

An American Flyer Remembered: Martin Douma Jr., 1920–1944

Richard H. Harms

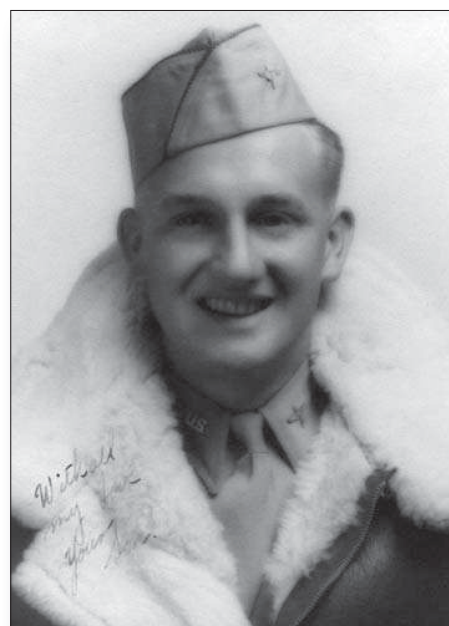
Author's Note:

On 27 February 2010 outside Celje, a town of approximately 46,000 in western central Slovenia, members of that community gathered to remember the crew of a United States B-24 bomber that had been shot down sixty-six years earlier. In preparation for that event, one of the event's organizers, Marko Zdovc, had discovered from a Heritage Hall website of obituary data of military (Gold Star) deaths in the Young Calvinist that one of the crew members was from Grand Rapids.¹ Zdovc asked if more information were available on Second Lieutenant Martin Douma Jr., married to Helen, and the son of Martin and Lena Douma. A check of obituaries and the Grand Rapids telephone directory revealed that several of Douma's siblings were still living in the area. With information from these family members, data from now available government documents, and accounts of war experiences available via the internet, the story of the sacrifice of Douma and his crewmates emerged.

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Martin Douma Jr., the seventh child, the third of four sons, was born in Grand Rapids on 24 November 1920, to Martin and Lena Douma.² The elder Douma had been born in Hommerts, Friesland, the Netherlands, and his family immigrated to Grand Rapids in 1891, when he was four. He was married to Grand Rapids native Lena Kloet in 1907. They lived on the city's northwest side, where he worked as a painter, and where they joined Alpine Avenue Christian Reformed Church. One of their daughters died as an infant, so that Martin grew up in a family of ten siblings. He graduated from Union High School in 1938 and went to work as a sandblaster at the National Brass Company, which manufactured cabinet hardware for the furniture industry.

Capable of more than an entry-level position as a sandblaster, by early 1941 he was working at the Globe Knitting Works on Ionia Street, just south of the city's Union Station railroad yard. Like other knitting mills, Globe hired primarily women to run its knitting machines that produced a variety of items, particularly woolen underwear. As it had during WW I, in 1941 the firm won the first of several United States government contracts to produce underwear for the military. By 1944 its production reached \$6 million with 1,200 employees.³ Douma began as a machine operator, but his talents and ability led to several promotions in the rapidly



Martin Douma in his flight jacket. Image courtesy of William Douma.

growing firm, first to production clerk and, by the summer of 1942, as a foreman. At Globe he met and began dating a production machine operator, Helen Roest, the daughter of a city firefighter.

Twenty-one when war was declared, Douma and his older brothers, George and Leonard, were eligible for military service. On 4 August 1942 Douma enlisted in the Army Air Force⁴ as a private. The attack on Pearl Harbor and the German invasions in Europe demonstrated the importance of an air force, particularly the strategic importance of long-range, heavy bombers able to bypass natural and military barriers to deliver

concentrated firepower. Further, aircraft allowed the industrial economies of both Germany and the United States to reduce the number of front-line personnel needed to deliver such military firepower. Instead, personnel in manufacturing could be utilized to produce the equipment and ammunition delivered by a significantly small number of individuals than would have been the case with conventional ground forces. As the world's leading industrial economy at mid-century, the US was able to use its factory output to quintuple its

number of available military aircraft at the attack on Pearl Harbor (12,297 aircraft) compared to V-J Day.⁵

With the declaration of war on 8 December 1941 the Army took steps to increase the number of Air Force personnel, which required a reconsideration of qualifications of applicants. Because of wartime need the 354,000 Air Force personnel in December 1941 grew to 1.6 million in one year, to a peak of 2.4 million in 1944. Because of the engineering and mathematical skills needed, a college education had been required for being considered for pilots (including co-pilots), navigators, and bombardiers before the war. Because of the limits resulting from this educational requirement, in 1942 aptitude and ability rather than education accomplishments became the determining factor for applicants to become flight crew members. With requisite skills and aptitudes the war army trained an estimated 193,000 pilots, 50,000 navigators, and 45,000 bombardiers.⁶

For the US, the B-17 and the newer B-24 were the long-range aircraft



The crew of Peacemaker, probably taken while still in the United States. Douma is in the front row at the far left. Image courtesy of William Douma.

that fought the war in Europe. Prior to the ground invasion these heavy bombers took the Allied war to the German mainland and after D-Day provided support for the invasion. After basic training Douma passed the Stanine (Standard Nine) Test to be trained as a bombardier. Bombardiers for these heavy planes needed skills in both navigation and piloting since once they had sighted targets through the Norden bombsight as they approached the target at the Initial Point, the pilot turned over control of the airplane to the bombardier with the radio message, "You have the plane." For the next minute and forty-five seconds, assisted by the Automatic Flight Control Equipment (auto pilot), in a cramped space under the nose turret the bombardier flew the aircraft on a steady and level course until releasing the five to six tons of bombs. Once the bombardier sounded "bombs away" the pilot resumed control and immediately began flying evasive maneuvers. The crew did not need to hear the bombardier's announcement of this since a slight

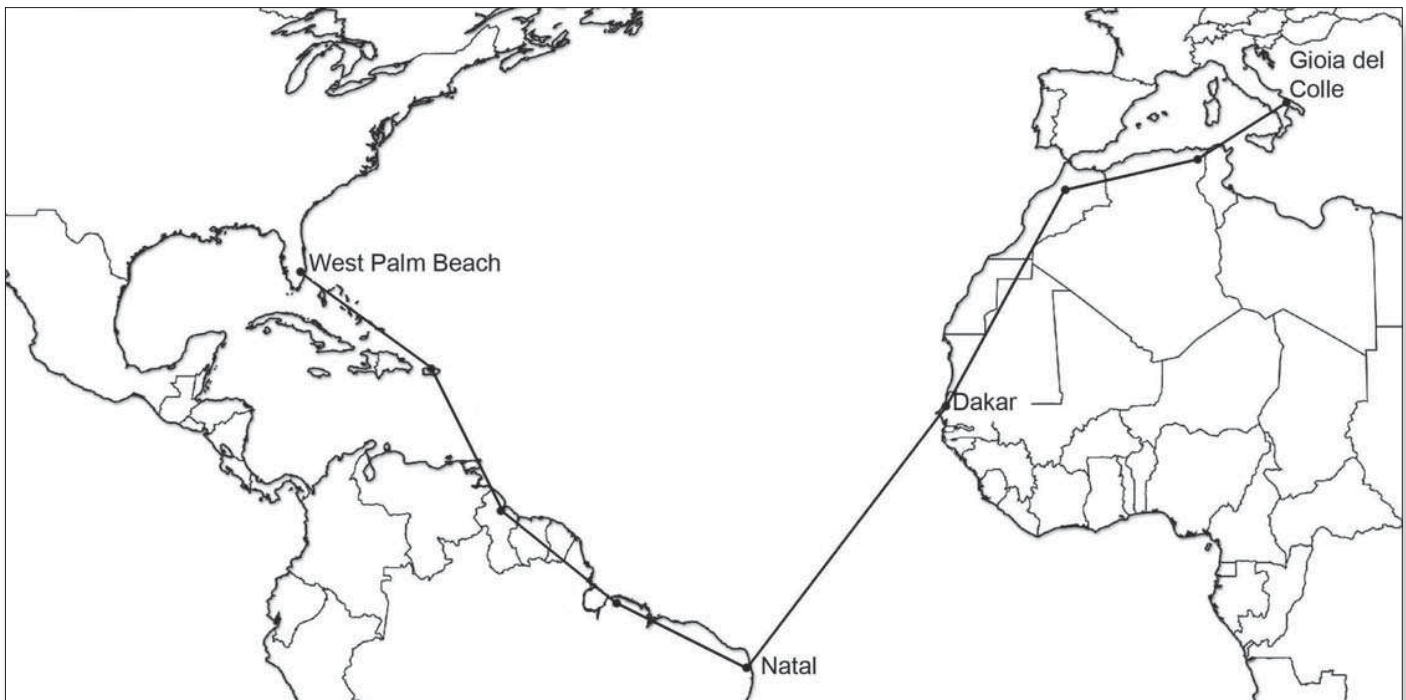
bounce of the aircraft upward indicated to all on board that the bombs had been released.

Private Douma spent twelve weeks in specialized training, which included 325 hours in ground school and 61 hours in the air. Ground school included learning the theory of bombing, the physics of dropping bombs, the affects of altitude, air speed, wind direction and velocity, and temperature on dropping bombs. Training was considered secret—so secret that one account from

the time reports that

bombardiers used no text books and took no lecture notes.⁷ On bombing runs students learned to use various circular slide rules (called computers) to factor in the variables and calculate the point at which to release the bombs.

Training was also given in the use of the Norden Bombsight, with its gyroscopically leveled platform for the sight head, which consisted of a mechanical analog computer that calculated the impact point of the bombs, a small telescope used to sight the target, and a system of electric motors and gyroscopes that moved the telescope so a single point on the ground remained stationary in the sight. The technology of the bombsight was deemed so secret that bombardiers took an oath to protect it with their lives. If a plane was to make an emergency landing in enemy territory, the bombardier was to fire a thermite gun installed on the sight; the heat of the resulting chemical reaction melted the unit into an unusable mass of metal and glass.⁸ After missions, the bombsights were covered in canvas,



The "southern route," with refueling stops, that aircraft, including Peacemaker, followed to southern Europe or Asia.

removed from a plane by the bombardier, and stored in specially guarded vaults. Prior to the next departure the still-covered bombsights were brought to the plane and installed by the bombardier. The canvas covering was not removed until after take-off. During the flight the bombardier adjusted and calibrated the sight.

Training in the use of the bombsight began from a stationary tower sighting on a moving target on the floor or ground. Flight training came in a Beechcraft AT-11 "Kansan," a twin engine, twin-tail plane. Successful bombardiers were required to be able to drop bombs within 1,500 feet of the target from an altitude of 20,000 feet. Since the Kansan had a maximum altitude of 16,000 feet, 10,000 feet when fully loaded, the radius of accuracy was reduced to within 700 feet of the target at 10,000 feet.⁹

After completing training Douma was commissioned a Second Lieutenant and assigned to Davis-Monthan Field, Tucson, Arizona, where the recently activated 451st Bombard-

ment Group was being organized.¹⁰ In late June, while the group's pilots and some of the ground crew went for ten days of training at the School of Applied Tactics in Orlando, Florida, Douma was able to return to Grand Rapids on furlough. While home, on 26 June, Douma and Helen Roest married.

Once back on duty, Douma was introduced to his new plane, a B-24H-05-FO Liberator heavy bomber, serial no. 42-52101, one of 8,700 bombers manufactured at Ford's massive Willow Run, Michigan, complex. His crewmates were: pilot, 2nd Lieutenant Edward D. Johnson; copilot, 2nd Lieutenant Gene F. McEntee; navigator, 2nd Lieutenant Kenneth L. Hunt; 1st engineer and upper turret gunner, Staff Sergeant Clayton J. Nolecheck; 2nd engineer and right waist gunner, Staff Sergeant Howard E. Grove; tail turret gunner, Staff Sergeant Walter G. Batory; 3rd engineer and nose turret gunner, Sergeant Clifford D. Williams Jr.; radio operator and left waist gunner, Sergeant Richard D. Heaney, and

lower turret gunner, Sergeant Edwin M. Berney.

The bomber, named *Peacemaker* by the crew, was a somewhat modified model of earlier versions of the B-24, with a more maneuverable electrically operated nose turret, better windows in the other three turrets, and an improved bombsight and auto pilot. It was powered by four turbo supercharged Pratt & Whitney Radial engines, capable of generating 1,000 hp each. Its cruising speed was 215 mph (maximum was 290 mph) and could fly as high as 28,000 feet. Without a payload it had a range of 3,700 miles, with a heavy load (8,000 pounds) it traveled 800 miles; in order to be able to return that meant a maximum distance of 400 miles from base to target. Typical payloads were 5,000 pounds of bombs, with a range of 800 miles from base to target.

The 451st Bomb Group was comprised of four squadrons (724th–727th) each of which was comprised of four bombers. *Peacemaker* and her crew were in the 724th Squadron.

The Group trained further at Wendover Army Air Base, 100 miles west of Salt Lake City. By early September the Group transferred to Fairmont Army Air Field, southwest of Lincoln, Nebraska. The B-24's fuel tanks were located in the upper fuselage and its lightweight construction increased its range and optimized assembly line production, but made it vulnerable to battle damage. Because of its size and weight, flying the bomber was physically demanding for the pilots and it was particularly awkward to fly in formation. This became clear during the training of the 724th, when two of the squadron's B-24s crashed in mid-air, killing all onboard both planes.

In November 1943 the Group received orders to begin moving to an unspecified destination. Ground personnel went via train to Virginia and then via transport ship across the Atlantic, some landing in North Africa by Christmas, while others were onboard ship in the harbor of Naples, Italy, that day. The flight crews began the two-month process of flying the sixty-two planes in stages by way of the "southern ferry route" to either southern Europe or the Far East. Each plane flew the same route but about an hour apart, landing in West Palm Beach, Florida, for refueling; then an overnight stay in Puerto Rico; refueling in Atkinson, British Guiana, and in Belém, Brazil; followed by several days in Natal, Brazil, close to the eastern-most point of Brazil. In Natal the planes were fitted with temporary rubber auxiliary fuel tanks in the bomb bay for the 2,000-mile flight across the Atlantic to Dakar, Senegal. After an overnight stay in Dakar the next flight was to Marrakech, Morocco, and then to Telergma, Algeria, where all the Group's sixty-two bombers arrived without incident. In Telergma the flight crews learned that they had been assigned to the 15th Army Air Force's 49th Bomb Wing operating out of Italy.¹¹

As the Group waited for an airfield to be prepared in Italy, several weeks were spent flying practice missions over North Africa. On 2 January, having been sent via two different harbors, the ground crews of the Group's four squadrons were reunited in Italy and sent to a former German airfield near Gioia del Colle, Italy.

The airfield was then home to a British fighter squadron, so the Americans began erecting their tents and other structures in preparation for the arrival of its air echelon in an adjacent olive grove. The airfield with its dirt runway was sufficient for fighters, but it was the rainy season in the Mediterranean, which turned the dirt to mud, making the runway unsuitable for the heavy bombers that weighed over 60,000 pounds at take-off when loaded with twelve 500-pound bombs and 27,000 gallons of high-octane aviation fuel. Army engineers laid metal mesh mats to reinforce the runway for the bombers which arrived in formation on Thursday, 20 January 1944. The

451st has the distinction of the only bomb group in the 125th Air Force to bring its planes into an assigned combat area without a single loss.¹²

According to procedures, the first mission for the 451st, three days after arriving from Algeria, was practice flying with the experienced 98th and 376th Bomb Groups. The first combat mission was a week later against a radar station in Albania. There were no enemy fighters or anti-aircraft fire (flak), yet no one managed to hit the target. The next mission, targeting another radar station, was more successful although one flier was wounded by shrapnel and one of the planes in the 724th crashed on landing because one of its tires had been punctured by flak. The Group's first combat deaths occurred on the fourth mission (8 February) when the 726th squadron's *Old Tub* crashed after take-off, killing eight of the ten crew.¹³ Five days later the Group was given Peenemünde, Germany, on the Baltic Sea, a site of rocket manufacturing



Brought into war service in 1943, the B-24 was a rugged heavy bomber, but the placement of its fuel tanks throughout the upper fuselage and its lightweight construction made it vulnerable to battle damage and a tendency to catch fire.

and launching, as its target. The distance from southern Italy was approximately 900 miles, too far away for the bombers to be able to return to base. Instead, pilots were instructed to find “any friendly territory” after their bomb runs. Air crews considered such instructions to be suicide missions, but were relieved when a red flare arched over the field just prior to take-off indicating the mission had been aborted.¹⁴

On Sunday, 20 February 1944, the United States launched Operation Argument, six days of air missions over Germany, six days that came known as the “Big Week.” The plan was to draw Germany’s air force—the Luftwaffe—into a decisive battle, by launching massive bomber attacks on the German aircraft industry. Since the Luftwaffe consisted primarily of fighters, the scale and nature of these bomber attacks would force the German planes into battle. The missions were flown by the US 8th Air Force, the British Air Force, both based in England, and the US 15th based in Italy. American bombers flew during the day, while the British bomber command flew against the same targets at night.¹⁵ The Americans believed that their B-17 and B-24 bombers, typically with ten .50-caliber machine guns or more each, remaining in tight flying formations, would have the overlapping fire needed against the German fighters, primarily Focke-Wulf 190s and Messerschmitt 109s.¹⁶

The 451st Group had flown missions on the 17th, 18th, and 19th prior to Big Week, so was allowed to rest for the first two days of the attacks.¹⁷ On the Tuesday the 451st was briefed on their mission against the Messerschmitt aircraft factory outside of Regensburg, Germany (north and a bit east of Munich). That area of Germany was a major manufacturing area of much war material and therefore was also a major railroad

hub with marshaling yards. Consequently it was well defended by the Luftwaffe and by anti-aircraft guns; Regensburg had three concentric rings of these guns that could fill a cubic mile of airspace with flying shrapnel at one time. That day the planes of the 15th Air Force fought their way to their targets dropped their bombs, at a cost of 13 bombers lost, but 40 Luftwaffe aircraft were destroyed (in terms of personnel this was 130 to 40). On the flight back *Peacemaker* ran low on oxygen and the crew decided that everyone but the pilot and co-pilot would go off oxygen, despite the high altitude. Since they did this at the risk of their lives, each was awarded the Distinguished Flying Cross.¹⁸

The next day the 451st flew against a large weapons manufacturer in Steyr, Austria, due east of Munich. Bad weather and fewer defenses and defenders made that mission a bit easier.¹⁹ Thursday was an off day for the Group.

The weather forecast indicated that Friday the 25th would be clear over Germany, and another wave of attacks was directed at the German aircraft industry—targets considered so important that planners were willing to accept and expect significant losses. The 8th Air Force from England and the 15th from Italy were again to be sent against the well-defended manufacturing targets.

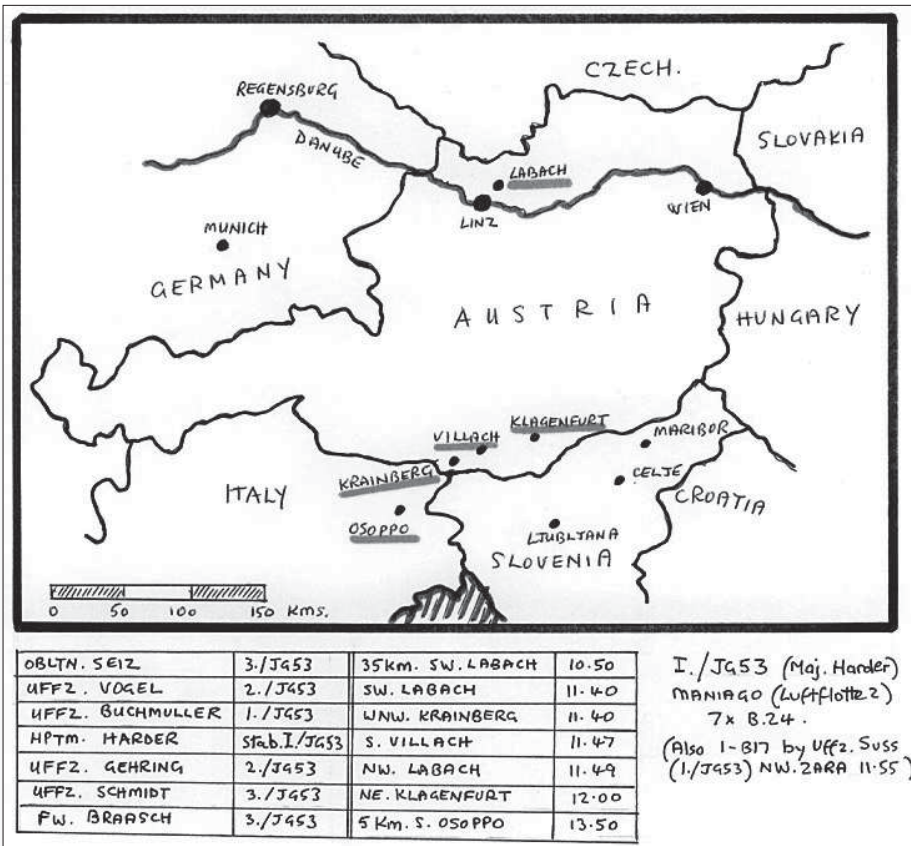
During the night of the 24th and into the morning of the 25th, ground crews, as was typically the case,



The last flight path of *Peacemaker* and seven of the ten crew members.

prepared the bombers for the mission. The high-octane fuel tanks were carefully filled, the oil tanks for each engine were topped off, and thousands of pounds of .50-caliber ammunition and bombs were loaded into each bomber. At 2:30 a.m., while the ground crew was working, the air crews of the 451st were awakened and told that they would be involved in a “maximum effort day.”²⁰ Breakfast was at 3 a.m. and the crews assembled in the briefing room at 4 a.m.

When the briefing officer pulled aside the curtain on the mission board the crews saw that the 15th Air Force again was flying against Regensburg. From their experiences the previous Tuesday the fliers knew that casualties would probably be high. Three Bomb Groups in succession were targeting the Prufening Aircraft Factory, with the 451st second in order. The first



A German map of air combat action against bombers from Italy on 25 February 1945. The underlined cities were the airbases from which the German fighters left for battle. Image courtesy of Marko Zdovc.

group would have an advantage of surprise, but the second and third groups would encounter more intense and better-targeted anti-aircraft fire. After the Tuesday attacks the briefing officer told the crews that they could expect more than 200 German fighters from various bases in southern Germany and Austria as they approached and left their targets.²¹ At this point the enlisted crew members left the briefing, while the officers remained to receive specific flight instructions.

The enlisted men joined with the ground crew to finish preparing the planes, with the crew chiefs physically inspecting the planes. The crews also manually turned each propeller to bring the oil that had settled to the bottom of the cylinders during the night back up into the engine,

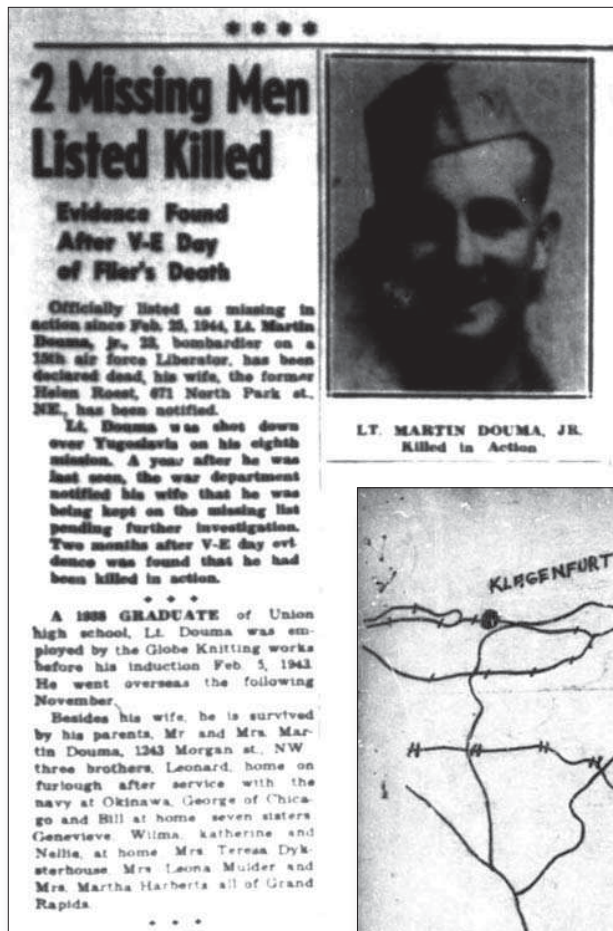
otherwise when the engines were started the resulting pressure at the bottom of the cylinders could cause the engine to rupture. By 4:30 a.m. the officers arrived and the air crews boarded, preparing the plane, with the bombardier mounting the bomb sight. An hour later all was ready and the crew awaited the order to start engines. The *Peacemaker* crew that day consisted of pilot Edward D. Johnson, copilot Gene F. McEntee, navigator Kenneth L. Hunt, and bombardier Martin Douma Jr., all 2nd Lieutenants; Staff Sergeants, upper turret gunner and 1st engineer Clayton J. Nohlecheck, right waist gunner and 2nd engineer Howard E. Grove, tail turret gunner Walter G. Batory; and Sergeants lower turret gunner Edwin M. Berney, left waist gunner and radio operator Richard D. Heaney, and

nose turret gunner and 3rd engineer Clifford D. Williams Jr. Batory and Grove were last-minute replacements for James H. Williamson and Arnold Lampmans, who were on sick call. The ten took their positions for take-off; for takeoff and landing only the two pilots were in their flight seats; only when airborne did the rest of the crew occupy their duty stations.

During the preceding rainy four weeks the Gioia del Colle airfield had become increasingly more muddy. Returning planes threw up rooster tails of spray as they landed, with ground crews wagering on which plane would throw up the highest rooster tail. At 8:30 the planes began to take off, the first planes circling until all had taken off and taken their places in formation. As one after another of the heavy bombers took off, more and more mud oozed up through the metal mesh runway; eventually one bomber slid off the taxiway and sunk to her axles in the mud. *Peacemaker*, with forty other planes, managed to take off before the runway became unusable. These forty were part of the 196 planes that the 15th Air Force was able to launch that morning.

Once the formation of the 451st was underway the crew took their combat positions, with the nose gunner, navigator, and bombardier in the small compartment below and forward of the cockpit. Then the gunners test-fired a few rounds to make sure all was in working order. As the planes gained altitude, masks that provided oxygen from tanks in the upper fuselage behind the bomb bay were attached to the flying helmets. Portable oxygen tanks were available if crew members needed to move about the plane. The waist gunners, stationed at openings where the temperature could plummet to -65 degrees Fahrenheit, were provided some warmth from electrical wiring in special suits.

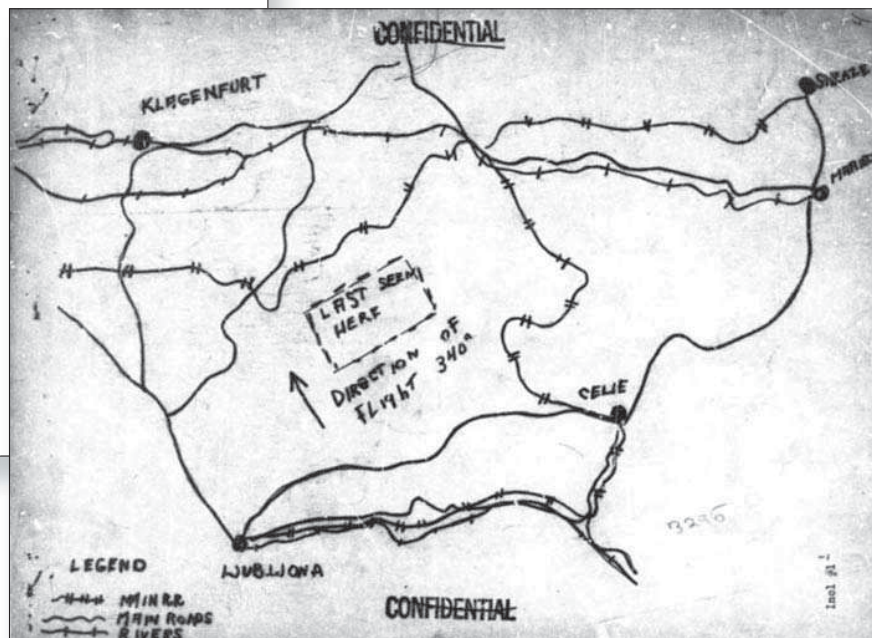
The flight plan for the 451st took



The 15 July 1945 story from the Grand Rapids Herald reporting Douma's death. He was one of more than 30,000 Kent County, Michigan, women and men who served in the military—1,032 of whom died.

Luftwaffe had decided to concentrate its efforts over southern rather than western Germany. Without fighter escorts the gunners on the planes of the 15th battled with the German fighters for an hour and fifteen minutes, until the anti-aircraft fire near Regensburg began. As the formation drew closer to Germany the

the plane. Because inter-plane communication had been cut during an earlier attack, those in the rear of the plane decided to bail out—a command that would otherwise have been given by the pilot. The tail gunner, Batory, and two waist gunners, Grove, and Heaney, helped Berney out of his base turret, but as they attached their parachutes (space was so limited that only the pilot and co-pilot could wear parachutes while in combat position), Berney discovered that his had been burned. There were no extra



Map drawn by others of the 451st group that had witnessed Peacemaker in flames from enemy fire. Image courtesy of Marko Zdovc.

parachutes on planes flying out of Italy, as was generally the case for planes based in England, so Berney pushed the other three out through the camera hatch, on the underside of the fuselage, and went down with the plane. The plane crashed about 8

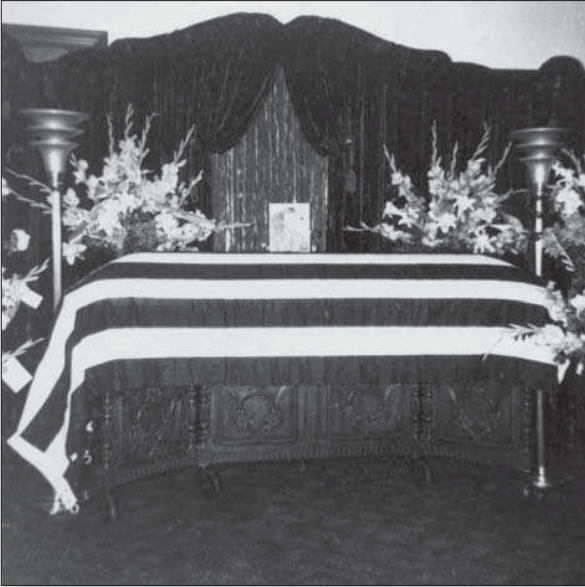
the planes north and slightly west across the Adriatic Sea. Over Split (Croatia) they turned northwest and followed the coast to Fiume, Yugoslavia (now Rijeka, Croatia), and turned north again. Fifteen minutes later, about ten minutes before noon, came the alarm, "Fighter, Six O'Clock (sic) Low!"²² as fifteen ME-109s, probably from a base in northern Italy, began to attack. The 466 bombers of the 8th Air Force launched out of England suffered far fewer air losses that day because they had long-range fighter escorts the entire way and because the

number of fighter planes increased.

As the Group "fought for every mile," *Peacemaker* was hit in her number-three engine, which began to smoke, and the plane began losing speed and altitude. Losing the covering fire from other bombers made the *Peacemaker* far more vulnerable as several fighters focused on the lone bomber. According to German records, a fighter piloted by Unteroffizier Peter Schots, came from underneath and fire from his plane hit the oxygen tanks sparking a fire that rapidly spread forward through

miles north and west of Celje; none of the seven crew remaining onboard survived; debris was scattered across about a square kilometer. The three who parachuted were captured soon after landing and spent the rest of the war as prisoners of war. A few days after the crash the bodies of the seven killed, most severely burned, were given a military funeral in the Celje Cemetery by the German army.

During the mission that day, the remaining planes of the 451st dropped an estimated 67 tons of explosives on the manufacturing complex. Military



Douma's casket during visitation in 1949. Image courtesy of William Douma.

reports indicated that the damage inflicted was extensive. At Regensburg no structure escaped damage; many were totally destroyed. The cost to the 451st was high. Of the 15th Air Force's 196 B-24s that hit aviation industry targets that day, all six that were lost were from the 451st. The Bomb Group was credited with shooting down nineteen fighters that day, but the United States lost sixty-one personnel compared to nineteen for Germany. For this action the 451st received the Presidential Unit Citation and came to be known as the Fighting 451st. It was the last time the 451st flew from Gioia del Colle, as returning planes found their air field too muddy for landing and so flew to other fields, several to Foggia, fifty miles away.

Total Allied losses during Big Week were 6 percent, significantly less than projected, but included 126 bombers, 28 fighters, and 2,600 crew members. German production dropped 35 percent and 70 percent of stored materials were destroyed that week. But German planners had been dispersing their manufacturing facilities so that such local damage did not have a sig-

nificant, long-term impact on production; in fact, total German aircraft production for March 1944 reached new levels. The losses for Germany were not in aircraft (data suggests 533 were shot down during February) but in pilots killed. Germany was well able to replace the planes but not the skilled pilots.²⁴

When the Group was deactivated at the end of April 1945, the 451st had flown 245 missions and won two more Presidential Unit Citations. The group achieved the highest overall bomb score in

the 15th Air Force and its personnel were awarded 1 Distinguished Service Cross, 9 Legions of Merit, 25 Silver Stars, 320 Distinguished Flying Crosses, 280 Purple Hearts, more than 6,300 Air Medals, 523 Soldiers Medals, and more than 100 Bronze Stars.²⁵

Within weeks of the crash, Martin Douma's family in Grand Rapids

received word that he was missing in action. As with so many families of those missing in action, weeks passed without any word. Then in May 1944 his mother received flowers on Mother's Day from him and hope rose briefly that he was still alive as a POW and somehow had been able to send flowers. When his father went to the florist to find out how the flowers had been sent, the family learned that Martin had ordered them the previous June when he was home on furlough.²⁶ Finally, more than a year later, in July 1945, after the three surviving crew members had been freed from the prison camps and their reports of what happened that day over Celje were verified, official word came that the seven crewmates had been killed in action.²⁷ Helen eventually married again.

In March 1949 Douma's parents received a letter that his remains, and those of his crewmates, had been disinterred and identified based on dental records as part of the American military effort to reclaim the remains of its dead from civilian cemeteries. The remains of the seven had been reburied in the US Military Cemetery



The ceremony in February 2010 outside of Celje, Slovenia, dedicating the marker on the site where Peacemaker crashed. Image courtesy of Marko Zdovc.



Martin Douma's younger brother William with the memorabilia his parents and now he has kept since WW II. Image courtesy of Richard Harms.

in Belgrade. Because of the developing Cold War the remains were moved again to the US Military Cemetery near Naples, Italy. At this point the US Government offered the families the option of shipping the remains to the United States for burial in a cemetery of the family's choosing. On Friday, 17 June 1949, about noon, Douma's casket, with a military escort, arrived

in Grand Rapids by rail.²⁸ Visitation with the family was held that afternoon and evening and the next afternoon funeral services were held and the body was interred in Washington Park Cemetery, in a family plot. After almost exactly six years, Martin Douma's body had been returned to Grand Rapids. 3

Endnotes

1. See: *Young Calvinist Obituaries* on http://www.calvin.edu/hh/family_history_resources/in_house_resources.htm.

2. The children of Marten and Lena Douma are: George Martin (1908-1999), Genevieve (1910-2005), Theresa (1912-2008), Leona (died in infancy, perhaps about 1914), Leona (1916-2000); Leonard (1918- 1998), Martin Jr., Martha (b. 1922), Wilma (b. 1924), Catherine (b. 1926); William M. (b. 1930), and Nellie (b. 1931).

3. Z. Z. Lydens, ed., *The Story of Grand Rapids* (Grand Rapids: Kregel Publications, 1967) 289.

4. Officially it was known as the US Army Air Forces, but this paper will refer to the branch as the Army Air Force. During WW II the US Army was composed of the Ground Forces, Service Force, and Air Forces. In 1947 the United States Air Force became a separate military branch.

5. Total war production was much higher due to the number of aircraft lost during the war. During 1944, the peak of production, US plants produced more than 100,000 aircraft.

6. Another 297,000 aerial gunners played crucial roles protecting the nation's bomber fleet from attack by enemy fighters but did not need the level of training of pilots, navigators, and bombardiers. As a result, the former tended to be officers while the latter were enlisted personnel.

7. "The Most Dangerous Man in the World," *Popular Mechanics* (October 1942) 26-27.

8. During a visit to Germany in 1938, Herman W. Lang, a German spy employed by the Carl L. Norden Company, reconstructed plans of the bomb sight equipment from memory. German instruments were actually fairly similar to the Norden, even before World War II.

9. Philip A. St. John, *Bombardier: A History* (Turner Publishing Company: Paducah, KY, 1998) 13.

10. For a fine history of this Bomb Group see: Mike Hill, *The 451st Bomb Group in World War II: A Pictorial History* (Schiffer Military History: Atglen, PA, 2001).

11. Philip A. St. John, *The Liberator Legend: The Plane and the People* (Turner

Publishing Company: Paducah, KY, 1990) 62.

12. Hill, *The 451st*, 73.

13. St. John, *The Liberator*, 62. Others in the Group were convinced the plane crashed due to icing on the wings resulting because the crew had forgotten to lay canvas across the wings the night before. When the canvas was removed before take-off, so was the ice. "Interview with Carlo J. Ginobile," in Rutgers Oral History Archive, New Brunswick History Department (Ginobile was a tail gunner in the 726th squadron) at http://oralhistory.rutgers.edu/Interviews/ginobile_carlo.html, accessed 12 March 2010 at 6:39 pm.

14. Hill, *The 451st*, 21. One of the longest flights for the 451st was in May 1944 over Lyon, France; the flight there and back took eleven hours and almost all the fuel B-24s carried.

15. The new moon was the 23rd, in the middle of Big Week.

16. In 1943 American daylight raids had experienced loss rates up to 30 percent, which brought an end to daylight bombing of well-defended targets. By the time of Big Week, the number of bombers and fighter escorts available had increased to the point that planners decided to resume daylight attacks.

17. Standard Army practice was that air crews flew combat missions no more than three days in succession. Due to the high level of stress during such missions, after three days of successive missions crew were allowed several days of rest.

18. From the account of the plane's history by Sgt. Richard Heany, related after being released from being a German POW, contained in "Missing Air Crew Report 3295" provided to the author by Marko Zdovc.

19. For details and official evaluations of the raids see: Kit C. Carter and Robert Mueller, compilers, "U.S. Army Air Forces in World War II Combat Chronology 1941-1945, Center for Air Force History at http://www.airforce-history.hq.af.mil/Publications/fulltext/wwii_combat_chronology.pdf, particularly <http://permanent.access.gpo.gov/lps51153/airforcehistory/usaaf/chron/44/feb44.htm> viewed 24 March 2010, 5:50 p.m.

20. Detail of the events before and

during takeoff are from Roger McColleston, another bombardier in the 451st. See "Raid on Regensburg" at <http://www.flightjournal.com/ME2/dirmod.asp?sid=F999E8C39FCE47DEB4CDBABBFBF37179&nm=The+Magazine&type=PubPagi&mod=Publications%3A%3AArticle+Title&mid=13B2F0D0AFA04476A2ACC02ED28A405F&tier=4&id=4C61AB695C8E4723A6D891C5A20647D8>, viewed 16 March 2010 at 5:24 pm and the "Interview With Carlo J. Ginobile."

21. Over the targets, the German fighter disengaged to avoid being hit by friendly fire; defense was then turned over to the anti-aircraft ground forces.

22. Hill, *The 451st*, 23

23. An Unteroffizier was a non-commissioned officer in the Luftwaffe. The German Luftwaffe data was provided by Marko Zdovc. "2 B-24s were shot down over Slovenia on the 25th by Uffz. Peter Schotz (6.ZG.1) during the Regensburg mission. The first at 12.13 near Maribor, the second at 12.25 just south of Celje. Sources Film C. 2025/1. Anerk.49 and 50. confirmed" from <http://forum.armyairforces.com/tmaspx?high=&m=183966&mpage=1#183966>, visited 24 March 2010, 7:10 pm. Account of the attack is by Howard Grove, a transcription of his report was sent to the family of Clifford D. Williams Jr. in 1949. Copy provided to the author by Peter Mahrle. Grove reports that the bomber was on its way back to the base when the attack began, but other Allied and German sources, as well as the flight direction of the bomber of the crash, indicate that it was en route to the target.

24. W. F. Craven and J. L. Cate, eds., *The Army Air Forces in World War II: vol 3 Europe: Argument to V-E Day, January 1944-May 1945* (online edition at: <http://www.ibiblio.org/hyperwar/AAF/III/index.html>, access 26 March 2010, 7:15 pm.), pp 41-43.

25. Hill, *The 451st*, 74.

26. Telephone conversation with Douma's sister, Martha Harberts, on 11 March 2010.

27. Major General Edward F. Witsell to Helen M. Douma, 9 July 1945, letter held by William Douma. *Grand Rapids Herald*, 10 July 1945.

28. *Grand Rapids Herald*, 17 June 1949.