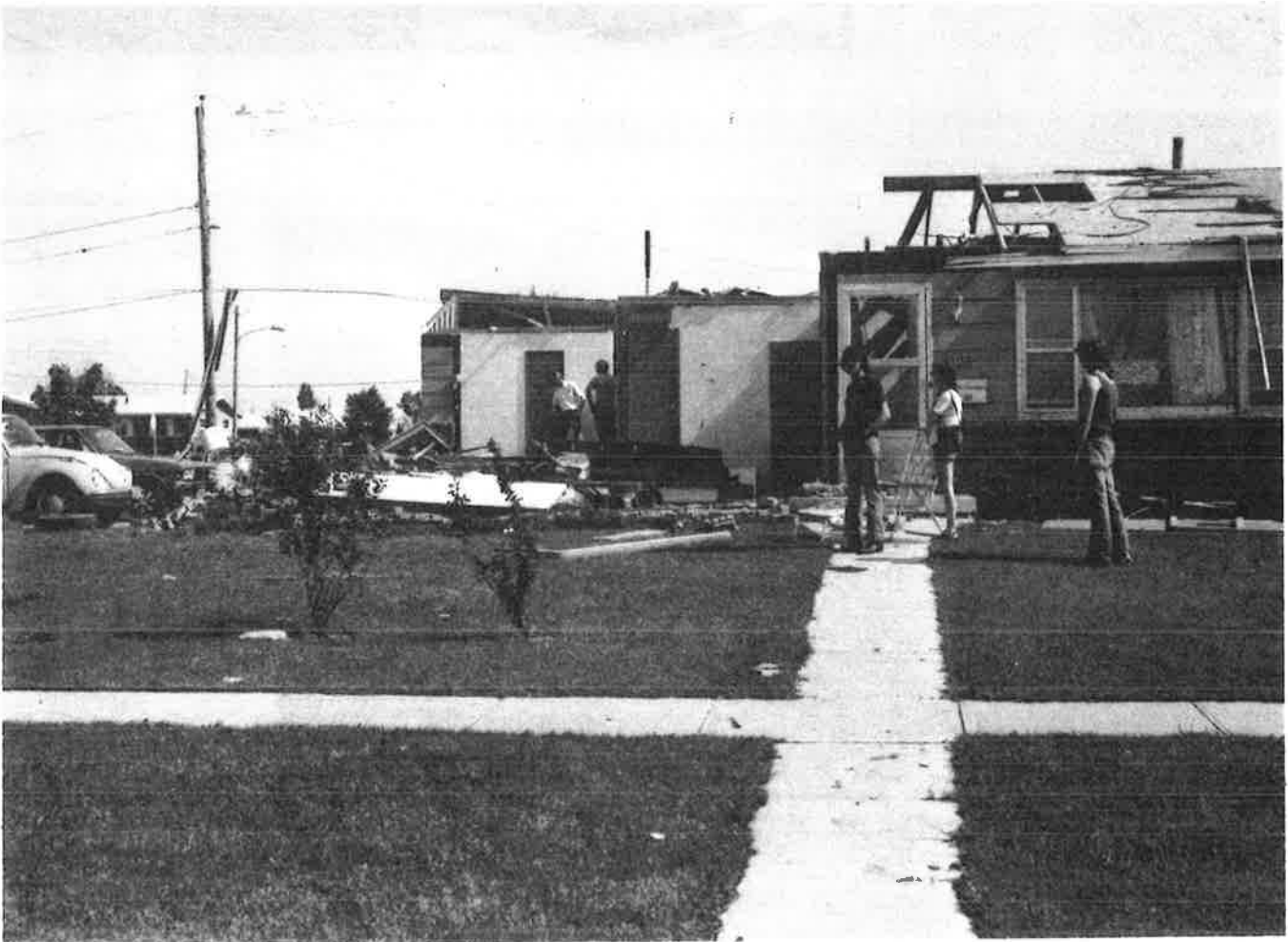


PRESS-CITIZEN

BROWN



CHESEBROUGH



BROWN



**THE  
NORTHWEST  
SECTION  
OF ANKENY**



CHESEBROUGH



MAYNARD



CHESEBROUGH

# The Tornado *RIPPED* into . . .



The wings housing the mechanic shop and music hall of Northwest High School were completely destroyed.

CHESEBROUGH

Damage to schools was estimated to be \$3 million.

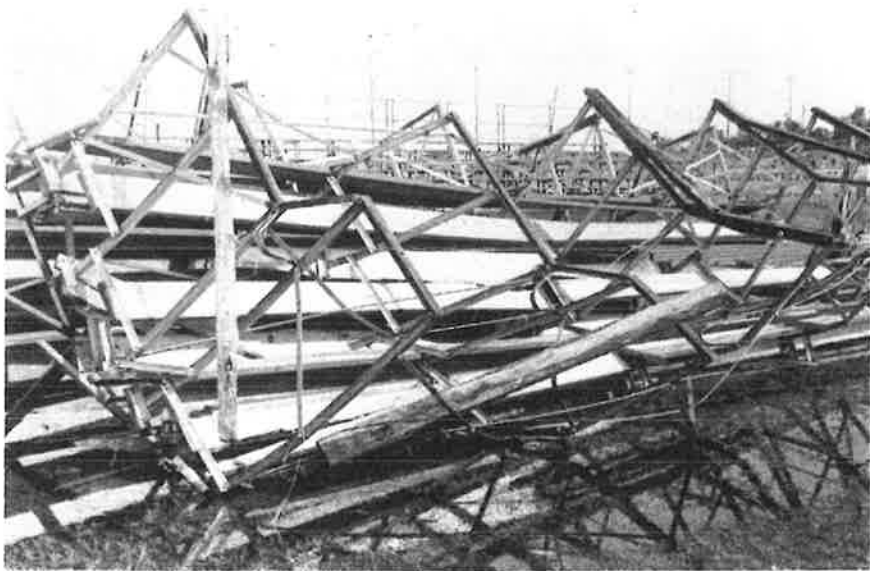


PRESS-CITIZEN

# ...THE SCHOOLS...



FRESS-CITIZEN



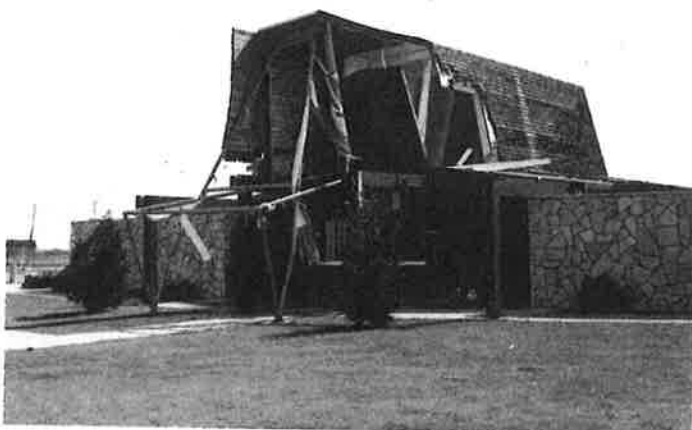
CHESEBOROUGH

# --- RECREATION AREAS ---

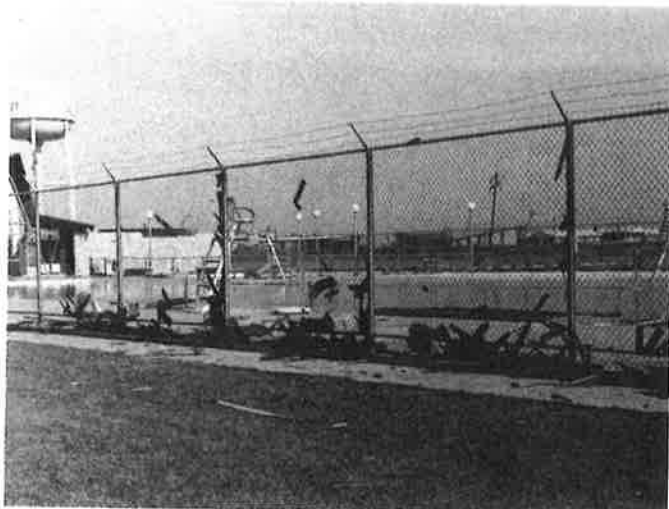


BROWN

The Shelter house, a favorite spot for group parties and functions, was completely destroyed.



PRESS-CITIZEN



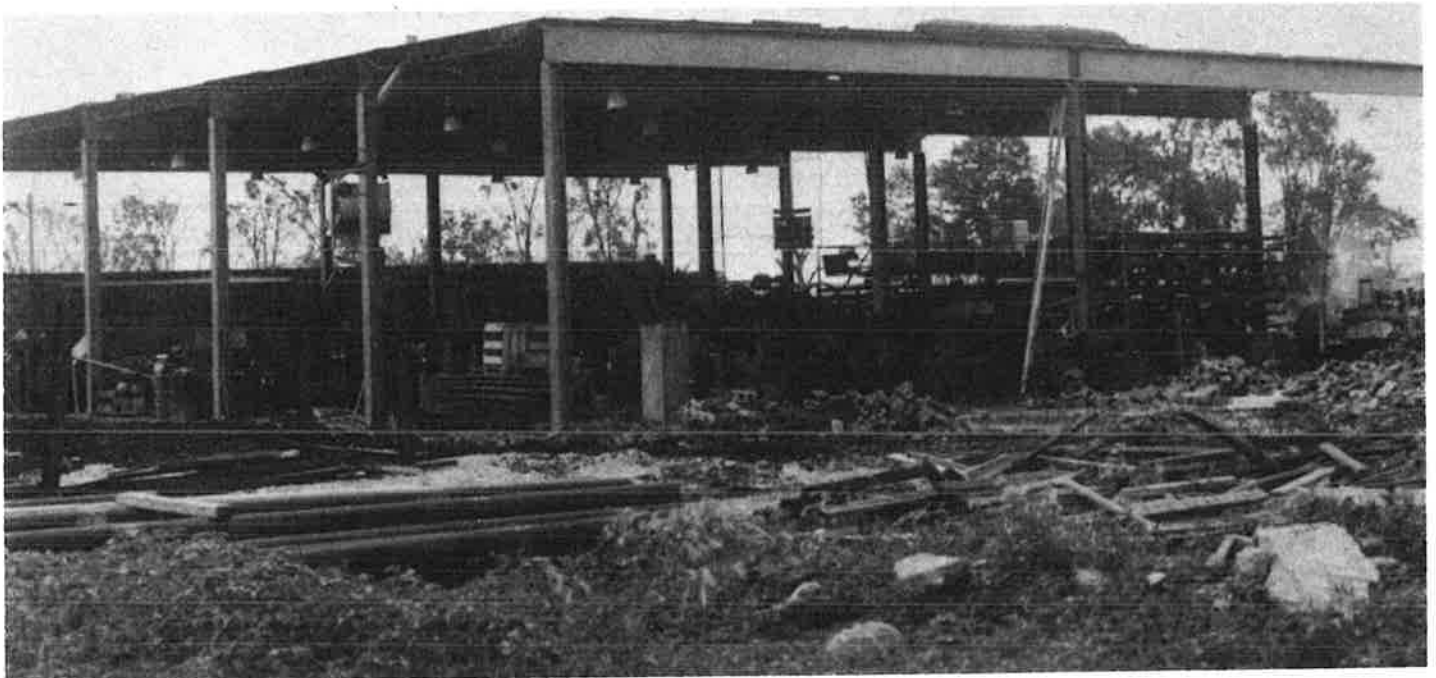
PRESS-CITIZEN

# --- and **BUSINESSES** ---



PRESS-CITIZEN

PRESS-CITIZEN



PRESS-CITIZEN

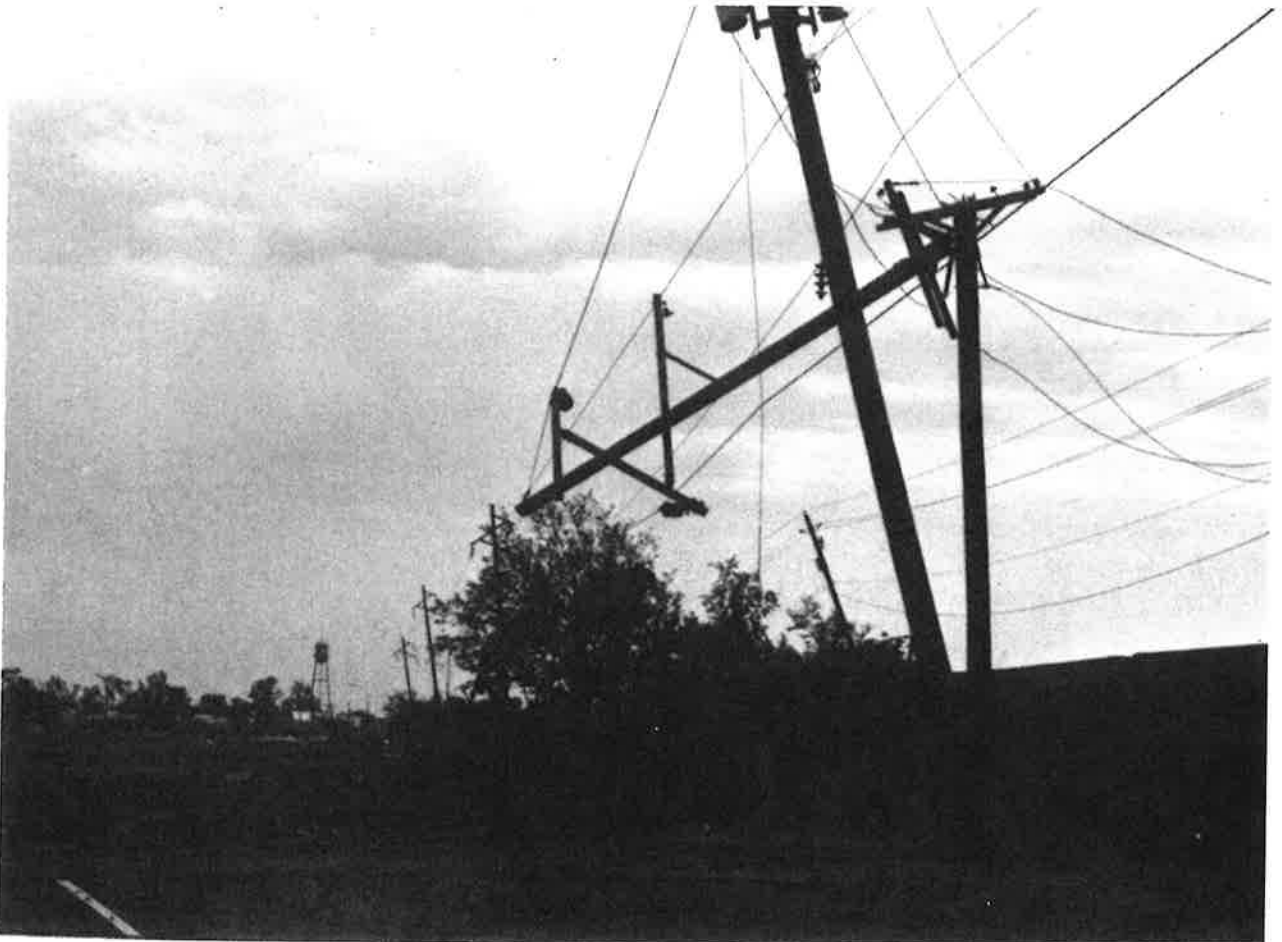


# ***Snapping Trees . . .***

MAYNARD

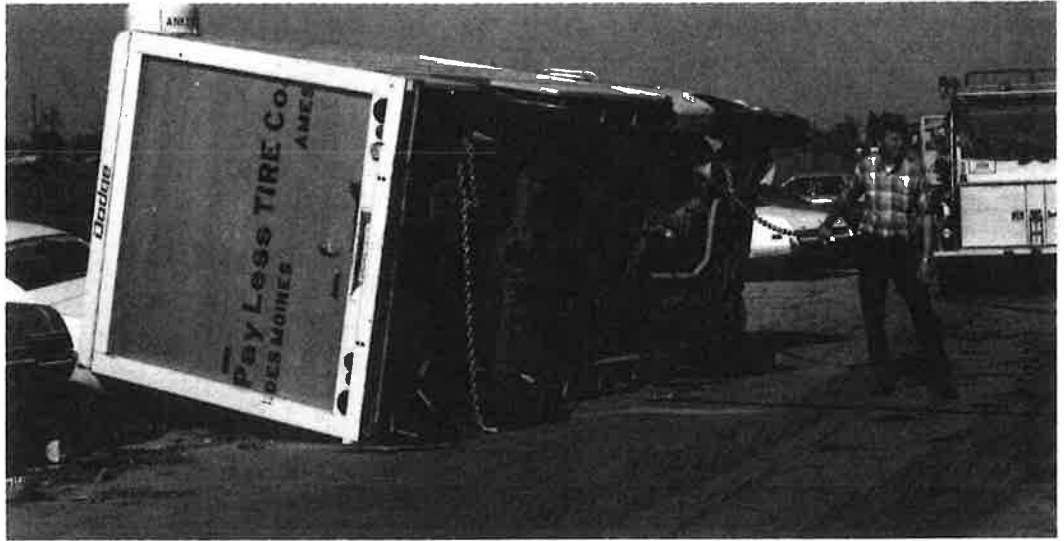


***and  
telephone  
poles***



GARCIA

Firemen and wrecker services were on hand early Wednesday morning to upright a panel truck that high winds blew over 2 cars.

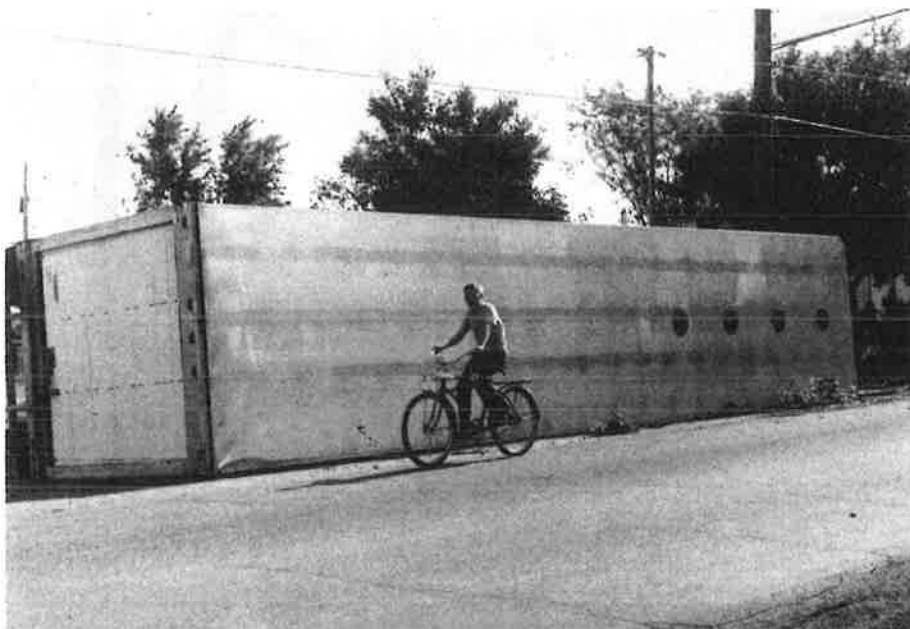


GARCIA

***... puncturing  
and toppling  
vans ...***



MARTIN



PRESS-CITIZEN

# ... And misplacing signs



CHESEBROUGH



CHESEBROUGH

# TILT!



CHESEBROUGH



GARCIA

A refrigerator met up with a fire hydrant.



CHESEBROUGH

# **Digging out and . . . Cleaning Up!**



The organization of the clean-up following the twisters on June 18 was one of efficiency in a time of mass confusion.

City Manager Jeff Segin and Police Chief Dennis Ballard were in the police station at the time of the tornado and put the city's master emergency plan in effect after the tornado struck. Segin, Mayor Ollie Weigel, Councilmen Jack Leinen, Larry Cairns, and Jim Bradshaw, put in endless hours without sleep to give the city the directional leadership it needed to get back on its feet.



Help in the clean-up came from miles around as the Iowa National Guard was called into the Ankeny scene by Iowa Governor Robert Ray. The Iowa Highway Patrol set up a mobile unit in the Drug Town parking lot for citizen assistance, and aid from the hard-working Ankeny police, fire, and public works departments was unending. Other help came from police and rescue units from Des Moines, Ames, Urbandale, Windsor Heights, West Des Moines, Dallas County, Newton, and other surrounding communities.

But there were also undesirable helpers in Ankeny, too. Scavengers and contractors looking for an "easy buck" came from all over the United States to "help out", and Ankeny people were warned about this situation in a town meeting.

The Red Cross and Salvation Army were all-important in the revitalization of the city. The Red Cross set up a disaster assistance center in the Ankeny Police Station for families requesting food, clothing, or temporary housing. They were responsible for the tetanus shots given to many Ankeny citizens due to the questionability of the Ankeny water supply for purity. The Salvation Army was located in the Hy-Vee parking lot with emergency canteens for those people wanting food while they helped to clean up the big mess.

The Red-Cross praised Ankeny citizens for their ability to bounce back in the storm.

Public utility companies such as Iowa Power and Light and Northwestern Bell were in Ankeny bright and early on that morning following the infamous night. Restoration of utilities took some time, but was quick considering the amount of damage that was done. Hawkeye Cablevision, who had just started to finish the hooking-up of the Ankeny area to their network, came back through and set up once again.

# **BUCKET LOADERS ... SCOOPED UP DEBRIS**



GARCIA

**. . . and trucks  
hailed it away**

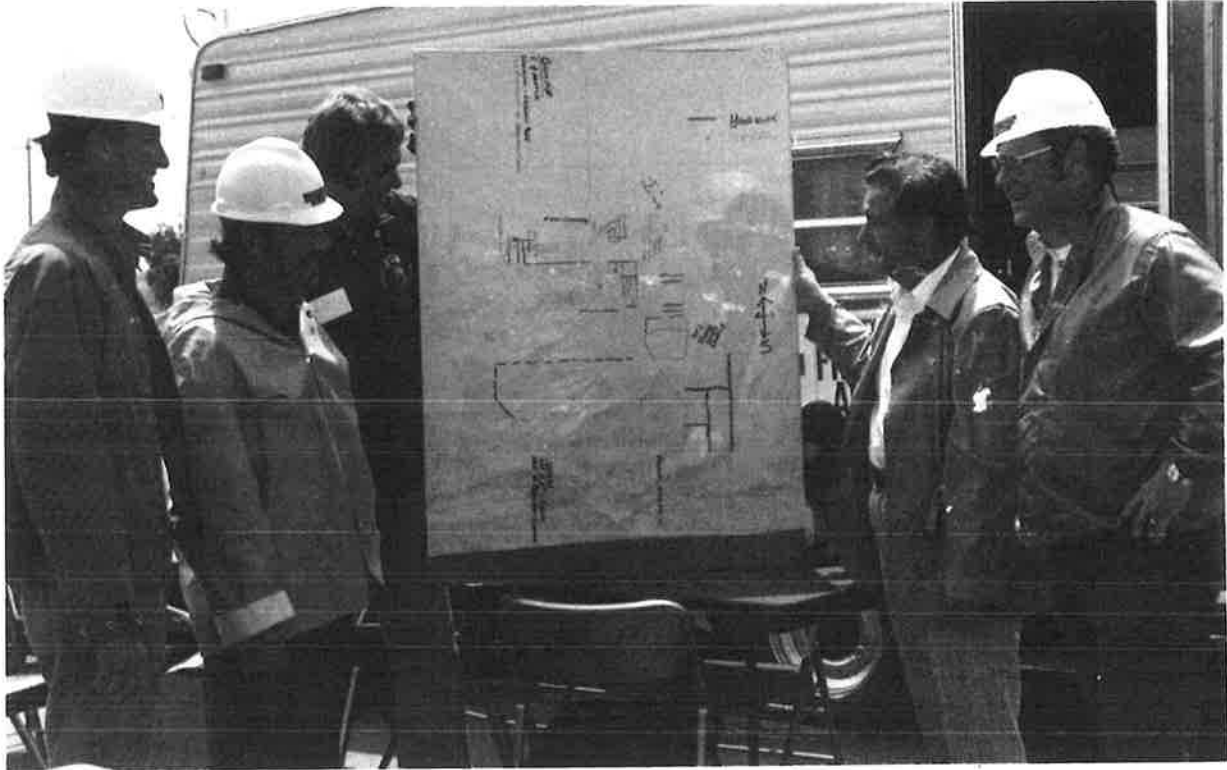


GARCIA



BROWN

# NATIONAL STATE And LOCAL RELIEF EFFORTS Were Organized And Coordinated



PRESS-CITIZEN



DORAN



# THE NEWS TRAVELED---

**Where to Find It:**  
 Comics 8-S TV, Radio 5-S  
 Editorials 6 Weather 11  
 Markets 6-S Women 9

\*\*\*\*  
**THE WEATHER** — Variable cloudiness with chance of late afternoon thunder-showers today and Friday, Highs both days in lower 90s. Sunrise 5:57; sunset 8:44.

## The Des Moines Register

The Newspaper Iowa Depends Upon

Des Moines, Iowa, Thursday Morning, June 20, 1974—Two Sections

Price 15 Cents

# DREAMS DIE IN ANKENY RUINS

## Twin tornados slam Iowa EVENING TRIBUNE

Evening Tribune—Established 1895  
 San Diego Sun—Established 1881  
 8 PARTS — 96 PAGES

a Copy News Service

San Diego Daily Journal  
 Established 1944

1974 ★ PRICE 10 CENTS

### Toll may rise 2 killed in Iowa storm

ANKENY, Iowa (UPI) — At least two persons were killed early today by a severe storm that struck this central Iowa community. Volunteer workers are combing the wreckage of several buildings in search of more bodies.

Some officers said they believe as many as six may be dead due to the damage caused by the storm which produced winds of up to 70 miles per hour.

Polk County Medical Examiner Dr. R. C. Wooters said two bodies — a married couple — had been taken to the temporary morgue at Normentary School.

The National Weather Service said three had died, confirmed.

Wooters identified the bodies as Mr. and Mrs. White, found in the wreckage of the

the southeast section of Ankeny. The search for other victims is concentrated in the southwest section of the community where several homes were leveled.

Several persons also are missing in an industrial park complex located south of Ankeny.

A shopping plaza was hard hit, and windows were blown out of all the stores in a two-block area on Ankeny's main street.

Thirty state patrol troopers and 45 National Guardsmen were stationed throughout the community.

The storm whipped through the Des Moines-Ankeny area late Tuesday and early today and caused considerable damage in several central Iowa communities.

The highway patrol said, "cars, trucks and just about everything had blown off the road."

Two major interstate highways were blocked for considerable amount of time because of the damage.

At least a dozen semi-trailer trucks were either blown off the road or flipped during the storm.

In one of the worst cases, a semi-trailer flipped over a pick-up truck southeast of Des Moines west bound lane.

The corner called near the was demolished.

### Ankeny Rushes Into Mending Job

By Gary Heinleia

Heading away the tornado-ravaged businesses — and ed remains of esions — got unkeny Thursday as that damage \$20 million. stimated damage businesses an the



### Unharmed Camper Is The Kitchen Utilities

Continued from Page One

night," Mick said, "and it's great to have help."

The Dale White family, of 200 S.E. Seventh St., spent Wednesday evening at the home of Mrs. White's sister southwest of Ankeny, where "we all too showers and ate," said Mr. White.

"My sister almost felt guilty about running the air conditioner and dishwasher while we were there!" Mrs. White exclaimed.

Investiveness marked several families' approach to problems.

Mr. and Mrs. Herbert of 113 Kluge St., used stove and refrigerator camper parked outside home while their car was off from 10:30 night to midnight Wednesday.

No Shower

"When the storm drew some water out in a big kettle," said. "And we did showers," she said.

"My sister's residence was gone."

### WORD FROM OFFICIALS:

## 'Sightseers Stay Out'

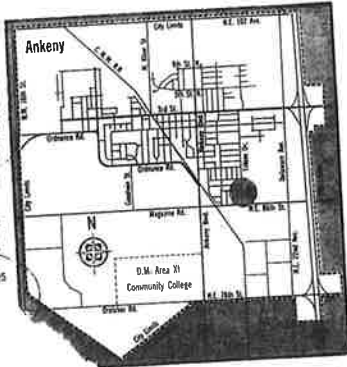
### Ankeny—

Continued from Page One

in night clothes — as they stared in disbelief at the damage wrought in 35 terror-filled minutes.

"I 50 Iowa National and 10 Iowa High remained on Tuesday.

"The office will tour Tuesday morning immediately.



TRIBUNE MAP BY JOHN WINTERHAST

"the central Iowa city hit hardest shows where the home of Mr. and Mrs. White drive was demolished.

## Two Die in Tornado Storm Damage Outside Des Moines

John Milligan of 118 E. Twp. 98 that was destroyed during

'Work Hard, But Now It's All Gone'  
**\$10 MILLION LOSS SEEN IN SUBURB**

By Gene Ruffensperger  
 Scientists know what weather does cause tornados, but no one can predict when a storm

Thousands Without Utility Service

**\$10,000 REWARD OFFERED TO FIND 10 ON LOST BOAT**

A \$10,000 reward has been offered for finding any of the 10 missing persons.

# . . . And More Help Arrived



The Iowa Highway Patrol set up a Communications center in the Ankeny Plaza parking lot.

PRESS-CITIZEN



Six traffic control points were set up around the city to keep sightseers from hampering clean-up efforts.

PRESS-CITIZEN



70 men from the 186th Military Police Co. of the National Guard helped patrol the city and man the control points.

PRESS-CITIZEN



PRESS-CITIZEN



GARCIA



TALBOT



GARCIA

# City Crews and Volunteers Worked Around the Clock



PRESS-CITIZEN



PRESS-CITIZEN



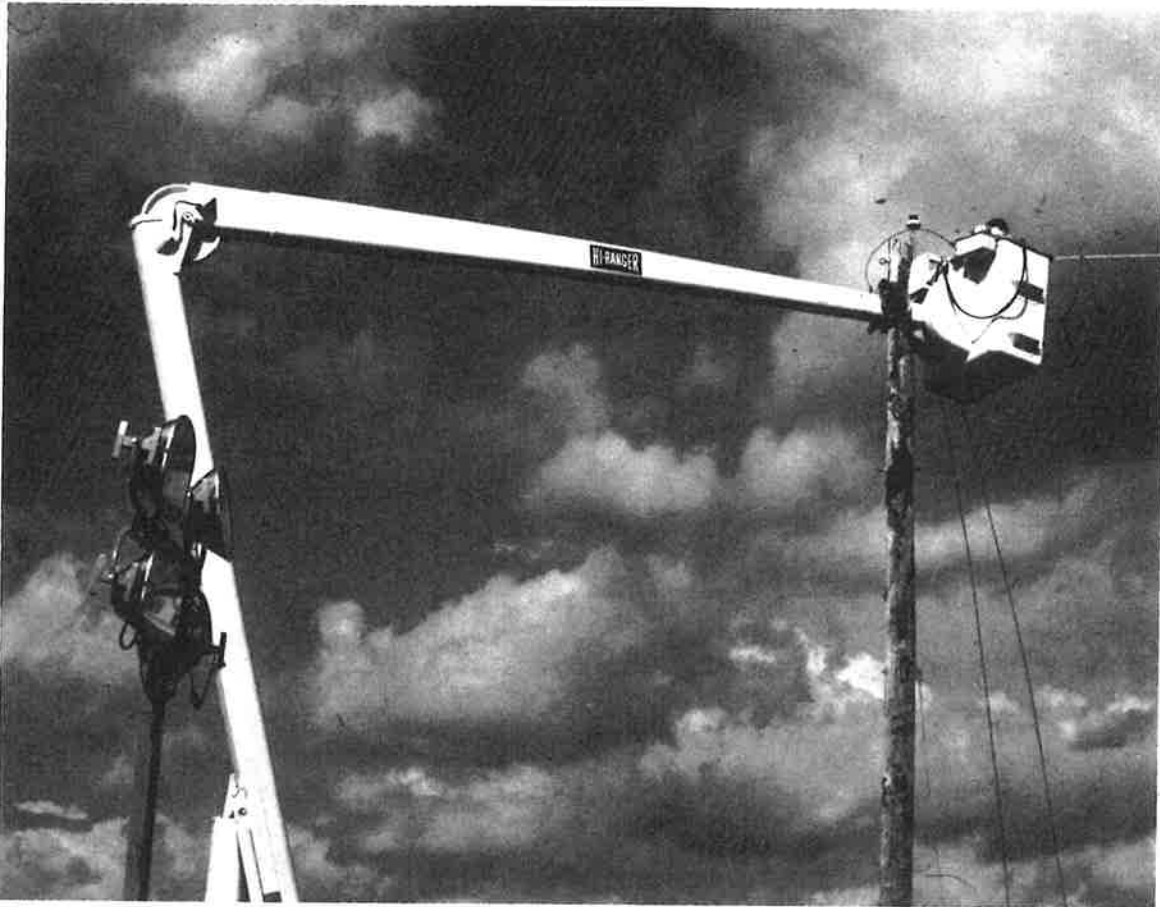
PRESS-CITIZEN

**--as ANKENY RUSHES  
into its  
Mending Job.**



PRESS-CITIZEN

# Power and Water Services were Restored--



By early Wednesday, 50 Iowa Power crewmen were working to restore power to the area, and 50 more were on duty by Wednesday night.

CHESEBROUGH



# A "DISASTER AREA" was Proclaimed--



PRESS-CITIZEN

PRESS-CITIZEN



Representative Neal Smith points out a fact to Ankeny Mayor Dr. Ollie Weigel about federal disaster relief possibilities.





Gov. Robert Ray, third from right, stands in the remains of a state liquor store in Ankeny and thanks Iowa National Guardsmen for the cleanup job they are doing. Ankeny Mayor Ollie Weigel is next to the governor.

## **---AID and Assistance from all Directions Help Re-build the Town---**

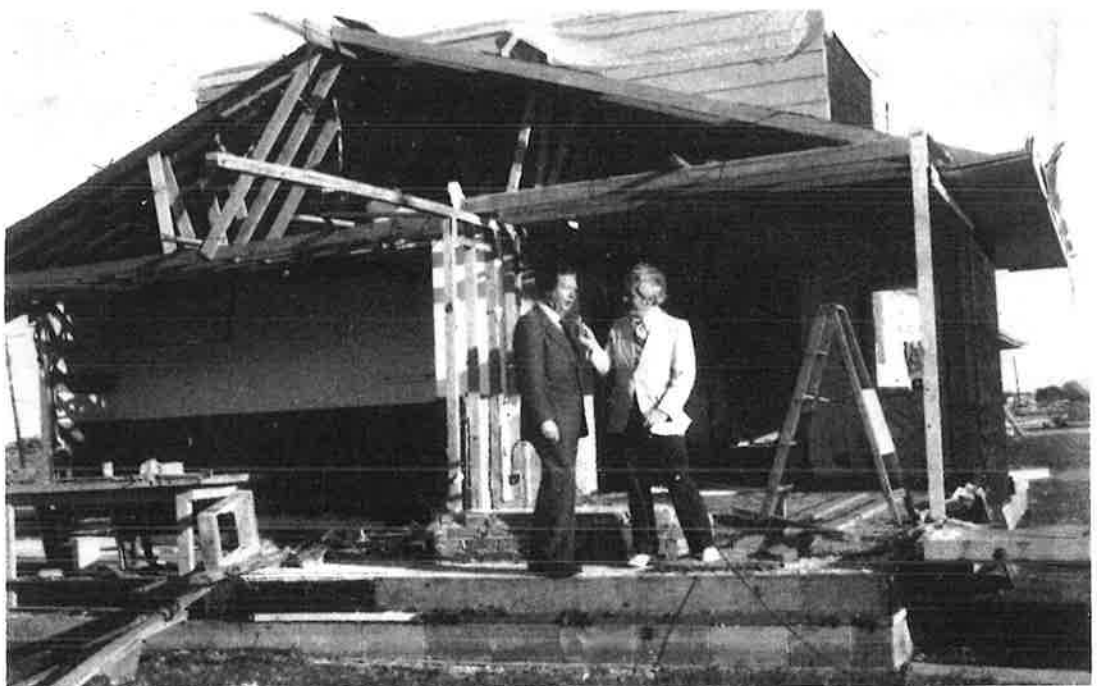
Generous organizations and people gave from their hearts to start the Ankeny Disaster Fund. The fund, formed by city officials, is for the use of families and children whose needs cannot be met by insurance or other means.

At the present, \$57,252.21 has been taken in by the Disaster Fund with about \$26,000 dispensed to families who had losses that could not be taken care of. All disbursements were treated as outright grants.

The screening work of disaster applicants was taken care of by Mr. Jim Peterson of the Polk County Department of Social Services. Peterson checked for consistency regarding the income of the applicant and his insurance coverage. With the help of governmental agencies such as HUD, Red Cross, and Department of Social Services, Peterson was able to make his determination of recipients.

Directly after the tornado, Mayor Weigel appointed Mrs. Vi Leinen, Secretary of the Disaster Fund, and Mrs. Mary Weigel as treasurer. Contributions are still welcome and applicants are still being searched for. For any information, call Mrs. Leinen at 964-3928 or Mrs. Weigel, 964-4726.

McDonald's Inc., soon to open in Ankeny, was the largest contributor to the fund when they gave their entire day's receipts on June 23 to the city of Ankeny. McDonald's gift came to \$41,238.51. Easter's Inc. presented a check of \$5,000.00 to Ankeny. The DMACC student body was helpful with a \$2,000.00 donation. URW Local 310 gave \$900.00.



Ankeny Mayor Ollie Weigel and TV man Bill Riley tape a commercial for McDonald's in order to get viewers out to the seven-restaurant chain in Des Moines to support Ankeny; All proceeds from these restaurants went to the Ankeny Disaster Fund.

# --and RECONSTRUCTION BEGAN.

OPPOSITE PAGE



PRESS-CITIZEN



CHESEBROUGH

# Looking Back on it All . . .



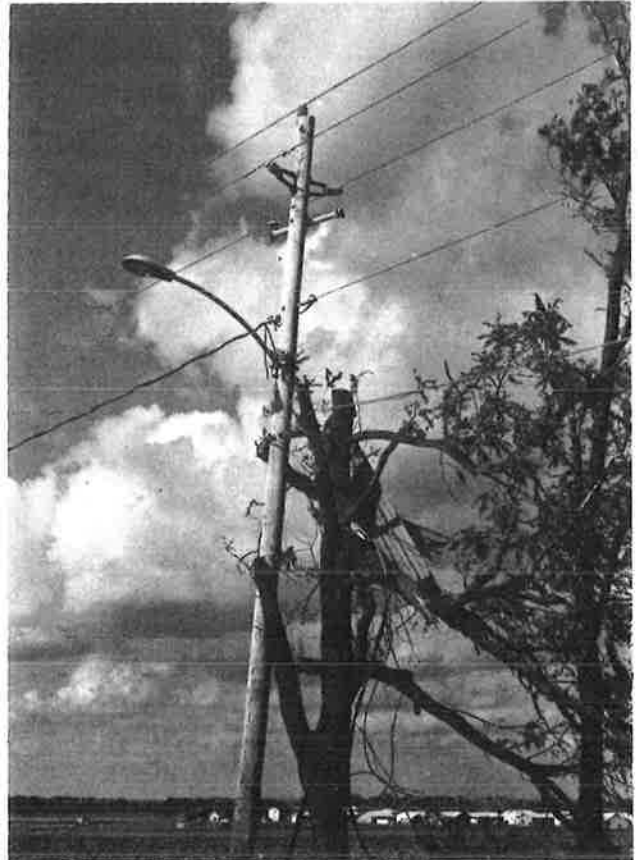
CHESEBROUGH



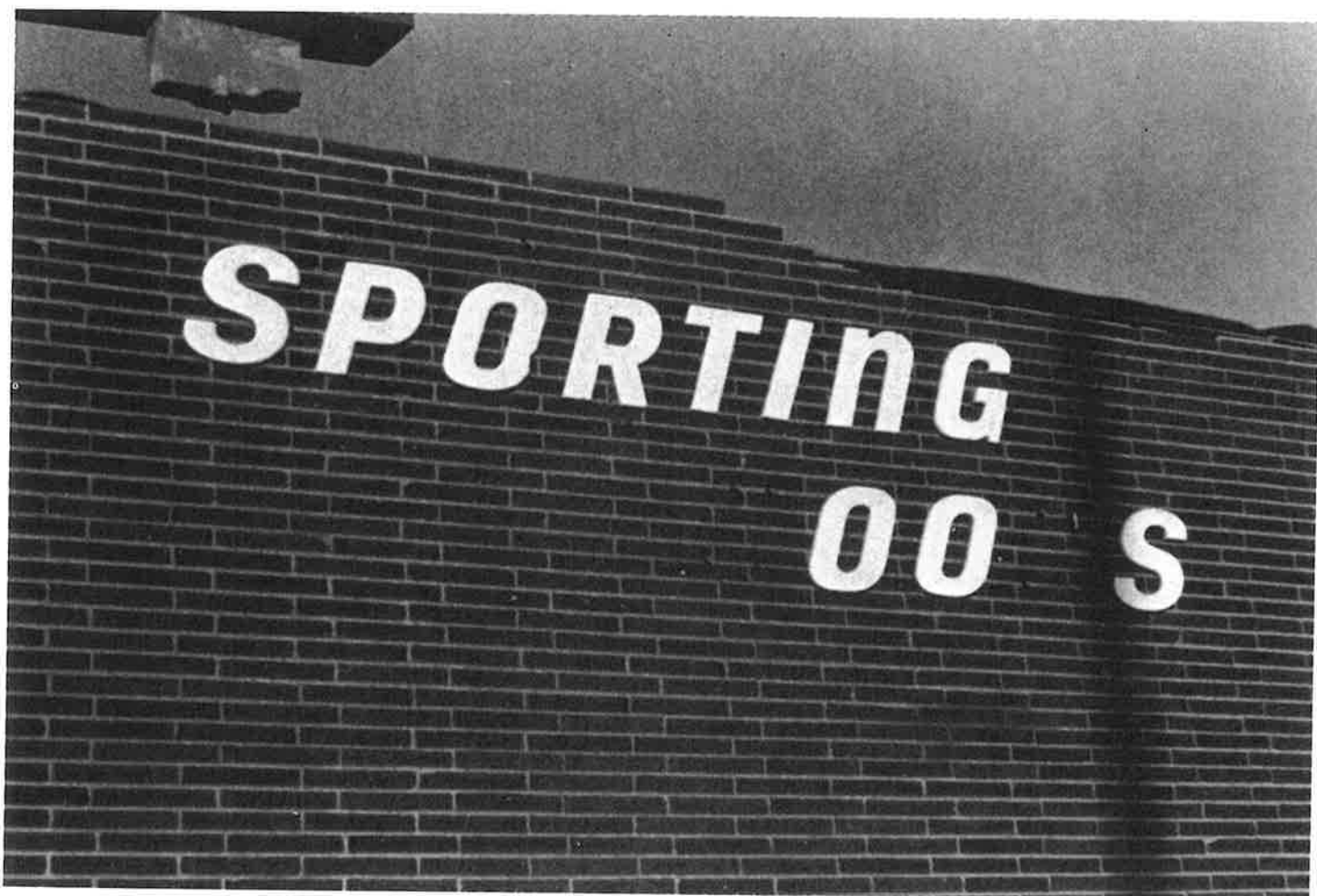
BROWN



GARCIA



***— It could have been worse!***



CHISEBROUGH

# JUST WHAT ARE TORNADOES

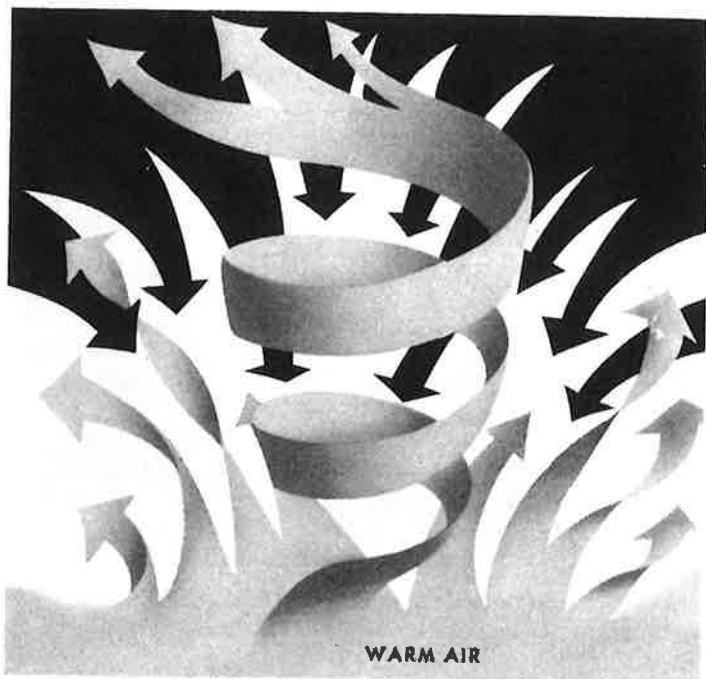
Tornadoes are local storms of short duration formed of winds rotating at very high speeds, usually in a counter-clockwise direction. These storms are visible as a vortex, a whirlpool structure of winds rotating about a hollow cavity in which centrifugal forces produce a partial vacuum. As condensation occurs around the vortex, a pale cloud appears — the familiar and frightening tornado funnel. Air surrounding the funnel is also part of the tornado vortex; as the storm moves along the ground, this outer ring of rotating winds becomes dark with dust and debris, which may eventually darken the entire funnel.

These small, severe storms form several thousand feet above the earth's surface, usually during warm, humid, unsettled weather, and usually in conjunction with a severe thunderstorm. Sometimes a series of two or more tornadoes is associated with a parent thunderstorm. As the thunderstorm moves, tornadoes may form at intervals along its path, travel for a few miles, and dissipate. The forward speed of tornadoes has been observed to range from almost no motion to 70 miles per hour.

Funnels usually appear as an extension of the dark, heavy cumulonimbus clouds of thunderstorms, and stretch downward toward the ground. Some never reach the surface; others touch and rise again.

On the average, tornado paths are only a quarter of a mile wide and seldom more than 16 miles long. But there have been spectacular instances in which tornadoes have caused heavy destruction along paths more than a mile wide and 300 miles long. A tornado traveled 293 miles across Illinois and Indiana on May 26, 1917, and lasted 7 hours and 20 minutes. Its forward speed was 40 miles an hour, an average figure for tornadoes.

# HOW DO THEY FORM?



**TORNADO FORMATION** requires the presence of layers of air with contrasting characteristics of temperature, moisture, density, and wind flow. Complicated energy transformations produce the tornado vortex.

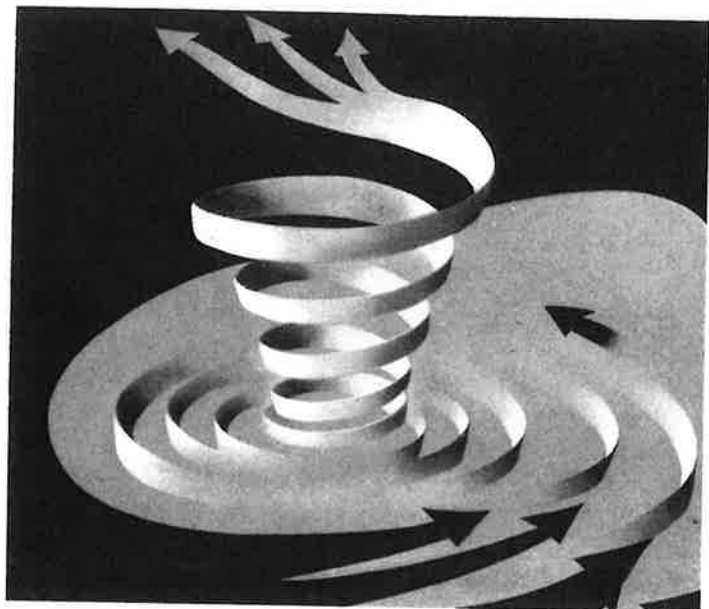
Many theories have been advanced as to the type of energy transformation necessary to generate a tornado, and none has won general acceptance. The two most frequently encountered visualize tornado generation as either the effect of thermally induced rotary circulations, or as the effect of converging rotary winds. Currently, scientists seem to agree that neither process generates tornadoes independently. It is more probable that tornadoes are produced by

## THERMAL

*Tornado formation is the result of forces set up by the imbalance created when cool air overrides warm air. The imbalance is compensated by rapid upward convection from the lower layers of warm air, which becomes a rotary flow and forms the tornado vortex.*

the combined effects of thermal and mechanical forces, with one or the other force being the stronger generating agent.

Numerous observations of lightning strokes and a variety of luminous features in and around tornado funnels have led scientists to speculate about the relationship between tornado formation and thunderstorm electrification. This hypothesis explores the alternative possibilities that atmospheric electricity accelerates rotary winds to tornado velocities, or that those high-speed rotary winds generate large electrical charges. Here, as in most attempts to understand complex atmospheric relationships, the reach of theory exceeds the grasp of proof.



*Slowly rotating air currents are constrained by external forces. As the radius of rotation lessens, the speed of rotation increases, in the same way that an ice skater increases his speed of rotation by drawing in his arms. Ultimately, these converging, accelerating, rotary winds set up the tornado vortex.*

Also see *Thunderstorms and Lightning*, both for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.

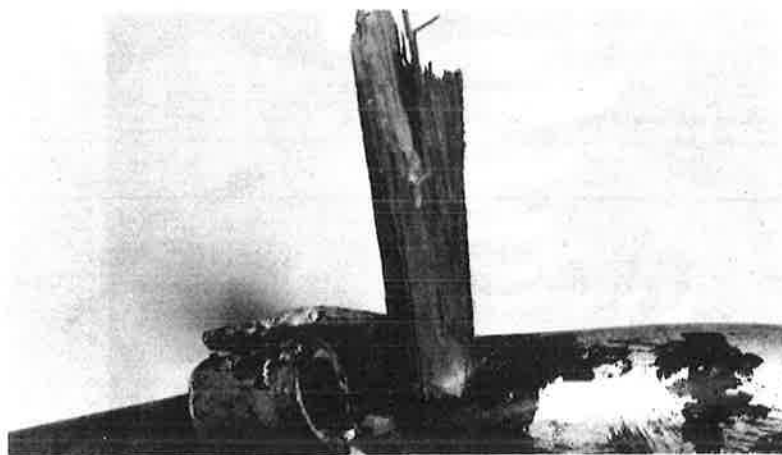
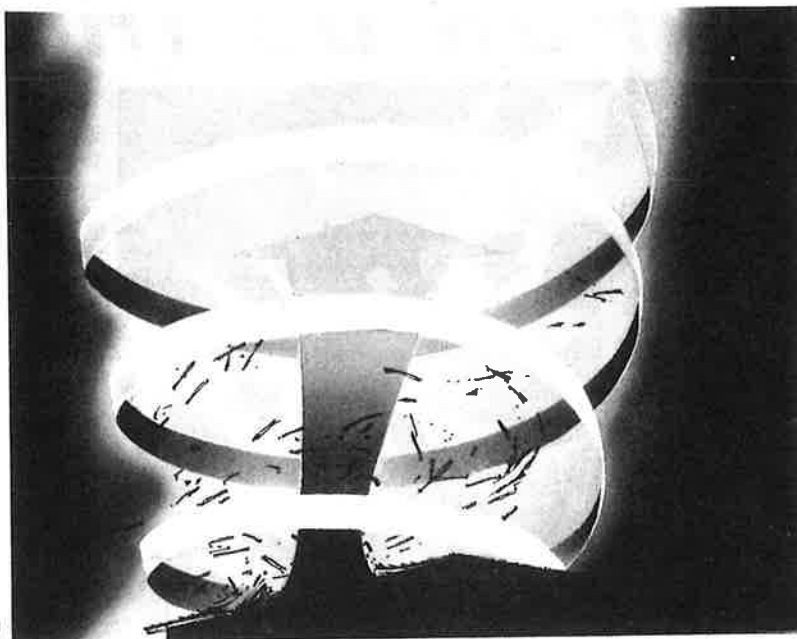
*THE WORK OF WIND AND PRESSURE.*  
As tornado-velocity winds rip at the exterior of a house, the air inside the house expands explosively into the near-vacuum of the tornado vortex. The combined effects of wind and vacuum produce the near-total destruction of a tornado's progress through populated areas.

## HOW DESTRUCTIVE CAN THEY BE?

If there is some question as to the causes of tornadoes, there is none on the destructive effects of these violent storms. The dark funnel of a tornado can destroy solid buildings, make a deadly missile of a piece of straw, uproot large trees, and hurl people and animals for hundreds of yards. In 1931, a tornado in Minnesota carried an 83-ton railroad coach and its 117 passengers 80 feet through the air, and dropped them in a ditch.

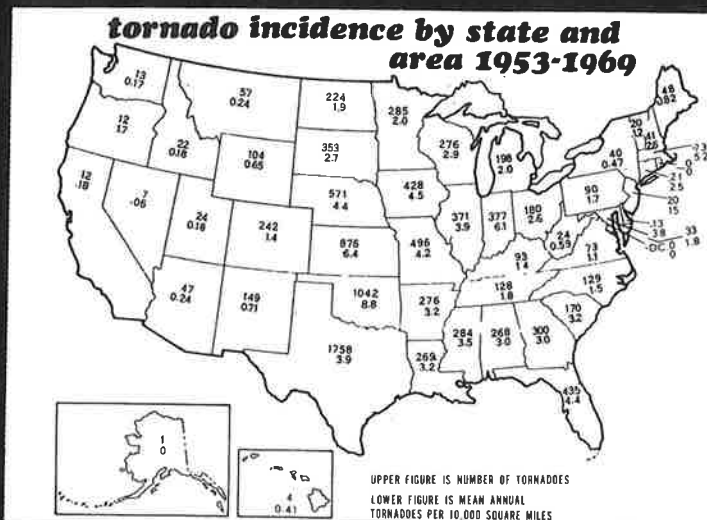
Tornadoes do their destructive work through the combined action of their strong rotary winds and the partial vacuum in the center of the vortex. As a tornado passes over a building, the winds twist and rip at the outside at the same time that the abrupt pressure reduction in the tornado's "eye" causes explosive overpressures inside the building. Walls collapse or topple outward, windows explode, and the debris of this destruction is driven through the air in a dangerous barrage. Heavy objects like machinery and railroad cars are lifted and carried by the wind for considerable distances.

Where there is such complete destruction there is usually also loss of life. On April 11, 1965, Palm Sunday, 37 tornadoes struck the midwest, killing 271 persons and injuring more than 5,000; property damage was estimated at \$300 million. Since the early 1950's, the tornado death toll has averaged about 120 per year.





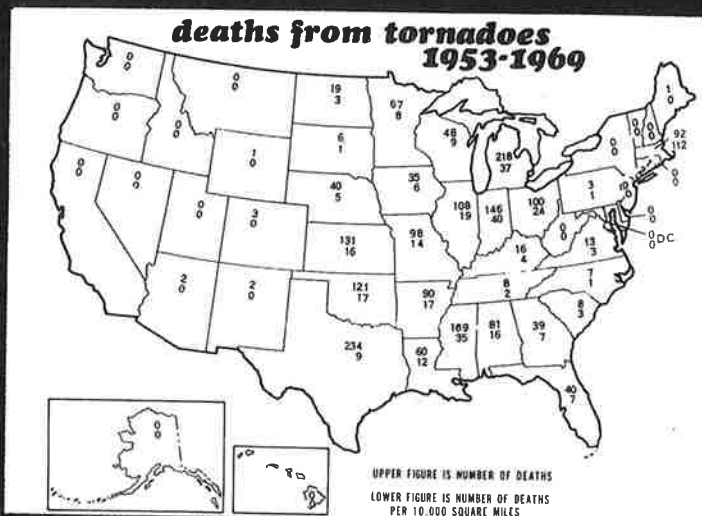
# WHERE DO TORNADOES OCCUR



During the period 1953-1969, an average of 642 tornadoes per year occurred in the United States, about half of them during three months—April, May, and June. For the same period, the annual average number of tornado days—days on which one or more tornadoes were reported—was 159. Average annual frequency by states for this period ranges from 103 tornadoes in Texas to less than three in most of the northeastern and far western states.

Tornadoes may occur at any hour of the day or night, but, because of the meteorological combinations which create them, they form most readily during the warmest hours of the day. The greatest number of tornadoes—82 percent of the total—occurs between noon and midnight, and the greatest single concentration—23 percent of total tornado activity—falls between 4 and 6 p.m.

The maps on this page show tornado incidence by state and area (above) and tornado-caused deaths by state and area (below) for the period 1953 through 1969. Figures are based on information from NOAA's Environmental Data Service.



# What Kind of ACTION . . . Can Save YOUR LIFE

## WHEN A TORNADO APPROACHES, IMMEDIATE ACTION CAN SAVE YOUR LIFE!

A tornado watch means tornadoes are expected to develop. Keep a battery-operated radio or television set nearby, and listen for weather advisories — even if the sky is blue. A tornado warning means a tornado has actually been sighted or indicated by weather radar. Seek inside shelter (in a storm cellar or reinforced building) and stay away from windows. Curl up so that your head and eyes are protected. Keep a battery-operated radio or television nearby, and listen for further advisories.

**IN OFFICE BUILDINGS**, go to an interior hallway on the lowest floor, or to the designated shelter area.

**IN HOMES**, the basement offers the greatest safety. Seek shelter under sturdy furniture if possible. In homes without basements, take cover in the center part of the house, on the lowest floor, in a small room such as a closet or bathroom, or under sturdy furniture. Keep some windows open, but stay away from them.

**IN SHOPPING CENTERS**, go to a designated shelter area (not to your parked car).

**IN SCHOOLS**, follow advance plans to an interior hallway on the lowest floor. If the building is not of reinforced construction, go to a nearby one that is, or take cover outside on low, protected ground. Stay out of auditoriums, gymnasiums, and other structures with wide, free-span roofs.

**IN OPEN COUNTRY**, move away from the tornado's path at right angles. If there is not time to escape, lie flat in the nearest ditch or ravine.

**MOBILE HOMES** are particularly vulnerable to overturning during strong winds and should be evacuated when strong winds are forecast. Damage can be minimized by securing trailers with cables anchored in concrete footing. Trailer parks should have a community storm shelter and a warden to monitor broadcasts throughout the severe storm emergency. If there is no shelter nearby, leave the trailer park and take cover on low, protected ground.

## TORNADOES ARE ONLY ONE OF A THUNDERSTORM'S KILLERS.

**LIGHTNING IS THE WORST KILLER.** Stay indoors and away from electrical appliances while the storm is overhead. If you are caught outside, stay away from and lower than high, conductive objects.

**THUNDERSTORM RAINS** cause flash floods. Be careful where you take shelter.



## LOOK FOR

### ANY PROTUBERANCE OR ROTARY MOTION AT THE BASE OF A THUNDERCLOUD SYSTEM

The ragged trailing clouds of squall lines, and certain other harmless phenomena (see pages 14, 15) are frequently mistaken for tornadoes. *Organized rotary motion* about a vertical axis is the clue to distinguishing harmless clouds and the funnel of a developing tornado. In the random motion of thunderstorm clouds, funnel clouds appear as highly organized, rapidly rotating systems. Funnel clouds are violently rotating columns of air, usually pendant from a Cumulonimbus cloud, that do not touch the ground. They become tornadoes only when they reach the surface.

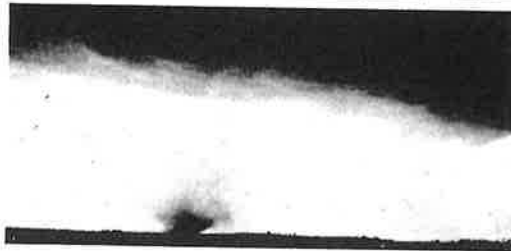
### ANY ROTATING CLOUD OF DEBRIS OR DUST NEAR THE GROUND

Some tornadoes drop from a thunderstorm cloud without developing a visible funnel-shaped cloud of their own. These invisible whirlwinds first become visible when the violently spinning column of air begins picking up debris or dust from the ground. The longer such a tornado touches the ground, the darker it becomes as pieces of material are lifted toward the thunderhead. These whirlwinds should not be confused with "dust devils," which are rarely associated with clouds.

## LISTEN FOR

### THE ROAR OF THE TORNADO'S WINDS

A tornado at night, or one hidden by low-hanging clouds, heavy rain, or buildings can still be detected—its winds have a distinctive roar which can be heard for several miles. Some people have described the sound as that of a big jet aircraft, others, as the sound of trains. When Hurricane Carla



(1961) struck Galveston, Texas, some thought the sound of a nighttime tornado Carla spawned was an amphibious tank used in rescue operations. In the January 1969 disaster in Hazelhurst, Mississippi, one survivor thought the pre-dawn twister was the mill whistle, until the house began to shake. The roar of a tornado increases as the funnel nears the ground, and is loudest when the tornado moves across the surface.

**REPORT FUNNEL-SHAPED,  
ROTATING CLOUDS IMMEDIATELY.  
IF YOU SUSPECT, BUT CANNOT CONFIRM,  
A SIGHTING, REPORT YOUR SUSPICIONS.**

National Weather Service and community warning centers can contact other observers for a better view of the storm. A questionable report, when supported by radar and other observations, can provide enough confirmation for a tornado warning to be issued.



## Did the Weller Method warn you?

### Tornado detection system deviser seeks assistance

by Marv Tuttle  
Staff Writer

Newton Weller needs your help! And with a little note from you, you might return a favor that perhaps Mr. Weller's ingenuity has done for you.

Weller has been waging a battle with the national government, bidding them to acknowledge his tornado detection system used via TV. Weller released details on his system in 1968 with reported successful results.

"The government did a survey several years ago. But it was a lousy one," remarked Weller. "They refused to acknowledge my system." His main foe has been the National Weather Service, who detect tornadoes by radar.

He's wired to President Nixon several times to get the system mutually accepted.

"I don't care what inventor finds a way to detect tornadoes. I feel there's not a better system to find tornadoes than my own. It's so accurate."

Weller started work on the system in 1956, even though he has been a storm watcher all his life. He says it has taken him 12 to 14 years of research before feeling sure of the system. Weller estimated that he's used 2,000 hours of literary work and 1,000 hours of visual work to develop his system.

In 1963, Weller put his detection unit to work for the first time when a tornado swept along Army Post Road. "We could see this one visually on the television," said Weller. "It was pretty eerie. But the testing went on. To turn something like this over to the public, you have to be darn sure what it's going to work or not."

The Weller formula for detecting tornadoes is as follows:

1. Warm up the television set as for viewing, preferably with contrast control to maximum picture position.
2. Turn the dial to highest number channel (usually 13 on VHF sets) then by adjusting brightness control, reduce the picture or blank screen until the screen reaches the threshold of

black.

3. Dial the channel selector to Channel 2. Do not reset the brightness after the initial adjustment.

4. Lightning appears on the screen as flashes. If the screen becomes bright and remains continuously bright or the darkened picture is visible and remains continuously visible, a tornado likely is within 20 miles. With a positive signal, you should be alerted to take precautionary measures, particularly if there are other signs of a nearby storm.

An approaching tornado will brighten the screen, but the screen will dim as the tornado moves away.

Weller says that he's heard of some people that are so "awe-struck that they see white on the screen that they watch right through the tornado. They really should see it flash on then head for the basement."

The tornado range which the Weller Method covers is effective from 15 to 20 miles at a minimum. It has covered from Des Moines to Grand Island, Nebraska which is 39,000 square miles.

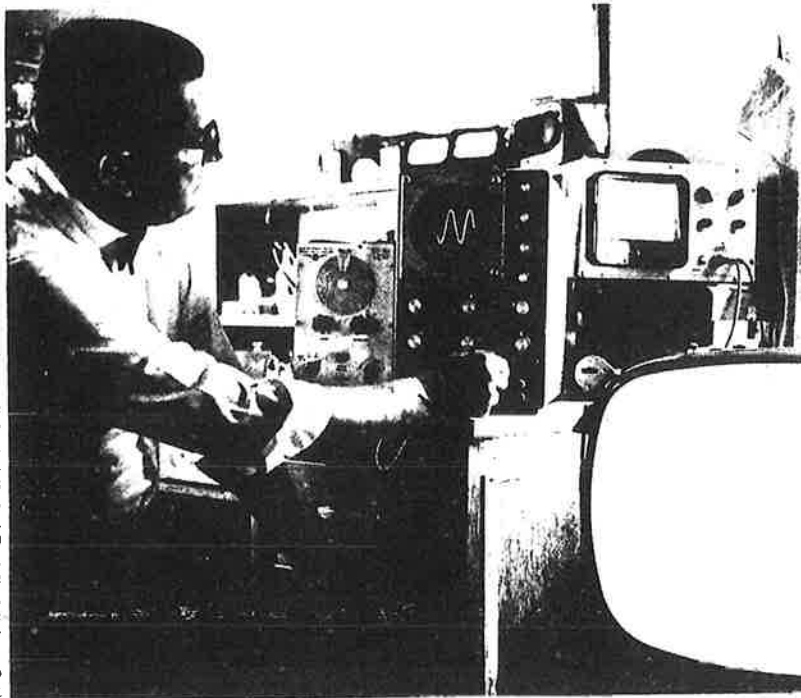
Weller feels that his system is the "most realistic" if people knew how to use it. He has had people call from South Carolina and Texas in midst of a severe storm and ask him instructions.

The Weather Service's inconsistency—no warnings or too many—has brought people in the area that tornadoes are a phenomenon which is to be taken for granted.

The West Des Moines man feels that tornadoes are not as common as people think they are. In accordance with Civil Defense rules, hospitals are supposed to get their patients downstairs with the sound of a siren.

Weller said, "But after so much, they just say 'To hell with it!'"

But when he first used his system, he "wasn't shocked" that it worked. Now Weller is working on the reason for tornadoes being so severe. The basis of his theory is



**DISCOVERER OF TV TORNADO WARNING method, Newton Weller, West Des Moines, Iowa, experiments with oscilloscope for long-range tracking of tornadoes and electrical storms. TV method is limited to 20-mile radius and Weller emphasizes "white screen" warning may appear when tornado is as little as five miles away**

magnetic anomalies or irregularities that attract tornado and lightning.

He knew that Ankeny was in "desperate trouble" on the night of the storm but wasn't sure that it was a tornado. Weller was using a different detection device—the radio. Radio static can dictate the proportion of a storm.

By radio, a tornado can be detected by staccato noises which shut off local reception.

Weller's system has made a lot of believers, including several scientists. Dr. James M. Quigg, state climatologist for Missouri, regards his method as the "missing link" in tornado detection. But Weller hasn't the

scientific background like the scientists may have as he has self-educated himself.

His bedroom is his laboratory with advanced equipment to study what fascinates him—storms.

Mr. Weller has one regret about his system, though. He hasn't kept records of those that have told him of their usage. Weller says that he received 10-12 calls from the Ankeny area thanking him with saving their lives by

using his invention. But he can't remember who they are.

In a quote reprinted from a Popular Mechanics article, it is told that Weller receives not a cent from his work.

But his reply tells it all: "How can you possibly measure in terms of financial rewards the satisfaction and happiness a man receives out of giving something to the world that will save lives?"

## Let us know. . .

If you used the Weller Method on the night of the tornado or have anything to say about it at all, please drop the Press-Citizen a line on your feelings about the

system. Accompany the note with your name and address at the bottom. It will be helpful to us as it will be to Mr. Weller in his battle with the Weather Service.

## Cut out and save

### THE WELLER DETECTION METHOD

1. Warm up the television set as for viewing, preferably with contrast control to maximum picture position.
2. Turn the dial to highest number channel (usually 13 on VHF sets) then, by adjusting brightness control, reduce the picture or blank screen until the screen reaches the threshold of black.
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5. An approaching tornado will brighten the screen, but the screen will dim as the tornado moves away.

# How to REPORT a TORNADO

U.S. DEPARTMENT OF COMMERCE / National Oceanic and Atmospheric Administration

## SEVERE LOCAL STORM SPOTTER

# Reporting Procedures

**1.** Telephone severe weather observations *immediately* to the National Weather Service or alternate agency. Place your call through the telephone operator and tell her you have an *emergency call*. If the call is long distance to the National Weather Service, it can be made *collect*. Report promptly; the storm may interrupt communications.

Law enforcement and Civil Defense spotters—report to the National Weather Service via NAWAS, radio, or other direct communications links as prescribed.

From radio-equipped vehicles, report severe weather observations to a central collection point and request them to relay it to the National Weather Service.

**2.** Tell us briefly

**what you have seen:** a tornado, waterspout, funnel cloud, heavy hail, destructive wind, or thunderstorm accompanied by frequent lightning.

**where you saw it:** the direction and distance from a known position to the storm, *e.g.*, 3 miles south of Beltsville.

**when you saw it:** make sure you note the time of your observation.

**what it was doing:** describe the storm's direction and speed of travel, intensity, and destructiveness.

**3.** Give your name and address, or spotter code number, each time you report.

---

**WHEN IN DOUBT, MAKE YOUR REPORT ANYWAY**  
**WHEN A DESTRUCTIVE STORM IS OBSERVED, report by telephone to:**  
NOAA National Weather Service \_\_\_\_\_

at \_\_\_\_\_  
(telephone)

Alternate Agency: \_\_\_\_\_

at \_\_\_\_\_

\_\_\_\_\_  
(your name)

\_\_\_\_\_  
(your address)

\_\_\_\_\_  
(telephone)

\_\_\_\_\_  
(your Spotter Code number)

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For further information,  
call or write to the  
National Weather Service  
office shown above.



\* U.S. GOVERNMENT PRINTING OFFICE: 1974-529-764 REGION NO. 8

NOAA/PA70011 1973

For sale by the Superintendent of Documents, U.S. Government Printing Office  
Washington, D.C. 20402 - Price 40 cents

# ACKNOWLEDGEMENTS

The idea for this booklet came from the membership of the Ankeny Jaycees, who thought that many of the residents of Ankeny who had experienced the tornado of June 18 would appreciate a photo-story of that experience.

The idea and a funding commitment for publication were turned over to me as Jaycee Publicity Chairman, with instructions to design the booklet and have it published.

I enlisted the help of Ron Sampson and Marv Tuttle of the Ankeny Press-Citizen, and Dennis Martin, an Iowa State student, to help with the text, photo-editing and general layout of the book. The cover photo was taken by Lynn Vogt of Ankeny, and the photographic separations needed for printing the cover were generously donated by Bill Rocap of Meredith Publications. Larry Malmin of Des Moines did the final layout using copy written by Marv Tuttle, myself, and the National Weather Service.

The following people submitted pictures for inclusion in the booklet. Due to the generous number of pictures available, the job of compiling the best shots was one of editing, and not finding.

Each of the photographers has been identified by their last name next to their photo(s).

Judy Garcia  
Dennis Martin  
John Yeager  
Roy Park  
Lynn Vogt  
Wallace Maynard  
Paul Miller

Eclectic (Vern Doran)  
Tom Brown  
Pete Chesebrough  
Ankeny Press-Citizen (Mostly Marv Tuttle)  
Des Moines Register-Tribune  
Commercial Photo (Ernie Hoopes)  
National Weather Service

Speaking for myself and the Ankeny Jaycees, I want to thank all of the people who have given generously of their time, ideas, photos, and other help that was necessary to insure the success of this effort.

Peter Chesebrough  
Jaycee Publicity Chairman



ROBERT D. RAY  
GOVERNOR

## Office of the Governor

STATE CAPITOL  
DES MOINES, IOWA 50319

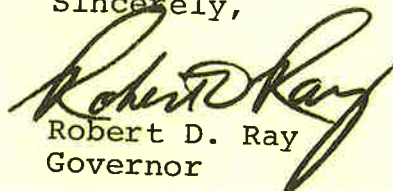
TO THE CITIZENS OF ANKENY:

Your community can take great pride in the rapid and dramatic recovery from the nightmare of the tornado which struck Ankeny on June 18, 1974.

Damage, in dollars, totaled more than \$13 million. Damage, in the loss of several lives and the disruption of hundreds of others, will always be immeasurable.

The rebuilding you have accomplished is solid evidence of the strength and resilience of the spirit of your community. It also demonstrates that you who call Ankeny your home have a great pride in its present and an even greater optimism about its future.

Sincerely,

  
Robert D. Ray  
Governor

RDR:rg

