

Spring 2015

# Aviation's Heartland: The Flying Farmers and Postwar Flight

Peter Simons

Hamilton College, [psimons@hamilton.edu](mailto:psimons@hamilton.edu)

Follow this and additional works at: <https://digitalcommons.hamilton.edu/articles>



Part of the [United States History Commons](#)

---

This document is the author accepted manuscript of an article published in: *Agricultural History*, vol. 89, no. 2 (2015): 225-246. doi: 10.3098/ah.2015.089.2.225. Copyright: The Agricultural History Society, 2015.

## Citation Information

Simons, Peter, "Aviation's Heartland: The Flying Farmers and Postwar Flight" (2015). Hamilton Digital Commons.

<https://digitalcommons.hamilton.edu/articles/273>

This work is made available by Hamilton College for educational and research purposes under a [Creative Commons BY-NC-ND 4.0 license](#). For more information, visit <http://digitalcommons.hamilton.edu/about.html> or contact [digitalcommons@hamilton.edu](mailto:digitalcommons@hamilton.edu).

## Aviation's Heartland: The Flying Farmers and Postwar Flight\*

**PETER SIMONS**

*In 1944 the National Flying Farmers organized at Stillwater, Oklahoma. The organization took advantage of aviation's wartime growth to promote flight as an integral part of agricultural life that would modernize production, break down social barriers, and give farmers greater access to markets. It also built on aviation's roots in the agricultural landscapes of the Midwest and Great Plains as well as the strategic role these spaces would come to play in the Cold War. In addition to giving farmers greater control over their land and work, flight was more broadly imagined to connect the agricultural heartland with consumers abroad, making the region the capital of the United States' "aviation empire." Although the Flying Famers failed to achieve their broader goals, the organization's early history provides further evidence of the international scope of farm life in the postwar era.*

**PETER SIMONS** is a lecturer in the history department at Hamilton College. He received a PhD in history from the University of Chicago and was a postdoctoral fellow in the environmental history of the north at Florida State University. Currently he is completing the manuscript "Global Heartland: Fighting the Cold War on the North American Farm," which traces the origins of international cooperation and Cold War development to private food aid and agricultural rehabilitation at the end of World War II.

---

\* *Agricultural History* 89, no. 2 (Spring 2015): 225–46: <http://www.jstor.org/stable/10.3098/ah.2015.089.2.225>

On the back cover of its May 1, 1943 issue, *Prairie Farmer* ran an advertisement for the Vultee Aircraft Corporation. Amid the mass mobilization for wartime production and military service, dissonances such as an airplane manufacturer advertising in a midwestern farm weekly were not uncommon. Vultee was not, however, urging farmers to contribute their scrap metal toward building new airplanes or paying homage to the flight crews who had left farms to fly over Europe and the Pacific. The company was instead announcing to farmers that no spot on earth was farther than sixty hours from their local airport.<sup>1</sup>

Over the course of World War II, agriculture in the United States had taken an international turn. Farmers who had opposed trade during the Great Depression found themselves contributing to a Lend-Lease program that sent their products to allies around the world. Although many benefited from the farm deferment program, farmers and farm workers were drafted into the military and often shared stories of life overseas in personal letters, farm periodicals, and local newspapers. A month before *Prairie Farmer* printed the Vultee advertisement, it featured stories on “Food for Humanity,” a program it began with partner radio station WLS encouraging farmers to increase production and help feed those living in warzones. Alongside articles encouraging hard work, the biblical basis for sharing food, and how food relief would shape the world’s future, the newspaper reminded its readers that, “the eyes of the world are on our farms in the Mid-West.” The international scope of US agriculture was reflected in the iconography used by farm suppliers, such as Pratts laying mash, DeKalb seeds, or Potash Company of America fertilizer, all of which paired familiar farm images with a globe.<sup>2</sup>

Vultee’s advertisement was tapping into this wartime internationalism and Americans’ reimagination of geography. The sixty hours it would take to travel from small town airports in

the Midwest and Great Plains to any point around the globe reiterated the then-common argument that aviation had eviscerated geography and reformulated international relations. The advertisement stated that airplanes had created new Main Streets that ran from small towns in the United States to London, Moscow, and Chungking. This global propinquity created by air travel posed both the threat of horrible new wars and the promise that they could be prevented through global amity. But rather than being left on the ground in the Midwest and Great Plains--in what would become known as “flyover country”--manufacturers, the federal and local governments, and farmers themselves considered agriculturists central to building a postwar aviation empire. Aircraft manufacturers planned to convert their warplane production to general aviation following the war, and federal plans aimed to promote aeronautical growth by building a more robust air transportation infrastructure that privileged rural airfields and complemented projects such as the St. Lawrence Seaway and the Superior Export Terminal in opening up the agricultural interior to the world. The Minnesota commissioner of aeronautics claimed that the backbone of this aviation empire was an organization formed in 1944 called the Flying Farmers. According to the Flying Farmers, postwar aviation would extend beyond commercial airlines and national air forces to include agriculturists who could fly crops and livestock to market by taking off from airstrips they had cleared amid their fields. The organization’s leaders argued that aviation would provide easy access to towns and cities, therefore lessening the isolation and discontent of farm life. They believed aircraft would modernize farm work and therefore further integrate the agricultural interior into the nation rather than render it a geographical obstacle that could be easily flown over.<sup>3</sup>

Like other technological salves for rural life, agricultural aviation neither corrected the social problems it was supposed to nor became as ubiquitous as its supporters had hoped.

Although the Flying Farmers never achieved their expansive goals for agricultural aviation, their ambitions and early history illustrate the continued growth of US agriculture's industrial logic and globalism following the Second World War.<sup>4</sup> Wartime demands facilitated the more rapid adoption of agricultural technologies, increased efficiency, and also paved the way for new postwar markets that would consume US food surpluses. While the federal government feared that farmers in the Midwest and Great Plains remained isolationists and likely opponents of postwar international cooperation, the Flying Farmers provide evidence that farmers in fact used their work on the land to affirm their importance to global rehabilitation and foreign relations.<sup>5</sup>

The push to make aircraft common agricultural implements also indicates how capital intensive farming practices and racism forced farmers to make their livelihoods elsewhere. In the spirit of postwar optimism, advocates of agricultural aviation imagined inexpensive aircraft that would be accessible to all farmers. Rural sociologist Otis Durant Duncan argued that aviation, unlike automobiles, would supplant class divisions like it overcame geographical obstacles. However, the preponderance of aircraft among wealthier livestock farmers in the Midwest and Great Plains, as well as crop-dusting companies in the South and West, shows how limited this access actually was. Aviation was supposed to make farming more efficient and profitable, but there were no provisions to help sharecroppers or tenants acquire land, let alone machinery, so that they could secure their stake in this prosperity. One did not need an airplane to be a farmer following the Second World War, but those who owned them generally reflected the overall consolidation of agricultural wealth among farmers over the second half of the twentieth century.<sup>6</sup>

Finally, during an era in which air travel and atomic weaponry fundamentally changed Americans' understanding of geography, the early history of the Flying Farmers shows both how

farmers in the Midwest and Great Plains experienced this shift and the role the region played in the longer history of aviation. The agricultural heartland was home to the major manufacturers of general aviation aircraft--including Cessna and Beechcraft in Wichita, Kansas, and, since 1946, Piper in Ponca City, Oklahoma--trained pilots for war and established navigation systems during the early decades of flight. Postwar aviation, moreover, repositioned the region at the center of the country's civil and defense transportation routes. As a key site for aviation, the region changed Americans' experience of space. Historian Richard White describes railroads spanning the region a century earlier creating hybrid space; simultaneously abstract and physical, the imagination of it fueled new ideas of time, distance, the landscape, and human relationships. Air travel expanded and intensified the experience of this hybrid space and helped link, for example, a wheat field in the Great Plains to both food aid recipients on the other side of the globe and the threat of nuclear annihilation. More immediately, aviation led to clearing land for airfields, the introduction of new sounds and sights passing overhead, the surrender of everything above the ground to something new called airspace, and sometimes the violence of an aircraft hurtling back to earth. So while its goals ultimately went unrealized, the history of the Flying Farmers helps show how the agricultural heartland of the United States became a global heartland at the dawn of the Cold War.<sup>7</sup>

The ambitions of the Flying Farmers were rooted in modern aviation's development on the agricultural landscape. After Wilbur and Orville Wright first flew from the sand dunes of North Carolina, they brought their work to the tallgrass prairie reached by interurban from Dayton, Ohio. The brothers transformed a cow pasture known as Huffman Prairie into a primitive airstrip that they could use rent-free so long as they drove Torrence Huffman's horses and cows out of harm's way before conducting any flights. Their aeronautical progress was

routinely gauged by flights over herds of cattle, staying aloft into a neighboring cornfield, passing over barbed-wire fences, and being kept on the ground by the same spring rains that prevented sowing the surrounding fields. In 1910 the Wright School of Aviation opened at Huffman Prairie, offering room and board for students at a celery farm across the road.<sup>8</sup>

Subsequent aviators, flying with no aeronautical infrastructure, continued to use actual fields as makeshift landing strips. In the 1920s the limited range of aircraft and frequent need for emergency landings prompted the publication of flying guides that instructed aviators how to read the landscape and listed where they could find suitable ground to land. The fields near Diamond Bluff, Wisconsin, for example, were “about perfect, being large, continuous with no fencing. The soil a rich [loam] and generally put to wheat.” Before landing, pilots would clear off animals with low passes in their aircraft, which often led unsuspecting farmers to accuse the aviators of trespassing and harming their crops and livestock. Farmers in turn faced fines when their animals obstructed established airfields and impeded the flow of airmail. Many early pilots, when not carrying airmail under contract with the federal government, earned extra money flying as barnstormers, assuming the title of itinerant nineteenth-century actors. By drawing crowds to the farm fields and fair grounds where they performed acrobatic routines and gave many Americans their first contact with aviation, these pilots built the country’s “air-mindedness” and tied it to the agricultural landscape. “Field” in turn became a standard appellation in early aviation infrastructure, identifying the actual terrain that airplanes depended on and establishing a term still found today at airports built on land long ago claimed from farms.<sup>9</sup>

Into the 1930s pilots still relied on tracing the section lines of the Land Ordinance or recognizing familiar landmarks to fly cross-country. Small towns affirmed their support for aviation by painting rooftops to announce where they were and point pilots toward the nearest

airfield. When pilots flew cross-country from the East Coast, they typically reached the Midwest at nightfall and needed to wait until daybreak to continue flying. For that reason, aerial navigation lights were built at Moline, Illinois, in 1924, the first of thousands of illuminated beacons built by the Post Office and later the Department of Commerce across the continental interior. By 1932 two thousand beacons between twenty and ninety feet tall guided pilots as they flew from coast to coast. The colored lights of the beacons and their flashing in Morse code told pilots the direction of travel, the location of emergency landing fields, and the route they were following. With their evocative rotating lights and supervision by the US Lighthouse Bureau, these “air lighthouses” embodied the metaphorical claims that aviation turned the remotest inland places into ports that were connected to the broader world. The messages they transmitted from the ground reminded aviators that even as flight helped them pass over the agricultural interior, they still depended upon it for safe passage.<sup>10</sup>

The imprint of the countryside persisted as aviation moved closer to cities. In lieu of dedicated runways, early airports continued to use open fields that allowed for adjustments to take off and land into whichever direction the wind blew. Along the perimeter of these fields were modest terminals and barn-like aircraft hangars, which together resembled farm buildings standing at the edge of cultivated fields. Airport maintenance further required knowledge of grass varieties, turf management, and agricultural drainage that was akin to caring for pastureland and warranted an appearance in the USDA’s *Yearbook of Agriculture*. The pastoral aesthetic of airports was practical both for the operation of aircraft and as a means to attract the non-flying customers who continued to constitute the majority of airport visitors. But even as urban airports that would become icons of US aviation--such as New York’s Municipal Airport and Washington’s National Airport--were built in the 1930s, the country was still dominated by rural

landing strips that were little more than portions of fields with closely cut groundcover or the stubble of harvested crops. Agricultural landscapes consequently mediated the American experience of early flight, with airfields cut out of the countryside, or resembling it, and serving as a bridge to technological innovation.<sup>11</sup>

During the Great Depression, advocates of aviation tried to sustain flight by ending the prohibition on federal funds for airports and using relief work to complete and improve airports. Because aviation was largely a rural phenomenon, these efforts complemented New Deal designs to modernize the countryside with better roads, electricity, and agricultural efficiency. Of the 662 airports approved for work relief projects, 461 were in cities with fewer than five thousand inhabitants that often served the rural hinterland. After limited progress under New Deal relief, legislation in 1938 created the Civil Aeronautics Authority and mandated the creation of a national airport plan to integrate air travel into the lives of rural Americans. Funding, however, remained meager and was directed toward improving existing airports rather than expanding the country's aviation infrastructure. As with the economy more generally, it took World War II to spur the development that would remake the agricultural landscape.<sup>12</sup>

Aeronautical optimists thought that the ability to quickly travel vast distances and overcome natural obstacles would promote global friendship and eliminate the need for war, while others believed that aircraft would make combat too awful and eliminate its possibility. The Second World War, however, further affirmed what the First World War had suggested--that aviation could make war more horrible yet still possible. The war also introduced millions of Americans to aviation as they piloted, crewed, and maintained military aircraft, assembled them in wartime factories, witnessed their continual presence overhead, or encountered them in promotional campaigns drumming up support for the war effort. The ubiquity of aircraft

rekindled a global geographical awareness in the agricultural heartland that had first been expressed during Charles Lindbergh's tour celebrating his Atlantic crossing but subsequently eroded under the weight of political isolationism.<sup>13</sup>

While wartime food demands ensured that those who remained on farms were part of the war effort, it was the airplane that transformed the place of the agricultural interior during World War II. For many isolationists, the geographical buffer that had justified nonintervention disappeared after the attack on Pearl Harbor, and the subsequent threat of aerial invasions seemed to leave no safe place. Joseph Grew, the former US ambassador to Japan, told midwesterners that they were "living 'under an ocean of air'" that made the region as likely a destination for enemy forces as any port city. Grew even warned Milwaukeeans that their city was the most likely target of a second Japanese bombardment. Congressman Melvin Maas of Minnesota stoked this aeronautical hysteria by telling his constituents that enemy air forces were studying Minnesota maps to plan their next attack. Minnesotans responded by participating in practice bombings and building one of the farthest-reaching civil air defense networks in the country, which included nearly twenty-seven thousand air raid wardens and almost nine thousand aircraft spotters. As late as March 1945, *Wisconsin Agriculturist and Farmer* declared that the region remained unsafe against aerial attack and needed greater efforts to monitor the sky. By placing civilians who had seemed safely insulated from international affairs on the frontline, aviation encouraged broader participation in the war effort, whether through abstract patriotism or material contributions such as rationing or war bond purchases. The geographical expansiveness of aerial warfare also built a case against the postwar return to isolationism and consequent opposition to international cooperation that interventionists felt was certain to occur in the Midwest and Great Plains.<sup>14</sup>

Efforts to build and train an air force reinforced the wartime presence of aviation in the countryside. Communities across the agricultural interior tried to attract new military airbases and training centers during the war, enticed by the economic prosperity they would bring. The armed forces, drawn by the region's flat terrain and ostensible isolation, in turn spent millions of dollars to construct air bases that were plotted out amid surrounding farm fields. Local farm boys-turned-pilots buzzed the fields from which the draft had taken them showing off their newfound prowess to spectators below and occasionally crashing tragically back to earth. The destructive capacity of long-range bombers became so central to the wartime experience in the countryside that Farmers Union president James Patton argued that B-29s made it impossible for farmers to fence off a piece of the world to claim as their own. For Patton, the air war being waged overseas remade the landscape at home, and the recalibration of distance forced farmers to reconsider their relationship both to the natural environment and people around the world.<sup>15</sup>

The terror and the hopes of aviation sparked the urgent search for how air travel could unify the world or assure US leadership of it. The war had placed every town and village "on the air-coast" and so intensely focused attention on the sky that the 1944 convention for the International Civic Aviation Organization in Chicago preceded the work of planning the United Nations. But these expectations were not limited to the optimisms of liberal internationalists or those hoping to forge a Pax Americana through airpower. Vultee's 1943 advertising campaign in *Prairie Farmer*, for example, exploited an agricultural market that aircraft manufacturers thought would sustain their profits after the war. Faced with compensating for more than nine billion dollars in contracts that would end after World War II, industry experts predicted, or hoped, that farmers would purchase 60 to 75 percent of personal aircraft made in the United States. *Wisconsin Agriculturist and Farmer* polled its readers in 1944 to gauge who expected to

someday travel by a personal helicopter or “stratoliner” and found that only one-third did, perhaps a disappointing number for manufacturers but still one that suggested optimism for an aeronautical future. While urban Americans could be counted on to use commercial aviation more heavily, it was rural Americans, especially farmers, who were poised to purchase aircraft. In particular, it was the wealthier livestock farmers of the Midwest and Great Plains, with extensive farm property and topographies amenable to aviation, who could create the predicted growth in personal aviation.<sup>16</sup>

Beyond the abstract notion of a shrunken world that would end the isolation of the Midwest and Great Plains from the outside world was the understanding that aviation’s geographical realignment had made the agricultural interior globally central. Historian James Malin noted this in his 1947 study of the North American grassland by writing that the air age had given the heartland a new significance and world outlook. Malin preceded this observation three years earlier in a two-part article written for *Agricultural History*, where he stated that the air age had reopened space declared closed by Fredrick Jackson Turner in his 1893 frontier thesis. Air travel did this not only by placing previously inaccessible locations within reach, but also by breaking space out of two-dimensionality and creating a new geographical consciousness that rivaled the era of New World exploration. For Malin, the agricultural interior was pivotal to this new way of imagining and traversing the globe. He noted that the great circle routes--the apparent arc on a map that constitutes the shortest straight line on a globe--traversed on long-distance flights traveling overseas emanated from the Great Plains and created a direct link between the agricultural heartland of the United States and far-flung regions of the world. Malin’s resituation of the heartland was echoed in popular air-age maps that centered on a polar axis and placed the Midwest and Great Plains not at the center of a continental buffer, but at the

doorway to the Arctic. Geographers further cited the “Arctic Mediterranean” created by air travel to displace Halford Mackinder’s Eurasian “Heartland” as the key to geopolitical power. Instead, they repositioned the new heartland in those areas surrounding the Arctic and even directly at the center of North America.<sup>17</sup>

These geographical arguments were more than academic curiosities. When the United States began supplying the Soviet Union with food and war materiel through the Lend-Lease program in 1941, it did so using a string of airbases that originated in the Upper Midwest and stretched through Canada and Alaska. In 1944 Vice President Henry Wallace brought public attention to the Alaska-Siberia air route when he flew to China and the Soviet Union, where he remarked upon Iowa-made corn oil and Minnesota-milled flour flown there by Lend-Lease. Because of these great circle routes, Minnesota writer Meridel Le Sueur correctly claimed that the Upper Midwest was poised to become the aerial doorway to Asia. After the war, Minneapolis-based Northwest Airlines was the first to fly direct, scheduled flights from the United States to East Asia and eventually adopted the name Northwest Orient, announcing that they had finally discovered “the fabled Northwest Passage.” The US military similarly turned its attention northward and built Arctic bases and early warning systems to defend against this new avenue of aerial invasion. This geographical realignment even made the Midwest and Great Plains appear to be viable locations for the new United Nations headquarters. Editor Charles Sheridan of the Washburn, Wisconsin, *Times* sent Senator Robert La Follette Jr. an editorial arguing that the Apostle Islands in Lake Superior were a practical choice for the new world capital. Echoing the sentiments of others who wanted the UN located in South Dakota or Michigan’s Upper Peninsula, the editorial argued that the air age had made the islands the “crossroads of the world.” In stark contrast to its prewar isolationism, aviation allowed the region

to emerge from the war as a possible home for future world government, no longer at the global periphery, but rather strategically central.<sup>18</sup>

Recovering from one world war and working to avoid another framed the postwar discussion about aviation in global terms. But, like aircraft manufacturers hoping to profit from an agricultural air age, more routine interests linked aviation to agricultural communities. Small-town boosters hoped that aviation would staunch the long-term movement toward better paying jobs in cities. Personal aviation could provide greater access to the market for farm goods while “three-cent” airlines would give families in the hinterland access to inexpensive long-distance travel and an unprecedented number of consumer goods. Airports consequently became a key index of progress in agricultural communities. The editor of Sauk Centre, Minnesota’s *Herald* believed that a new airport would counter the town’s “Podunk” legacy as the benighted Gopher Prairie of Sinclair Lewis’s *Main Street* and reinforce the “American Way of Life” embodied by improvement and advancement. At the 1943 Minnesota State Fair, Governor Edward Thye warned that ignoring the importance of airports would isolate towns like those that had been bypassed by the railroad in an earlier era. Airports were consequently not just luxuries, but rather “the hub of thousands of acres of farmland.” Government officials argued that, perhaps after the Second World War, aviation would help keep the boys down on the farm.<sup>19</sup>

Aided by the 1946 Federal Airport Act, state aeronautic commissions developed plans to provide a range of aviation infrastructure for small towns and rural areas. Michigan’s plan became a model for airport development with its aim to build an airpark in every city with a population of at least five thousand as well as roadside landing strips for more rural places. The state also sponsored air tours, flying breakfast clubs, and flight curricula in public schools to generate support for aviation. Wisconsin tried to accommodate the predicted flood of personal

aircraft by privileging the construction of small airports that would make it possible to cross the state by air and never be more than five or ten minutes from a landing field. The aeronautics department in Minnesota planned to develop a chain of eighty airports that would place nearly three-quarters of the state's population within ten miles of air transportation. The federal Civil Aeronautics Administration even created airport plans for agricultural areas that arranged for crops of appropriate heights to be grown between runways. The enthusiasm to develop aviation infrastructure and evidence of the region's strategic importance led the president of the National Aeronautic Association to claim that the country's "aviation empire" would develop in the Great Plains and Midwest.<sup>20</sup>

The Flying Farmers were a key part of this growth. The organization, whose membership had grown to twenty thousand by 1950, became evangelists of agricultural aviation after World War II. Members urged a personal commitment to flying and government support to help aviation remake farm life. The Flying Farmers began in Oklahoma and subsequently organized by state, principally in the Midwest and Great Plains, with cooperation between agricultural extension offices and farm publishers. This support, as well as the organization's predominance amid the extensive crop and livestock interests of the midcontinent, meant that agricultural aviation was largely directed toward further mechanizing farm production and allowing for more efficient work at a greater distance from the land. Planting and caring for crops from the air presented the prospect of only going into the fields for harvest and permitted farmers to manage ever-growing acreages. However, the Flying Farmers wanted agricultural aviation to be more than crop dusting or applying fertilizer and sowing seeds from the air.

In addition to saturating farm publications with press releases, the organization started the monthly magazine *National Flying Farmer* to promote accounts of locating loose livestock,

flying from town to field for urgent equipment repairs during harvest, and saving the lives of neighbors by quickly taking them to distant medical facilities. The magazine extolled the use of airplanes to survey fields, pick up goods in town, inseminate livestock, drop off mail and subpoenas, and check up on experimental crops planted far from home. The Flying Farmers' efforts to improve aviation facilities and accessibility led supporters in agricultural towns such as Hector, Minnesota, to boast being "the most air-minded town in the U. S. A." The low-cost airport in Osceola, Iowa, was held up as a model for agricultural towns, and farmers and ranchers in the agricultural periphery of Bozeman, Montana, constructed a "shopper's airport" that allowed them to fly into town without the need for ground transportation. When the city of Chicago dedicated Meigs Field, an airport built on Northerly Island in Lake Michigan, it generated excitement among agricultural aviators who could subsequently fly from their farms and land minutes away from the downtown Loop.<sup>21</sup>

By easing farm work and rural life, air travel was supposed to provide, according to *Prairie Farmer* writer Bill Renshaw, "another big step along the hard trail up from the peasantry of yesterday." It promised to eliminate the divisions between town and country as well as the drudgery and uncertainty of farm work, potentially reversing rural to urban migration and preserving the vitality of farm life. Although the Flying Farmers often replicated gendered farm roles by relegating women to the positions of elected queen or students in "Landit" classes that taught wives how to fly in case husbands became incapacitated, its modest efforts to highlight women pilots and flight instructors suggested that aviation could even begin to break down these inequities too aviation would break down the rural neighborhood perspective and sharpen relationships with the world at large. By modernizing farm work, aviation would revolutionize agricultural life and help farmers play a vital role in mass society.<sup>22</sup>

Underlying the transformation of rural life were the new connections agricultural aviation was supposed to engender through market relations. By the 1940s farmers in the Great Plains and Midwest had long been tied to international markets by rail and sea, but the speed and far-reaching access of aviation formed the first truly global system that could tie international affairs to everyday life on the farm. Air travel promised to open markets to those farmers whose products, such as milk and fruit, had previously been unable to survive long journeys without additional processing. In its most optimistic interpretation, farmers would be freed from their reliance on wholesalers and freight haulers by the ability to fly goods directly to market. In fact, farmers reported transporting crops, such as fruit allowed to fully ripen in fields outside Benton Harbor, Michigan, before reaching markets on the East Coast and milk that the Liberty Cheese factory in Dodge County, Wisconsin, collected by airplane. Aboard a flight transporting livestock from Vernon Center, Minnesota, to Guatemala, breeder and Flying Farmer Bert Hanson identified himself as a “bull stewardess” in charge of transporting thirty-one bulls. After the trip, Hanson claimed that he looked at every airplane overhead as a potential cattle farm traveling through the air.<sup>23</sup>

Air transportation also provided an avenue for direct foreign aid during the postwar recovery. Groups including the Poultry Improvement Association flew tens of thousands of hatching eggs to Czech and Polish farmers in order to help them rebuild their stocks and stave off postwar famine. In the late 1940s the Church of the Brethren, which had become known for its Heifers for Relief program, began flying cattle to European war refugees in Venezuela. The first flight fittingly took off from the Wright brothers’ hometown, Dayton Municipal Airport, where five hundred people gathered for a ceremony marking the occasion. In subsequent years, the church organized Operation Chickenlift to fly chicks to Egypt and South Korea. The program

carried so many chicks that in 1952 it could claim that over half of the chicks in Korea could trace their ancestry to hatcheries in the United States.<sup>24</sup>

For those farmers without access or interest in flight, they nonetheless experienced agricultural aviation through their contributions to fighting the Cold War as well as the novel intervention of federal and state governments in their work and land. When the Soviet military blocked access to the western sectors of Berlin, the United States and its allies began an airlift carrying tons of food and fuel to supply Berliners. The pilots who flew the physically and technically demanding missions were trained at Great Falls Air Force Base in Montana, which had been mocked up to resemble Berlin's Tempelhof airport. Growing in the fields surrounding their practice site was wheat that would fill the airplanes providing food to Berlin. Like Lend-Lease, the airlift became a trenchant illustration that aviation was a central tool for the United States to assert its global presence and that it would continue to tie the US heartland to the wider world. In following years, Arctic aviation further assured the region's position as a new redoubt on the frontlines of the Cold War with nuclear missile silos and interceptor aircraft stationed at bases built as a last line of defense. Therefore, even farmers who found agricultural aviation impractical or unobtainable were inexorably tied to air age geography by growing food for an international power at the beginning of the Cold War.<sup>25</sup>

In addition to Cold War intrigue, the creation of airspace took what had before belonged to whoever owned the land beneath it and placed it in the public domain, where it was consequently regulated to ensure safety and limit nuisances. Again, the agricultural interior was central to these efforts, where the Department of Agriculture's aerial gaze ensured compliance on the ground. As early as 1919 the USDA used aerial observation against crop-law violators, and by the late 1930s used more formal surveys to monitor cooperation with federally regulated crop

allotments and assess soil conservation. After the war the practice became widespread.

Huntington County, Indiana, farm agent Walter Rusk claimed that the Kodachrome photographs he took in the air convinced farmers of the need for soil conservation, in contrast to his earlier unheeded, earthbound pleas. Soil conservation tours became a common method to give farmers a dramatic perspective of the damage caused by poor agricultural practices and to show how to maintain soil health. Aerial imagery made the land legible, promoted efficiency, and ensured compliance that promoted the modernization and industrialization of agriculture. Aircraft provided a revisualization of the agricultural countryside's relationship to the wider world as mediated by the government, with efficient food production supporting burgeoning Cold War relief programs.<sup>26</sup>

In 1948 farmers and farm managers constituted the second most numerous group of private aircraft owners in the United States with 8,070 aircraft, a growth of 39 percent over the previous year's number. Despite that short-term growth, the dreams of agricultural aviation, like the hopes of a world without war, were not coming to fruition. The Flying Farmers continued to spread the gospel of airplanes in the countryside, but most tractors did not find aircraft tied down alongside them and many Flying Farmer chapters counted more townspeople than farmers among their members. Since the end of World War II, skeptics had surmised that farmers would never sacrifice their acreage to create landing strips and that the short trips most farmers completed by automobile would never be practical by air. Their doubts were affirmed, for even as more affordable and farm-focused aircraft became available, the United States' aeronautical infrastructure remained inadequate to make aviation widespread and routine. Air travel could not economically transport anything but the most expensive and urgently needed crops, and aircraft never became inexpensive or useful enough over short distances to supplant automobiles. Once

promising applications such as the extensive distribution of seeds failed to demonstrate much promise. By 1949 the USDA determined that earlier assessments remained true: broadcasting seeds by airplane was the most certain way to waste a large amount of seed and accomplish nothing else. Fertilizer similarly had limited effectiveness when applied from the air, suited for few crops other than rice. In fact, contrary to postwar plans that positioned the Midwest and Great Plains at the center of the aviation empire, it was the South and West that most used aircraft for agriculture as crop dusting and insect control proved to be their most effective uses. Conferences on agricultural aviation turned away from strategies to make flying ubiquitous and focused instead on improving technical applications. With the beginning of the Korean War, the Flying Farmers continued to promote the expansion of aviation, but did so with increasingly outlandish claims. In 1950, for instance, *National Flying Farmer* argued that farmers would provide a dispersed fleet of small aircraft to transport medical supplies and perform “mercy errands” while feeding the world in the event of a nuclear war. It became clearer that those farmers with airplanes were not the vanguard of agricultural aviation, but rather represented the few who could actually afford to fly.<sup>27</sup>

Like the broader hopes for global amity following World War II, the Flying Farmers’ vision of postwar agricultural aviation never materialized. The development of agricultural aviation instead reflected the capital intensification of agriculture and the growing presence of the state in everyday life. In fact, the first “Flying Farmer of the Month” chosen by *National Flying Farmer* in 1947 already revealed the mounting barriers to agricultural aviation and farming more generally. The organization chose Thomas Letnes, not a small-scale dirt farmer or veteran using his wartime flying skills, but a state legislator who farmed in Minnesota’s Red River Valley. Claiming to also have been Minnesota’s “first horseless farmer,” Letnes flew

among his thousands of acres, his fifty-thousand-bushel grain elevator, legislative sessions in St. Paul, and his winter home in San Diego. When the Farmers Union organized the Mercy Wheat campaign to feed starving Europeans in the spring of 1946, Letnes contributed the most wheat, and his daughter Marilyn contributed a sack of grain on behalf of local school children. As farm aviation grew in Minnesota while other uses of private aircraft contracted at the end of the 1940s, Letnes embodied flight's broad potential for agriculture. His participation in the Mercy Wheat campaign also underscored the postwar connections between farmers in the heartland and new consumers around the world. However, Letnes likewise symbolized the growing gulf between farmers with sufficient capital to modernize production and those left to turn elsewhere for their livelihoods. As much as the Flying Farmers argued that flight would improve the lives of all farmers, it could not overcome the fact that the growing amount of wealth required to operate a farm, not to mention include an airplane among one's agricultural equipment, posed a grave obstacle to anyone who wanted to have access to either.<sup>28</sup>

Despite these failures, the relationship between flight and agriculture in the United States is brought into clearer relief when compared to overseas counterparts who confronted aviation throughout the twentieth century. In 1917 Schiphol Airport was built on fertile land that earlier had been reclaimed from a lake between Amsterdam and Haarlem. Displeased by the incursion onto their land and the aerial nuisance similar to that affecting farmers in the United States, Dutch farmers threw potatoes, turnips, and other root vegetables at airplanes taking off and landing on what had once been called Ship's Hole. They could not, however, prevent the growth of what became one of Europe's busiest airports as it spread into their fields during the rest of the twentieth century. There were no similar protests at Hounslow Heath, where the British Air Ministry evicted farmers during World War II in order to build a military airfield named

Heathrow. After the war, the ministry continued to build the airport that it had failed to complete during hostilities, making it clear that the war had only provided a pretense to displace the farmers from land deemed desirable for London's new airport. The most protracted and violent struggle between aviation and agriculture began in 1966, when the Tokyo International Airport Authority announced its plans to build on land that had been imperial farms. Japanese farmers began a decades-long campaign to prevent the airport's construction by deploying firebombs, sabotaging the airport's infrastructure, and constructing concrete bunkers and steel towers to obstruct the flight paths of aircraft. When the airport finally opened in 1978, it did so with limited capacity and under heavy protection against potential attacks.<sup>29</sup>

The territoriality of aviation unfolded very differently in the postwar Midwest and Great Plains, where farmers embraced flight as a pathway to global engagement and modernity, a tool that would help them maintain their livelihood rather than demolish it, and a new perspective through which they conceptualized and worked their land. Unlike Dutch, British, and Japanese farmers who had seen their land cratered by aerial bombardment, farmers in the US interior encountered aviation as an instrument for convenience, freedom, prosperity, and global engagement. Flight in the agricultural interior of the United States did not encroach upon already limited rural space as it did for farmers overseas, but instead promised to reopen the frontier, end rural isolation, and connect farmers to consumers around the world. Although these promises remained mostly unrealized, agricultural aviation during the early postwar period underscored the broader structural changes US farming underwent as well as the vital role the agricultural interior played in establishing the country's place in the Cold War world. In addition to providing food aid and technical skills for overseas development, the air age Midwest and Great Plains provided a geographical foundation from which to assert US supremacy. Aviation created the

conditions under which residents reimagined their global centrality, resituating the region from a paragon of isolationism to one not more than sixty hours from any point on the globe.

---

<sup>1</sup>. The author would like to thank the anonymous reviewers for their comments and the participants at the “Kathleen Neils Conzen: Historical Legacies” conference, Jan. 5, 2012, Newberry Library, Chicago, Ill., where an earlier version of this paper was presented. Vultee advertisement, *Prairie Farmer*, May 1, 1943, 28.

<sup>2</sup>. *Prairie Farmer*, Apr. 3, 1943, 4. Pratts advertisement, *Prairie Farmer*, Oct. 27, 1945, 15; Dekalb advertisement, *Prairie Farmer*, Oct. 12, 1946, 28–29; Potash Company Of America advertisement, *Prairie Farmer*, Oct. 27, 1945, 20.

<sup>3</sup>. Susan Schulten, *The Geographical Imagination in America, 1880–1950* (Chicago: University of Chicago Press, 2001); Wendell L. Willkie, *One World* (New York: Simon and Schuster, 1943); J. Parker Van Zandt, *The Geography of World Air Transport* (Washington, DC: Brookings Institution, 1944); Robert Strausz-Hupé, “Aviation and International Co-operation,” *Annals of the American Academy of Political and Social Science* 299 (May 1955): 134–40; Charles A. Lindbergh, “Man’s New Environment,” in *The Impact of Air Power: National Security and World Politics*, ed. Eugene M. Emme (Princeton: D. Van Nostrand, 1959), 145–52. The term “flyover country” was first used in the 1970s. See, Cary W. de Wit, “Flyover Country,” in *The American Midwest: An Interpretive Encyclopedia*, ed. Richard Sisson et al. (Bloomington: Indiana University Press, 2007), 66–68; David T. Courtwright, *Sky as Frontier: Adventure, Aviation, and Empire* (College Station: Texas A&M University Press, 2005), 15. ; L. L. Schroeder to Forrest E. Watson, Oct. 28, 1946, file 1, box 7, Subject Files, Minnesota Department of Aeronautics, Minnesota Historical Society, St. Paul, Minn. (hereafter MHS); Angie Blakley-Reid, ed., *The Golden Edition: Celebrating 50 Years of Flying Farmers* (Wichita: International Flying Farmers, 1993),

---

70; William T. Piper and D.J. Duffin, *Private Flying: Today and Tomorrow* (New York: Pitman, 1949), 102–103.

4.

<sup>5</sup>. For examples of other technological solutions to rural life that did not meet expectations, see, Mark Fiege, *Irrigated Eden: The Making of an Agricultural Landscape in the American West* (Seattle: University of Washington Press, 1999); Hal S. Barron, *Mixed Harvest: The Second Great Transformation in the Rural North, 1870–1930* (Chapel Hill: University of North Carolina Press, 1997); Katherine Jellison, *Entitled to Power: Farm Women and Technology, 1913–1963* (Chapel Hill: University of North Carolina Press, 1993). Deborah Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture* (New Haven: Yale University Press, 2003), 3; Walter W. Wilcox, *The Farmer in the Second World War* (Ames: Iowa State College Press, 1947), 100; Bruce L. Gardner, *American Agriculture in the Twentieth Century: How It Flourished and What It Cost* (Cambridge: Harvard University Press, 2002), 147; Bill Winders, *The Politics of Food Supply: US Agricultural Policy in the World Economy* (New Haven: Yale University Press, 2009), 8; Jacqueline McGlade, “More a Plowshare than a Sword: The Legacy of US Cold War Agricultural Diplomacy,” *Agricultural History* 83 (Winter 2009): 79–102; “Information Pertinent to Postwar Cooperation with the United Nations,” Office of War Information Committee Material File, box 1, Project Files, 1940–45, Records of the Division of Program Surveys, RG 83, Bureau of Agricultural Economics, National Archives and Record Administration II, College Park, Md.; An Observer, “Ostrich into Eagle? Public Opinion in the United States on International Collaboration, with Special Reference to the Far East,” *Far Eastern Survey* 11 (Nov. 1942): 241–44. On farmer-led relief, see, William C. Stickney, speech, Apr. 27, 1946, folder 16, box 1, William Charles Stickney Papers, MHS.

<sup>6</sup>. Robert Wuthnow, *Remaking the Heartland: Middle America since the 1950s* (Princeton: Princeton University Press, 2011). For a contemporary perspective, see, Carey McWilliams, “Farms into Factories: Our Agricultural Revolution,” *Antioch Review* 1 (Winter 1941): 406–31. On racial discrimination in aviation, see, Alan D. Meyer, “Why Fly? A Social and Cultural History of Private

---

Aviation in Post-World War II America: 1945–1985” (PhD diss., University of Delaware, 2009). Otis Durant Duncan, “The Flying Farmer,” *National Flying Farmer* 3 (May 1950): 2.

<sup>7</sup>. Richard White, *Railroaded: The Transcontinentals and the Making of Modern America* (New York: W. W. Norton, 2012), 144.

<sup>8</sup>. Huffman Prairie was renamed Huffman Prairie Flying Field in 1990 when it became a historical landmark. Marla McEnaney, ed., *From Pasture to Runway: Huffman Prairie Flying Field, Wright Patterson Air Force Base* (Omaha: US Department of the Interior, 2002).

<sup>9</sup>. Bruce Swomley Eytinge, *Flying Guide and Log Book* (New York: John Wiley & Sons, 1921), 144; Michael J. Goc, “Flyboy from Westfield: The Barnstorming Days of Rellis Conant, 1917–1925,” *Wisconsin Magazine of History* 85 (Autumn 2001): 46–57, 50; “Sauk Centre Needs Airport Say Flier,” *Sauk Centre (MN) Herald*, Aug. 8, 1940, 2; “Who Owns the Air?” *Aerial Age* 15 (Sept. 1922): 456; “Animals Crowd Air Field,” *New York Times*, June 27, 1926, E19; Roger E. Bilstein, *Flight in America: From the Wrights to the Astronauts*, 3d ed. (Baltimore: Johns Hopkins University Press, 2001), 60; A. Bowdoin Van Riper, “Aviation Technology,” in *American Midwest*, 1479–81. On the fairground as a site of early flight, see, Gerald N. Sandvick, “The Birth of Powered Flight in Minnesota,” *Minnesota History* 48 (Summer 1982): 46–59; John Walter Wood, *Airports: Some Elements of Design and Future Development* (New York: Coward-McCann, 1940), cited in Bednarek, *America’s Airports*, 15. Eppley Airfield serving Omaha and Love Field in Dallas are examples of the appellation’s continued use.

<sup>10</sup>. Nick A. Komons, *Bonfires to Beacons: Federal Civil Aviation Policy under the Air Commerce Act 1926–1938* (Washington, DC: GPO, 1978), 138; Donald R. Whitnah, *Safer Skyways: Federal Control of Aviation, 1926–1966* (Ames: Iowa State University Press, 1966), 35; Daniel L. Rust, *Flying across America: The Airline Passenger Experience* (Norman: University of Oklahoma Press, 2009), 37–39.

<sup>11</sup>. Henry V. Hubbard et al., *Airports: Their Location, Administration and Legal Basis* (Cambridge: Harvard University Press, 1930); Marc Dierikx, *Building Castles of the Air: Schiphol Amsterdam and the Development of Airport Infrastructure in Europe, 1916–1996* (The Hague: Sdu, 1997), 34–35; Austin F. MacDonald, “Airport Problems of American Cities,” *Annals of the American*

---

*Academy of Political and Social Science* 151 (Sept. 1930): 221–83, 247; Ralph H. Morrish et al., “Airfields and Flight Strip,” in *Grass: The Yearbook of Agriculture 1948* (Washington, DC: GPO, 1948), 319–23; Alfred MacDonald, “Turf for Airports,” in *Proceedings of the State Airport Conference* (Manhattan: Kansas State College, 1945), 39–43; Bednarek, “The Flying Machine in the Garden: Parks and Airports, 1918–1938,” *Technology and Culture* 46 (Apr. 2005): 350–73, 356. A 1928 survey determined that most airports in the United States were that in name only, usually providing little more than a level field, B. Russell Shaw, “What Is an Airport,” *Airports* 1 (Dec. 1928): 17, cited in Bednarek, *America’s Airports*, 73.

<sup>12</sup>. Bednarek, *America’s Airports*, 99, 102–103.

<sup>13</sup>. Michael S. Sherry, *The Rise of American Air Power: The Creation of Armageddon* (New Haven: Yale University Press, 1987), 5; Gordon, *Naked Airport*, 20–21; David Pascoe, *Airspaces* (London: Reaktion, 2001), 48; Joseph J. Corn, *The Winged Gospel: America’s Romance with Aviation, 1900–1950* (New York: Oxford University Press, 1983), 124; Dominick A. Pisano, *To Fill the Skies with Pilots: The Civilian Pilot Training Program, 1939–46* (Urbana: University of Illinois Press, 1993); Wayne S. Cole, *Charles A. Lindbergh and the Battle Against American Intervention in World War II* (New York: Harcourt Brace Jovanovich, 1974).

<sup>14</sup>. Arthur H. Vandenberg Jr. and Joe Alex Morris, eds., *The Private Papers of Senator Vandenberg* (Boston: Houghton Mifflin, 1952), 1; Schulten, *Geographical Imagination in America*, 205; “Pearl Harbor Raid May Be Repeated in Milwaukee: Grew,” *Milwaukee Sentinel*, June 15, 1943, 1, 8; Dave Kenney, *Minnesota Goes to War: The Home Front during World War II* (St. Paul: Minnesota Historical Society, 2005), 38–39; “Civilian Aids in State’s War Effort 100,000,” *Sauk Centre Herald*, June 11, 1942, 12; “Plane Spotting Service Being Organized Here,” *Sauk Centre Herald*, Mar. 26, 1942, 7; “If I Were Writing the Peace,” *Wisconsin Agriculturist and Farmer* (Racine, Wisc.), Mar. 17, 1945, 20; Sherry, *In the Shadow of War: The United States Since the 1930s* (New Haven: Yale University Press, 1995), 89.

<sup>15</sup>. R. Douglas Hurt, *The Great Plains During World War II* (Lincoln: University of Nebraska Press, 2008), 242–52; Al McIntosh, *Selected Chaff: The Wartime Columns of Al McIntosh, 1941–1945*

---

(St. Paul: Zenith, 2007), 182; “Dips His Plane in a Salute to Girl; Kills Her,” *Chicago Daily Tribune*, June 22, 1946, 1; “‘Cooperate or Die,’ Patton Tells Wisc. FU Meeting,” *Farmers Equity Union News* 39 (Aug. 1945): 1.

<sup>16</sup>. Ernest W. Williams Jr., *The Outlook for Domestic Air Transport*, Planning Pamphlet No. 21 (Washington, DC: National Planning Association, 1943), 20–21; Jenifer Van Vleck, *Empire of the Air: Aviation and the American Ascendancy* (Cambridge: Harvard University Press, 2013), chpt. 3; Jeffrey A. Engel, *Cold War at 30,000 Feet: The Anglo-American Fight for Aviation Supremacy* (Cambridge: Harvard University Press, 2007), 8–9; Civil Aeronautics Administration, *Small Airports* (Washington, DC: GPO, 1945), 1; “Flying Farmer Is Predicted by Air Industry,” *Chicago Daily Tribune*, May 16, 1945, 25; “Wings for Farmers,” *Business Week* 916 (Mar. 22, 1947): 20; “Survey Shows Farmers Are Nation’s Aircraft Users,” *National Flying Farmer* 1 (Oct. 1947): 9; Department of Commerce, National Airport Plan, 78 Cong. Doc. H, 807, at 2–3 (1945) (2nd sess.); “Agriculture and Private Flying Called Hope of Aircraft Industry,” *Civil Aeronautics Journal* 10 (Apr. 1949): 48. On aircraft manufacturers’ postwar effort to transition from wartime production, see, Karen Miller, “‘Air Power Is Peace Power’: The Aircraft Industry’s Campaign for Public and Political Support, 1943–1949,” *Business History Review* 70 (Autumn 1996): 297–27. “What Farm Folks See Ahead,” *Wisconsin Agriculturist and Farmer*, Apr. 15, 1944, 1.

<sup>17</sup>. James C. Malin, *The Grassland of North America: Prolegomena to Its History* (Lawrence: James C. Malin, 1947), 1; Malin, “Space and History: Reflections on the Closed-Space Doctrines of Turner and Mackinder and the Challenge of Those Ideas by the Air Age: Part 2,” *Agricultural History* 18 (July 1944): 107–26; Schulten, *Geographical Imagination in America*, 214–26; Halford J. Mackinder, “The Round World and the Winning of the Peace,” *Foreign Affairs* 21 (July 1943): 595–605; George T. Renner, “Peace by the Map,” *Collier’s* 113 (June 1944): 44, 47; George B. Cressey, *The Basis of Soviet Strength* (New York: Whittlesey House, 1945), 245.

<sup>18</sup>. Henry A. Wallace and Andrew J. Steiger, *Soviet Asia Mission* (New York: Reynal & Hitchcock, 1946), 32; Meridel Le Sueur, *North Star Country* (New York: Duell, Sloan & Pearce, 1945),

---

307; Harold R. Harris et al., "Minnesota in the World of Aviation," *Minnesota History* 33 (Summer 1953): 236–46, 241; Jack El-Hai, *Non-Stop: A Turbulent History of Northwest Airlines* (Minneapolis: University of Minnesota Press, 2013), 112; Croil Hunter, "Northwest Airlines Program Will Give Wisconsin Important Stake in Developing Last Frontier--The Sky!" *Badger Flying* 1 (Jan. 1946): 7, 14; Shelagh D. Grant, *Polar Imperative: A History of Arctic Sovereignty in North America* (Toronto: Douglas & McIntyre, 2010), 249; Matthew Farish, *The Contours of America's Cold War* (Minneapolis: University of Minnesota Press, 2010), 173–92; Charles M. Sheridan, "Why Not the Apostle Islands," *Washburn Times*, Feb. 21, 1946, United Nations file, box I:C65, Robert La Follette Jr., Papers, 1895–1960, Series C, Part I, La Follette Family Papers, 1781–1988, Manuscript Division, Library of Congress; Charlene Mires, "Sault Ste. Marie as the Capital of the World? Stellanova Osborn and the Pursuit of the United Nations, 1945," *Michigan Historical Review* 35 (Spring 2009): 61–82; "Black Hills Propose United Nations Home," *St. Cloud Daily Times*, Nov. 6, 1945, 2.

<sup>19</sup>. "Aviation in Relation to Home of Future Discussed by Airline Representative," *St. Cloud Daily Times*, Oct. 12, 1945, 6; Ed L. Rathe, "A City That Should Be Buzzing with Airport Plans," *Sauk Centre Herald*, Oct. 7, 1943, 2; Editorial, "Sauk Centre Must Have an Airport in Post-War Scheme," *Sauk Centre Herald*, Aug. 19, 1943, 2; Helen Smith and George Smith, *Airport America* (Boise: Film Originals, 1954), Internet Archive, <http://archive.org/details/AirportA1954>

<sup>20</sup>. John P. Andrews, *Your Personal Plane* (New York: Editions for the Armed Services, 1945), 115. Wisconsin State Aeronautics Commission, *Airport Development in Wisconsin, 1947–1949 and 1949–1951* (Madison: np, 1949), 4; "Plans Started on State's New Airport System," *Sauk Centre Herald*, Aug. 19, 1943, 8; Civil Aeronautics Administration, *Small Airports*, 26; Schroeder to Watson, MHS.

<sup>21</sup>. "Bad Roads and Snows Make Dakota Farmers Fly," *National Flying Farmer* 1 (Nov. 1947): 14–15; Elizabeth Coulson, "The Farmers They Fly High," *Collier's* 115 (Mar. 1945): 21, 55; "Flying Farmers," *Life* 19 (Aug. 1945): 43; "Flying Farmers," *Business Week* 883 (Aug. 3, 1946): 33; Vernon Vine, "The Farmer Takes a Plane," *New York Times Magazine* (Oct. 1946): 30; Aubrey O. Cookman, Jr., "'Plane-Dirt' Farmers," *Popular Mechanics* 88 (Nov. 1947): 108–11; Blakley-Reid, *50 Years*; Roland S.

---

Vaile et al., *Aviation in Minnesota: A Progress Report* (Minneapolis: University of Minnesota, 1952), 26–29; “Flying Farmers,” *Life*, 46; “For the National Convention--Minnesota’s Welcome Mat Is Out,” *National Flying Farmer* 3 (Apr. 1950): 9; “Iowa’s New Low Cost Port” *National Flying Farmer* 3 (Feb. 1950): 2; Louis G. True, “Montanans Build Their Own Shopper’s Airport,” *National Flying Farmer* 3 (Feb. 1950): 7, 12; “Meigs Dedication a Success,” *National Flying Farmer* 3 (Aug. 1950): 7, 22, 27.

<sup>22</sup>. Bill Renshaw, “20 Thousand Pilots Down on the Farm,” *Flying* 47 (Oct. 1950): 18; Blakley-Reid, *50 Years*, 70–71; Jim Greenwood, “Flying Farmer Roundup,” *Flying*, Oct. 1955, 24; Duncan, “The Flying Farmer,” 2.

<sup>23</sup>. Walter LaFeber, *The New Empire: An Interpretation of American Expansion, 1860–1898* (Ithaca: Cornell University Press, 1963), 21; Emily S. Rosenberg, *Spreading the American Dream: American Economic and Cultural Expansion, 1890–1945* (New York: Hill & Wang, 1982), 21; William Cronon, *Nature’s Metropolis: Chicago and the Great West* (New York: W.W. Norton, 1991), 147; Art Page, “Air Transportation for Farm Products,” *Chicago Prairie Farmer*, Aug. 4, 1945, 25; “Farm Folks . . . Make Farm News,” *Wisconsin Agriculturist and Farmer*, Oct. 5, 1946, 33; “Flies to Central America with 31 Bulls,” *Farmer (St. Paul, Minn.)*, May 3, 1947, 6, 24–25.

<sup>24</sup>. “60,000 Hatching Eggs Flown to Czechs,” *Chicago Prairie Farmer*, June 22, 1946, 1; “UNRRA Sending Eggs to Poland by Plane Today,” *Chicago Daily Tribune*, May 18, 1946, 6; Heifer Project Newsletter, June 8, 1949; Press Release, Oct. 3, 1953, folder 1, box 3, Heifer Project, Brethren Historical Library and Archives, Elgin, Ill. (hereafter BHLA).

<sup>25</sup>. Daniel F. Harrington, *Berlin on the Brink: The Blockade, the Airlift, and the Early Cold War* (Lexington: University Press of Kentucky, 2012), 248; Catherine McNicol Stock, “Nuclear Country: The Militarization of the US Northern Plains, 1954–1975,” in *Local Consequences of the Global Cold War*, ed. Engel (Washington, DC: Woodrow Wilson Center, 2007), 240–60; Gretchen Heefner, *The Missile Next Door: The Minuteman in the American Heartland* (Cambridge: Harvard University Press, 2012).

<sup>26</sup>. Eldon W. Downs and George F. Lemmer, “Origins of Aerial Crop Dusting,” *Agricultural History* 39 (July 1965): 123–35; William Fielding Ogburn, *The Social Effects of Aviation* (Atlanta:

---

Houghton Mifflin, 1946), 612; Renshaw, “He Flies Through the Air . . . And His Color Pictures Open Farmers’ Eyes” *Chicago Prairie Farmer*, Dec. 22, 1945, 8; Vaile et al., *Aviation in Minnesota*, 29–30; James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998), 58–59; Jason Weems, “Barnstorming the Prairies: Flight, Aerial Views, and the Idea of the Midwest, 1920–1940” (PhD diss., Stanford University, 2003), 103–106.

<sup>27</sup>. Civil Aeronautics Administration, *Aircraft Use in 1948* (Washington, DC: GPO, 1950), 19; Grace Terry, *Once upon a River . . . They Were There: People Who Made Princeton’s First Century* (Rogers: DeForest, 2006), 243; Editorial, “Planes and the Farm,” *St. Cloud Daily Times*, June 5, 1945, 8; R. W. Hoecker and L. H. Brittin, *Florida’s Production of Agricultural Perishables in Relation to the Development of Air Freight* (Washington, DC: np, 1945); Hoecker et al., *The Use of Surplus War Cargo Planes to Transport Agricultural Perishables* (Washington, DC: np, 1945). Federal Aviation Agency, *Aircraft in Agriculture, 1959* (Washington, DC: GPO, 1961), 8–9; Vaile et al., *Aviation in Minnesota*, 164; “Defense in Depth,” *National Flying Farmer* 3 (Sept. 1950): 2.

<sup>28</sup>. Bert A. Hanson, “The Flying Farmer of the Month,” *National Flying Farmer* 1 (Oct. 1947): 16.

<sup>29</sup>. Pascoe, *Airspaces*, 74–75, 81; Koos Bosma and Martijn Vos, “The Demise of a Dinosaur? Reflections on the Expansion of Schiphol,” *Archis* 2 (1998): 8–17; Hans Samsom et al., *Schiphol 50* (Amsterdam: Van Kampen, 1970), 13.