

# Clay County Historical Society

Clay County Historical Society Newsletter September/October 2004

Volume XXVII No. 5

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A Moorhead fireman hoses down the wreckage of Northwest Airlines Flight 5 which crashed north of Moorhead, October 30, 1941. Fourteen people lost their lives in the crash, the worst in Minnesota aviation history. See page 7 for the story. Forum Communications Company Collection.

## President's Column

By CCHS President, Dale White

It was maybe just the summer doldrums. Or maybe the fact that the board traditionally does not meet the month of August. But I could think of absolutely nothing to put in this space for this issue.



I wanted to just write "gone fishing" or "out to lunch", but I realized that wouldn't fly. So I decided to look back through some old CCHS newsletters. Maybe I could just lift some column from a departed ex-president.

I started scanning and noticed an article from a 1996 newsletter about our inventory of past yearbooks from Clay County schools. The article listed the few yearbooks we held and asked for members to fill in the gaps.

Well—there you are!! I was sure our yearbook collec-

tions had not increased greatly since 1996. I could nag our readers about donating old school yearbooks. Seriously, any family in the county that spaced out and raised four or five children would probably have these treasures in their attics that would fill out our collections. No doubt there are lots of other family keepsakes in those same attics that would be better kept and preserved if they were donated to their historical society.

I think sometimes we have used the President's Column to nag CCHS members a little too much.

"Attend the annual meeting" or "You must come to the new exhibit in the museum!"

"Get more active!"

Or—maybe—it was just the summer doldrums.

## Calendar

June 2004—March 27, 2005

*Old, New, Borrowed, Blue: Weddings in Clay County*

August 13, 2004—January 24, 2005

*Mexicanos in the Red River Valley* photo exhibit

September 21, 2004—October 31, 2004

*Top 10 Endangered Historic Properties in Minnesota* display from the Minnesota Preservation Alliance

Oct. 23 "Historic Preservation in Moorhead,"  
Terry Shoptaugh, 2:00

Nov. 20 Bob Herskovitz, MHS Chief Conserva-  
tor, Preserving Your Family Heirlooms,  
10:00, and Kate Plagman, Onstine  
Wedding Collection, 12:00

Dec. 11 Holiday Open House, 2-4

Jan. 8, 2005 Rok Day, traditional spinning and  
weaving, Fiber Artists Guild members

January 29, 2005—March 12, 2005

*Here Comes the Bride: Weddings in America*  
traveling exhibit from Rogers Historical Museum

Feb. 26, 2005 Communiversity Display Class  
by Pam Burkhardt

Schedule subject to change



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Hjemkomst Center, 202 1st Avenue North  
PO Box 501, Moorhead, MN 56561-0501  
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[www.info.co.clay.mn.us/history](http://www.info.co.clay.mn.us/history)

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### NEWSLETTER PRODUCTION

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Pam Burkhardt, Contributor  
Mark Peihl, Contributor

## Care of family keepsakes focus of programs Saturday, Nov. 20

You won't want to miss our special program Saturday, November 20, featuring Chief Conservator from the Minnesota Historical Society (MHS), Bob Herskovitz and Concordia graduate and former CCHS intern Katherine Plagman. Herskovitz's workshop will begin at 10:00 am, and Plagman's will follow at noon. Guests are welcome to bring a brown bag lunch. The program is free for CCHS members, \$2 per person for the public.

Herskovitz will speak about proper care and conservation of beloved family keepsakes and textiles (such as wedding dresses, quilts, etc.). He loves to work from examples brought by the audience, so bring your treasured items for first-hand recommendations!

Herskovitz has years of training and experience. The MHS Conservation Department is responsible for the preservation of all collections in the custody of the Minnesota Historical Society. These collections include manuscripts and business records, archaeological artifacts, books, photographs, films, sound recordings,

museum objects, reels of microfilm, works of art, and collections housed at the Society's historic sites.

Plagman will speak about her experience working with Onstine Family artifacts in CCHS' collection in preparation for the *Old, New, Borrowed, Blue: Weddings in Clay County* exhibit. She did physical analysis on Charlotte Onstine's 1940s wedding dress, and extensive research on the dress styles of that period.

Another program to mark on your calendar is "Displays on a Shoestring Budget" by our very own Collections Manager Pam Burkhardt on Feb. 26. The workshop is geared for students and those required to make small displays for their church or organization. It is offered in conjunction with the FM Communiversity and there will be a \$20 charge, \$10 for students. Burkhardt has 20 years of experience and has designed over 1,000 displays. More information will be included in future newsletters.

Call 218-299-5520 for info on any of these programs.

## Kassenborg Block and Douglas House make Top 10 Endangered list

CCHS and the Fargo-Moorhead Heritage Society have teamed up this year to bring you the traveling display *Minnesota's Ten Most Endangered Historic Properties* from the Preservation Alliance of Minnesota. The display will be in the atrium in front of the Clay County Museum from September 22 through October 31.

The historic Kassenborg building and Douglas House in Moorhead are #3 on the list, though the two buildings are now being included in redevelopment plans for that block.

Properties are listed for a variety of reasons; some are abandoned and subject to vandalism or are threatened by encroaching development. Other sites include the Danebod Folk School in Lincoln County (#4), Dakota County's Pilot Knob Oheyawahe (#8), and the Morehouse Dam in Owatonna (#10). Site #1 is the Ford

Building in St. Paul.

You are encouraged to submit nominations of endangered historic properties in your [Minnesota] area on the Alliance website: [www.mnpreservation.org/portfolio.10\\_most\\_endangered.php](http://www.mnpreservation.org/portfolio.10_most_endangered.php)

Or by mail to: Preservation Alliance of Minnesota  
International Market Square  
Suite 54, 275 Market Street  
Minneapolis, MN 55405-1621

Terry Shoptaugh, Director of the Northwest Minnesota Historical Center at MSUM, and author of the recently released book *Images of America: Moorhead*, will be presenting a program about historic preservation in Moorhead on Saturday, October 23, at 2:00 p.m. in the auditorium at the Hjemkomst Center. The program is free.



## Outreach Displays

	<u>Open</u>	<u>Close</u>
Barnesville Public Library	October	January
Hawley Public Library	October	January
Moorhead Public Library	[special display]	
Fargo CVB	July	November

Part 2 of the toy display will be at the Barnesville Public Library. BOYS' TOYS features active toys recalling the days of noisy activity. Be prepared to knuckle down with these playthings from the past.

The Hawley Public Library opens **EATING OUT** in October with artifacts and photos from CCHS' award-winning exhibit *Eating Out in Clay County*. Artifacts and photos recall eating in cafes and restaurants, eating at work and at school.



**WELCOME!** The hospitality industry is the topic this summer at the Fargo Convention and Visitors' Bureau along I-94. Serving dishes, plates and menus from the past may tempt visitors to sample the culinary welcome we provide today! Don't forget your room key!

The Moorhead Public Library hosts a special display starting in October created by the Da-Sota Postcard Club. This display is part of the club's programming held at the library.

The Fargo Dome has a temporary display on the Hjemkomst Center in a case shared by CCHS and HHIC.

### IN-HOUSE DISPLAYS

The special section of the *Old, New, Borrowed, Blue* exhibit is feature in the CCHS hall case showing one collection - *Five Generations of Wedding Dresses*.

CCHS arranged a new display of exquisite, hand-decorated china in the lobby area. These items were painted by Beulah Forness who holds china-painting classes in the building Tuesday mornings.

## Artifacts & Donors

### July/August 2004

#### Donors include:

Moorhead: Meredith Bloomquist, Robert Gerke, MSUM Archives, Herbert and Elizabeth Johnson Family, Phyllis J. Nelson

St. Paul: Beverly J. Hest

Fargo: North Dakota Institute for Regional Studies

West Fargo: Alice Ellingsberg

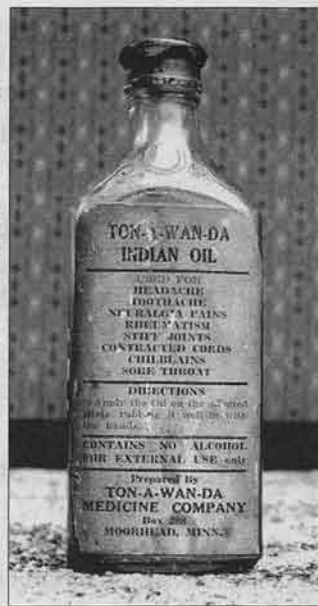
Tucson, AZ: Charlotte Onstine

Seattle, WA: Verbeck Smith

Anonymous

**Artifacts:** (4) boxes of negatives by John Hest, Hawley ca. 1960-1990s; (2) photo prints b/w of Mrs. Verne's Campfire group 1934-1935 identified, and Miss Dodds' kindergarten class at MSTC 1954-1955 identified; photo postcard of Glyndon Consolidated School dated 1913, information about Kate Louise Kittredge (Glyndon connection), 12" ruler from Duncan MacNab Druggist and Stationer; book, *Minnesota: The State and its Government* by Joe Kise and (8) Dilworth High School Annuals for 1954, 1956, 1958-61, 1965, 1966; Flaten photo of J. E. Liebe, photo & newspaper print of early Moorhead business street used in a 1930 newspaper story; mesh belt from Martinson Jewelers in original box, working 2-piece hairdryer from around 1950; bottle (and partial contents) of Ton-a-wan-da Indian Oil prepared by Ton-a-wan-da Medicine Company, Moorhead; (2) boxes of Keystone glass-plate slides used at the Campus school; Viewmaster Junior wall projector and views and a comptometer used at Nicholson Oil Company; (3) tools used by the Moorhead Ice Company.

**Items copied:** Clay County Superintendent of Schools census lists, teacher lists and school listings; photos of school and people of Oakport and Kragnes Townships



## Win dinner at Sarello's in CCHS' Romance Raffle

In the spirit of our new exhibit *Old, New, Borrowed, Blue: Weddings in Clay County*, CCHS is kicking off a raffle for a volley of romantic prizes! The drawing for the Romance Raffle will be held on Valentine's Day, February 14, 2005, at 3:00 p.m. (need not be present to win).

**1st Prize**—\$100 gift certificate for a Romantic Dinner for Two at Sarello's Restaurant in Moorhead (sponsored by Voxland Electric)



**2nd Prize**—One yard of handmade



Bobbin Lace in the heart pattern shown left, by CCHS Curator Pam Burkhardt

**3rd Prize**—Scandinavian Iron candle holder from HHIC

Other prizes include one dozen gorgeous red roses, \$20 toward creative framing for a photo of one's choice by expert framer Steve Johnson, and a gift certificate for Widman's Chocolate.

Tickets for the raffle are \$2 each, and can be purchased at the CCHS Office Monday through Friday, or from CCHS Staff and Board Members whenever you see them out and about.

## SNOWBIRD ALERT!

We have just one small favor to ask....

Our newsletter is sent at a non-profit bulk rate, and cannot be forwarded, nor can it be held when you are temporarily away.

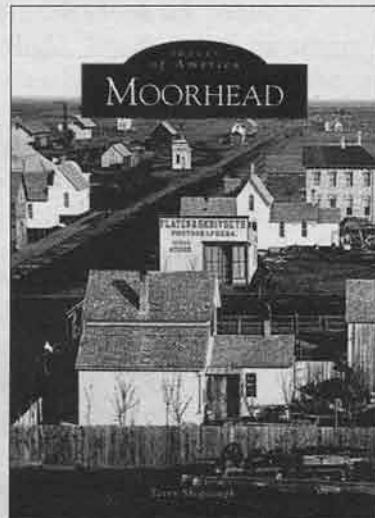


Unless we have your correct address or instructions not to mail out the newsletter during a certain time frame, you do not get your newsletter, and we are charged an additional 90 cents for every newsletter that is returned to us.

Please help the historical society save money for educational exhibits and programs, and assure that you get your CCHS newsletters, by notifying us of your winter address or letting us know if you are going to be away for any length of time. Your help is appreciated!

## New book includes photos from CCHS collections

*Images of America: Moorhead*, a collection of historic photographs, captions and commentary edited and written by MSUM archivist Terry Shoptaugh, was recently released by Arcadia Publishing.



Part of Arcadia's *Images of America* series celebrating the history of neighborhoods, towns and cities across the country, the 128-page paperback includes more than 200 photographs dating from 1860 to the present. Arcadia is the leading publisher of regional and local history in the United States.

Moorhead was founded in 1872 as a major stop on the Northern Pacific Railroad during its push toward the Pacific Ocean. Earning an unenviable reputation in its early years as a wide-open town dominated by saloons, the city eventually developed into an important rural service center.

The photographs document Moorhead's development from "a wind-beaten prairie" into "a complex civilization," as Sinclair Lewis once described rural America's growth, in a span of a couple generations.

Shoptaugh is also the author of *Roots of Success*, a history of the Red River Valley sugar beet growers, and is currently working on another book about a North Dakota businessman who helped German Jews immigrated to the United States in the 1930s.

*Images of America: Moorhead* sells for \$19.95 and is available in the Heritage Gift Shop in the Hjemkomst Center and at local bookstores.

# *The Worst Plane Crash*



Investigators study the skid marks left by the ill fated DC3 as it crashed on the grounds of the Moorhead Rod and Gun Club. The view is to the west. Note the ravine at left. The plane slid across the field in the foreground, hopped the ravine and crashed on the far side. Forum Communications Company Collection.



# in Minnesota History

By Mark Peihl, CCHS Archivist

On October 30, 1941, Northwest Airlines Flight 5 from Minneapolis to Fargo crashed north of Moorhead resulting in the deaths of 14 passengers and crew. It's still the worst aviation disaster in Minnesota history. However, the accident did have one positive note. The sole survivor was ironically the pilot, Captain Clarence Bates. Never before had a pilot survived such a massive crash. His recollections of the final seconds of the flight helped reveal a critical flaw in the airplane. Its correction may have spared scores of other passengers from a similar fate on subsequent flights.

After World War 1, the US Post Office Department experimented with using planes to carry mail. Individual pilots and airplane manufacturing companies bid on routes between cities. The federal government established strict safety rules for air mail carriers. The regulations worked. In the early 1920s, one commercial pilot died for every 13,500 miles flown. For Air Mail Service pilots, the rate was one death for every 463,000 miles.

Members of the traveling public took notice of the speed planes could get around. Mail carriers began carrying passengers as well. At first, travelers just strapped on a helmet and climbed into a spare cockpit. But, by the late 1920s, companies were specializing in passenger service. Those with enough money, and/or those who were in a big hurry, could ride in enclosed planes designed to carry cargo, usually Ford or Fokker tri-motors. The accommodations were expensive, cold, cramped, noisy, rough and filled with exhaust fumes. Airsickness was a constant problem.

In March 1931, a Ford tri-motor crashed in Kansas killing Norwegian immigrant and Notre Dame football

legend Knute Rockne. The crash shook the public's confidence in commercial flight. The fledgling passenger airlines of the early 1930s clearly needed a better plane.

In 1932, TWA sent manufacturers a request for a new plane designed to meet their specifications rather than purchase off-the-shelf cargo craft. Tiny Douglas Aircraft Company came up with a remarkable plane to fit the bill. Dubbed the DC-1 it quickly went through changes to become the DC-3, one of the most venerable planes in aviation history. Fitted with two powerful motors and variable-pitch propellers (more about that later), the all-



A Douglas DC-3 similar to the one which crashed north of Moorhead. Courtesy of U.S. Centennial of Flight Commission's website, [www.centennialofflight.gov](http://www.centennialofflight.gov).

metal craft boasted an insulated, heated, sound-proofed passenger compartment which could hold 22. The DC-3 revolutionized air travel. Over 10,000 were produced, most in the military version: the C-47 transport. More than 400 are still flying (there are two at the Fargo Air Museum).

Captain Bates' plane on Flight 5 was a DC-3. Northwest Airlines had purchased number NC 21712 in April 1939.

Continued next page...

According to later investigators, the plane and its equipment had "received the overhauls, periodic inspections and checks...provided for in company practice and approved by the Civil Aeronautics Administration." (The CAA was a predecessor to the Federal Aviation Administration. Unless otherwise identified, all quotes are from the Civil Aeronautics Board's report of the crash investigation, adopted January 30, 1942. The CAB was the CAA's safety regulatory arm.) The plane was in good shape.

Flight 5 was scheduled to leave Minneapolis at 12:00 midnight with arrival at Fargo at 1:33 a.m., but departure was delayed 13 minutes. The flight crew included First Officer Alden Onsgard and Stewardess Bernice Blowers. Co-pilot Onsgard, age 25 of Minneapolis, had logged over 1,300 hours in the air, 407 since coming to work for Northwest the previous May. Miss Blowers was from Welcome, Minnesota. She had worked for Northwest since April and had recently become engaged to be married.

Captain Bates, Minneapolis, was 41 and had over 7,000 air hours. He had worked for Northwest since 1932, as First Officer, then Captain. Bates had lived for a time in Fargo with his wife and two children while flying Northwest planes between Fargo, Bismarck and Winnipeg. Earlier in life he had taken up flying as a hobby and turned it into a vocation when he lost his job because of the Depression. He was also an avid ham radio operator and photographer.

As he prepared for the trip, Bates conferred about weather conditions with another Northwest pilot who had just reached Minneapolis. The pilot had experienced icing conditions at 7,000 feet above sea level around Fargo. Bates also checked the most recent (10:30 p.m.) weather forecast for the area flown and the current conditions at the Fargo airport. The forecast reported that a cold front had passed over Fargo from west to east. Icing conditions could be expected anywhere behind the front. The forecast for the Fargo's Hector Field "predicted low ceilings of from 200 to 400 feet during the early part of the period of the forecast but lifting to 600 to 1,200 feet about midnight and to about 1,500 by 5 a.m." Visibility was forecast to be "from 2 to 4 miles, improving to 6 or more by 1:30 a.m." (Ceiling refers to the height of the bottom of the cloud cover above the ground. Flying altitude refers to the plane's height above sea level. As Fargo is about 900 feet above sea level, a plane flying at 1,500 feet would actually be 600 feet above the ground.)

Bates discussed the flight plan with Northwest's Minneapolis dispatcher and decided to fly at 2,500 feet above sea level from Minneapolis to Alexandria, then at 2,700 feet for the remainder of the trip to avoid icing. Usual altitude for the trip was 4,000 to 6,000 feet. Northwest regulations required a ceiling of at least 600 feet for a safe landing at Fargo. If the ceiling at Fargo was lower than that when flight 5 arrived, Bates was to proceed to Bismarck. Passengers were notified of the alternate plan and offered hotel accommodations and a later flight. Twelve got on the plane.

(Flying in 1941 was still an expensive alternative to rail travel. Flight 5's twelve passengers reflected this. All but two were business travelers. One, the wife of a retired New York theatrical agent, was off to visit family in Seattle. The other was hurrying home to his critically ill wife. The passengers were fairly affluent. They included three presidents of companies, three sales managers, two prominent business owners, and an attorney. For a list of the passengers, see the side bar on page 10.)

Throughout the flight, Bates frequently checked for icing on the wings with a flashlight. Near Barnesville he noticed very light ice. Not enough to worry about, but his airspeed indicators began acting up. The indicated speed dropped from 165 mph to about 130. He assumed that ice had fouled the meters. He ignored them the rest of the trip.

Just before reaching Hector at 1:47 a.m., Bates received an updated condition report taken at 1:30. The Fargo ceiling had been lifting, but was still at 500 feet with visibility at eight miles and a north-northwest wind at 17 mph. Heading north, Bates flew over Hector at 1,800 feet above the ground, turned around to the west and passed over the field again heading east. Bates had Onsgard drop the landing gear and began descending. With the ceiling so close to Northwest's minimum and apparently lifting, he decided to descend to 600 feet, turn around and pass over Hector at his 600 foot minimum to see if he could break through the clouds. Called "taking a look," this was a fairly common procedure for pilots at the time.

While descending, he crossed the Red River. At 600 feet above the ground, still in the clouds, heading southeast, with more ice building on the wings, Bates leveled out. Just then, Bates related, "the airplane started to act peculiarly and I knew something was the matter...I yelled, 'Gear up,' to the co-pilot, the idea being to keep all the speed I could possibly get, and increased to full horsepower to fly straight ahead at 1,500 feet [600 feet above



the ground] until I could find out what was the matter... the airplane started to flutter, to shake, and the controls worked hard... About this time we must have settled [lost altitude], because I started seeing lights (probably of Moorhead), saw all the lights on the horizon, and I knew we were in a level position from the instruments, and from the fact that the lights were all on the horizon, and it was just a few seconds after that we crashed." The plane came down north of Moorhead on the grounds of the Moorhead Rod and Gun Club, just east of the Club's trap range.

Besides Bates, the only other witness to the accident was E. M. Gregory, agricultural development agent for the Great Northern Railway. Gregory was returning home to Fargo from East Grand Forks, traveling south on U.S. Highway 75. In 1941, the route of U.S. 75 followed present County Road 3. From the north the road curves around to the southwest when passing M. B. Johnson Park, then curves back to the south between St. Joseph's and Riverside Cemeteries becoming 11<sup>th</sup> Street, which then passes the American Crystal Sugar Plant. The plant had not yet been constructed in 1941.

Gregory testified that when  $\frac{3}{4}$  mile north of the crash site, heading southwest, he heard the plane, its engines sounding fine and saw its lights out his left window. As he approached the curve by the cemeteries, he again saw the plane, much lower now, so low that it would have to

either land or crash. He didn't see the crash but immediately saw a huge fire erupt. From examination of marks on the ground, investigators later concluded that the plane "struck the ground [heading southeast] in an open field in almost a level altitude, with power on, and at a speed of approximately 90 mph. The tail wheel and the tips of the left and right propeller struck the ground almost simultaneously... It then jumped over a ravine approximately 16 feet deep and 80 feet wide and struck the bank on the opposite side head-on. It bounced over the top of this bank and came to a rest on level ground just beyond it, right side up." Onboard clocks had stopped at 2:04 a.m.



Captain Clarence Bates is deposited by federal investigators from his hospital bed. Standing left to right are: Fred Novinger, Chicago, senior air inspector for the Civil Aeronautics Administration; Frank E. Caldwell, Chicago, chief inspector of the safety bureau of the Civil Aeronautics Board; Brigadier General Donald H. Connelly, Washington, CAA Administrator; W. F. Marshall, Minneapolis, eastern division superintendent of Northwest Airlines; Harold R. Neely, Chicago, regional CAA supervisor and George E. Gardner, St. Paul, vice president and general manager of Northwest Airlines. Forum Communications Company Collection.

Gregory turned east off 75 onto present County 18 and hurried toward the crash site. He found Captain Bates lying on his back, dazed and injured near the burning wreckage. The pilot had been thrown through the plane's 12 inch by 36 inch wide windshield. Bates pleaded with Gregory to get the passengers out. Gregory tried to reach the cabin door, on the left side of the fuselage, but the north-west wind blew the intense heat from the fire that way making it impossible to approach. He tried the right side but could not hear anyone inside and

could see only fire through the windows. Gregory managed to get Bates a safe distance from the wreckage, the pilot struggling to reach the plane himself, desperate to help those onboard.

Also traveling south on U.S. 75 were Eveline Berg, of

Continued next page...

Moorhead and her companion Charles Baily of Columbus, Ohio. They had just left a nearby nightclub when they happened on the scene. Gregory left Miss Berg and Baily to care for the pilot while he hurried into Moorhead to notify authorities and call an ambulance.

The Moorhead Fire Department and an ambulance arrived soon after. Bates was taken to Fargo's St. John's Hospital where he was treated for remarkably minor injuries - a cracked vertebrae and damage to his right hand and arm. (He was released after a week at St. John's.) Authorities had contacted Northwest Airlines officials and U.S. government crash investigators. At 3:25, the Civil Aeronautics Board's Senior Investigator in Chicago, William Butters, phoned Clay County Attorney James Garrity requesting that he place a guard around the site. Garrity did and instructed fire fighters to avoid spraying water on the right wing to avoid disturbing any ice. Within five hours of the accident, Moorhead firemen and local undertakers had removed the bodies from the wreckage. They were identified by surviving personal effects and dental records. Law enforcement officials erected a snow fence around the craft to shield it from the prying eyes of thousands of sightseers who began showing up before dawn.

(Also on the plane were about 757 pounds of mail destined for Fargo and other points. About 100 pounds were recovered. This was taken to the basement of the Fargo Post Office where two special clerks sifted through it for any piece with a legible address or return address. They salvaged 898 pieces, every one of which bore marks of fire. Each were re-enveloped and sent on with a paper slip stamped "Damage due to air mail interruption near Moorhead, Minn., October 30, 1941." The *Fargo Forum* reported that the rest "is a residue of charred letters and ashes, in such condition that it is unidentifiable. This material, filling two large boxes, will be sent to the dead letter section of the post office department in Washington... That letters involved in air crashes are valuable philatelists' items is evidenced in an advertisement in *The Fargo Forum* seeking air mail that was aboard.")

Crash investigators from Northwest and the Minneapolis CAA office were on the scene within hours. The CAB's investigator arrived from Chicago at 2:00 p.m. and took control of the site. After inspecting them at the scene, the engines and propellers were sent to Northwest's shops in St. Paul, where they were dismantled for testing. The rest of the wreckage was later sold to a Fargo scrap dealer.

The CAB announced an investigation with hearings to be

held at the Clay County Courthouse on November 2 and 3. Panelists included Stuart G. Tipton, Assistant General Counsel of the CAB who was assigned role of examiner; Frank E. Caldwell, Chief of the Investigation Division of the CAB's Safety Bureau; Senior Investigator Butters and B. C. Haynes, Air Safety Specialist in Meteorology of the Safety Board. They heard testimony from 21 witnesses including Gregory and Captain Bates, who was deposed from his hospital bed. The goal of the investigation was not to place blame, but to attempt to find the cause of the crash and institute changes which would keep such an accident from happening again.

Bates testimony was, of course, crucial in the investigation. Though much attention was paid to the possibility of ice build-up as a cause, it became evident that the amount of ice present alone could not have caused the plane's behavior. Bates' testimony, "gave no clue to the reason for the apparent development of violent buffeting after the power was applied, or to the failure of the application of power to check the descent of the aircraft. With throttles fully open, an aircraft with the general characteristics of the DC-3 would ordinarily be expected not only

### List of Passengers

- E. A. King, 45, Fargo, President of the Dakota Tractor Company
- Ned Wells, 41, Fargo, sales manager of the Dakota Tractor Company
- A. F. Simonson, 42, Grand Forks, owner of several businesses in Fargo, Grand Forks and Grafton, ND
- Miss Helen Ford, Fargo and Minneapolis
- Clarke W. Farup, 45, Grafton, ND, owner of Ford auto agencies in Grafton and Park River, ND
- Mrs. J. Packard, 50, Atlantic City, NJ, on her way to Seattle to visit her sister
- Henry G. Klopp, Spokane, WA, president of the White Pine Sash Company, on his way home to see his critically ill wife after attending his mother's funeral in Logansport, IN
- L. C. Carr, Highland Park, IL, traffic representative for Northwest Airlines Chicago office
- W. A. Metzger, New York City, sales manager of the portable typewriter division of the Royal Typewriter Company
- A. H. Brown, Billings, MT, attorney, chairman of the Montana State Republican Central Committee and Supreme Counsel for the Imperial Order of the Shrine
- Fred R. Lowell, 35, Springfield, OH, sales manager for the National Supply Company
- R. W. Ramsey, 47, North Canton, OH, president of Ramsey Lumber Company



to maintain altitude but to climb, even at a speed very near the stall."

The investigators interviewed Captain Robert M. Shank, check pilot for Northwest. Shank had over 13,500 air hours, much of it in DC-3s checking other Northwest pilots. Part of his job involved putting pilots' planes in difficult situations and observing how effectively the pilots responded. This included thousands of stalls and recoveries. "Captain Shank testified that in this pilot-checking experience he had observed that, in attempting to reduce loss of altitude to a minimum, occasionally a pilot would apply full power when the airplane had reached a nearly stalled condition and rapid descent had begun. Occasionally in these instances, at an air-speed indicator reading of from 55 to 90 mph, a terrific buffeting occurred about concurrently with application of full power. During this...[control was] retained, although with difficulty, but an uncontrolled descent took place," just as in the case of Flight 5.

"In order to avoid a prolonged and severe strain on the airplane, this condition was not permitted by Captain Shank to continue for any great length of time, recovery being effected by dropping the nose of the airplane, thereby increasing air speed. Little had been known about this tendency or characteristic of the airplane...and it had been believed that the application of power would pull the airplane out of the condition described without it being necessary to drop the nose."

A series of test flights were flown using Northwest DC-3s fitted out just as Captain Bates' plane had been. With Bates and others at the controls, in each case the plane acted essentially the same way Flight 5 did near Moorhead. Perplexed, the investigators reported that the accident may have been avoided had Bates pointed the nose of his plane down to increase his air speed but that "it must be admitted that ...that it is not easy even for a skilled pilot when already at a low altitude and approaching the ground rapidly, to overcome the tendency to try to pull the nose of the airplane up away from the ground, and follow the correct course of pushing the control forward and nosing the airplane down."

In the end, the investigators concluded that the probable



An investigator points to skid marks left by the ill fated DC3 as it slid across the grounds of the Moorhead Rod and Gun Club, hopped a ravine and crashed on the far side. The view is to the southeast. Forum Communications Company Collection.

cause of the accident was the failure of the aircraft "to respond to the application of full power in the manner reasonably to be expected in the light of the aeronautic knowledge then available." Contributing factors included the accumulation of ice which may have slowed the craft, the failure of the Northwest dispatcher "to recognize the seriousness of weather conditions in Fargo and direct the pilot to his alternate," and the failure of Captain Bates "due to his having lost confidence in his air speed meters" to recognize his close approach to a stall and his descending in the face of weather conditions instead of proceeding to Bismarck.

To reduce the hazard of similar accidents in the future, the CAB circulated to the aviation industry information about the potential for DC-3s to act in the way that caused the crash and the importance of pilots in similar circumstances to put the nose down instead of using full power. The Board also was "now considering a regulation to prohibit the practice of...letting down 'to take a look.'"

The investigators had also done a series of tests focusing on the variable pitch propellers used on the DC-3. A bit of explanation: a propeller moves a plane forward by cutting into the air as it rotates. Think of a screw going

Continued next page...



**Flight 5, continued**

into a 2x4. With each complete rotation of the screw, it bores a certain distance into the wood. The distance is related to the angle of the threads on the screw. A screw with steeply angled threads will dig far into the wood with each turn, but the force required to turn the screwdriver will be great. A screw with flatter angled threads will drive a shorter distance with each rotation but will be easier to screw in. Propellers are similar. Early aircraft designers had to compromise between propellers with a flat pitch to their blades (which might be great for take off but inefficient for cruising at altitude) and more sharply pitched blades (more efficient once high speed is attained but hard to get off the ground). Early fixed pitch

propellers were at peak efficiency at one speed only, like having a car with only one gear.

In the mid-1930s, just in time for the DC-3, inventors came up with a way for the pitch of the propeller to be adjusted in mid-flight from the cockpit. The pilot could set the pitch low when taking off, then "shift gears" by increasing the pitch as higher speed is reached. The variable pitch propeller was one of the most important technical innovations in aviation history. Captain Bates testified that he was not sure if he had flattened the pitch of the propellers when he gave full power to the throttle (like downshifting as you accelerate to pass another car) but he thought he had. Studies of the surviving propellers

## New CCHS Memberships & Renewals

CCHS extends a special thank you to the following individuals who renewed their memberships or became new members in July and August:

**NEW MEMBERS**

John Butze, Glyndon  
Delores Eiler, Fargo  
Kenneth A. Johnk, Portland, OR  
Edna J. Rude, Ada, MN  
Donna Thiel, Hankinson, ND

**RENEWALS**

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Roland & Carolyn Barden, Moorhead  
Russell & Lois Bekkerus, Glyndon  
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Meredith & Aldrich Bloomquist, Mhd  
Peter C. Brown, St. Paul, MN  
Beth Brunelle, Fargo  
Ona May Brunsvold, Moorhead  
Barton J. Cahill, Moorhead  
Mark Chekola, Moorhead  
Kenneth Christianson, Detroit Lakes  
Dr. Yvonne Condell, Moorhead  
Adeline Corwin, Ulen, MN  
Donald & Dorothy Dale, Moorhead  
Clare Degerness, Moorhead  
Dorothy Dodds, Moorhead  
Janet Dolva, Hawley  
Paul & Mardeth Dovre, Moorhead  
Paul & Joyce Eidbo, Moorhead

Ruth Franzen, Fargo  
John & Nadine Glas, Moorhead  
Helen Glawe, Fargo  
Janet Gorman, Moorhead  
Juanita M. Griebel, El Cajon, CA  
Edward A. Gudmundson, Moorhead  
Rose Gytri, Fargo  
Fern Haiby, Moorhead  
Joyce & Gustav Haug, Hawley  
Rae P. Haynes, Durango, CO  
Carole Lee Hays, Albany, OR  
Dennis & Kris Herbranson, Arlington, TX

Andre & Emily Houglum, Moorhead  
Loren & Londa Ingebretsen, Felton  
Dr. John Jenkins, Sun City, AZ  
Ardee & Eunice Johnson, Moorhead  
James D. Johnson, Moorhead  
Joyce R. Johnson, Glyndon  
Paula K. Johnson, Moorhead  
Virginia H. Johnson, New York, NY  
Lawrence Kava, Barnesville  
Virginia Kolba, Moorhead  
Ramona Kooren, Hawley  
Norman B. Kuehl, Fargo  
Evelyn Marie Larson, Fargo  
Neil H. Larson, Harwood, ND  
Jay & Becky Leitch, Moorhead  
Robert Loeffler, Moorhead  
Stanley Lunde, Ulen  
Kathryn Matthees, Moorhead  
Roger J. Minch, Fargo  
Moorhead Area Public Schools

Moorhead Kiwanis  
Orlow & Bev Nokken, Moorhead  
Lynne Olson, Fargo  
Lila Ordal, Moorhead  
Gerald Palmer, Barnesville  
Sherwood & Marilyn Peterson, Sabin  
Morris Rasmussen, Fargo  
J. Donald & Naomi Rice, Moorhead  
Sam Rikkus, Ulen  
Rona Robbins Mears, Dallas, TX  
Ron & Nancy Saeger, Fargo  
Matt Scheibe, Eugene, OR  
Anna E. Schneider, Moorhead  
Joe & Karen Schneider, Moorhead  
Donald & Carol Schoff, Hawley  
Terry Shoptaugh & Deborah Janzen, Mhd  
Maxine Shulstad, Barnesville  
Doug H. & Margaret Sillers, Moorhead  
Steve & Shauna Slabik, Fargo  
Sally Sologuk, Fargo  
Roger & Barb Spilde, Moorhead  
Bernice A. Stensgaard, Moorhead  
Justine Swanson, Fargo  
Al & Janet Traaseth, Dilworth  
Ruth Wagner, Moorhead  
Marguerite A. Wardeberg, Barnesville  
Tom & Sherry Watt, Glyndon  
Wells Fargo Bank MN, N. A., Mhd  
Faye B. Wells, Vancouver, WA  
Mary Kinsella Ziegenhagen, Cloverdale, CA

**Flight 5, continued**

showed they were at a flat pitch at the time of the crash.

At the time the CAB release their accident report, the propeller tests were still inconclusive. Apparently, however, further testing revealed a flaw. According to retired Moorhead jeweler and former ground control crewman for Northwest, Tom Gould, by 1942 it was common knowledge in the aviation community that the DC-3's pitch controls stops had been set too low, that it was possible to flatten the blade pitch too far – like downshifting from 4<sup>th</sup> to 1<sup>st</sup> gear when passing instead of from 4<sup>th</sup> to 3<sup>rd</sup> – making it impossible to get the acceleration out of the higher engine speed. Industry wide changes were made to the DC-3's propellers and no more accidents of this type occurred.

Captain Bates' testimony was key to identifying this anomaly. The findings may have saved many passengers and crews from the fate of those on Flight 5. Less than two months after the crash, the U.S. entered World War II. Though he was too old for combat service, Captain Bates became a test pilot for the U.S. Army Air Corps. On October 31, 1942, one year and one day after the crash of Flight 5, Captain Clarence Bates was killed when the B-24 bomber he was test flying crashed at St. Paul.

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## HERITAGE-HJEMKOMST INTERPRETIVE CENTER

### Exhibit Schedule

#### TEAM UP!

#### Explore with Science & Sports

October 1—December 31

Test your skills in sports such as basketball, tennis, soccer, and football while learning about geometry, physics, force, and friction. Learn about local college and high school sports teams from the Red River Valley.

#### FESTIVAL OF TREES

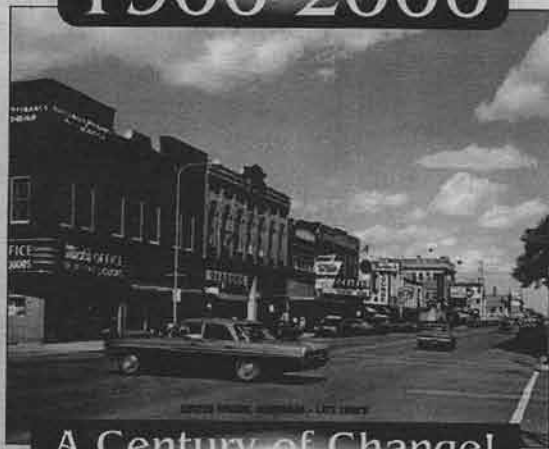
December 1—December 31

Features displays of various ethnic religions and cultures. Celebrate at the *Holiday Heritage Festival* Saturday, December 11, 10:00am-4:30pm. View crafts and performers of various ethnic groups.

*\*All programs subject to change*

## The Last One Hundred Years in MOORHEAD MINNESOTA

# 1900-2000



### A Century of Change!

Published by Heritage Publications in collaboration  
with the Clay County Historical Society

## Take a stroll through the last 100 Years in Moorhead

*Moorhead, 1900-2000: A Century of Change* is full of historic photographs and stories that draw you into the story of Moorhead. See how much Moorhead has changed!

Also available: *Fargo, ND, From Frontier Village to All America City, 1875-2000* is a unique collection of photos and stories chronicling Fargo's first 125 years.

These high-quality, paper cover books, published by Heritage Publications of Hendrum, MN, are fundraisers for the Clay and Cass County Historical Societies.

Pick up your copies today at the Clay County Museum & Archives in the Hjemkomst Center, 202 1st Avenue North, Moorhead, or send your check or money order for \$23.00 to CCHS, PO Box 501, Moorhead, MN 56561.

Call CCHS at 218-299-5520 for more information.



## Sponsor, Patron, Sustaining and Supporting Memberships

This segment of our newsletter keeps growing every issue! Thank you to all of our wonderful members for your tremendous support! Please help us thank these business members for supporting the Clay County Historical Society by patronizing them:

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Sincere thanks goes to these individuals in the Patron, Sustaining, and Supporting membership levels!

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Ron & Deanna Ulven  
Mark & Donna Voxland  
Arthur & Marie Wenner  
Dale D. White  
Dick & Kathy Zaylskie



## ...and a good time was had by all! Clay County Tour

On Saturday, September 25, 32 historical society members and area residents boarded a Red River Trails Bus for a tour of Clay County historic sites guided by CCHS Archivist Mark Peihl. Participants learned the origins of the Gantz Reservoir and towns like Lafayette, Old Georgetown, Catton and Real, in addition to the history behind other fascinating historic sites around the county. Copies of the map of sites used for the tour are available at the CCHS office. Thanks to all who participated & helped with the tour!



Left: Participants enjoy rolls and coffee while waiting to board the bus.



Right: CCHS Archivist and Tour Guide Mark Peihl points out the historic location of a ghost town.



Left: Participants listen raptly to Tour Guide Mark Peihl's description of historic Clay County sites.



Right: Participants at the catered lunch buffet at Tom and Sherry Watt's farm.

# Old New Borrowed Blue

*Weddings in Clay County*

Through March 27, 2005

30 dresses from 1865—1977,  
photographs and Hands-on Center

Clay County Museum Hours: 10-5 Monday-Saturday, 10-9 Tuesday, 12-5 Sunday  
Hjemkomst Center, 202 1st Avenue North, Moorhead, MN ♦ FREE ADMISSION



# CLAY COUNTY HISTORICAL SOCIETY

## MEMBERSHIP FORM

YES! I would like to become a member of Clay County Historical Society

- ☐ Individual\* \$20      ☐ Sustaining \$100  
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☐ Supporting \$50      ☐ Sponsor \$500

\*Businesses are not eligible for Individual and Family membership levels

### CCHS MEMBERSHIP BENEFITS:

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- ◆ Access to CCHS history tours
- ◆ Voting Privileges

In addition to the great benefits listed above, Supporting, Sustaining, Patron and Sponsor members a certificate ready to frame and display, and a listing in all CCHS bi-monthly newsletters.

To become a CCHS Member please complete and return this form or a copy of this form with check for dues payment to:

CLAY COUNTY HISTORICAL SOCIETY  
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Visit our website! [www.info.co.clay.mn.us/history](http://www.info.co.clay.mn.us/history)

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