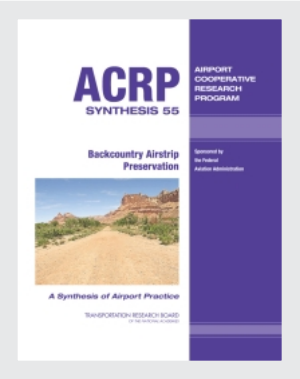

Backcountry Airstrip Preservation

DETAILS

76 pages | 8.5 x 11 | PAPERBACK
ISBN 978-0-309-27140-0 | DOI 10.17226/22368

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AIRPORT COOPERATIVE RESEARCH PROGRAM

ACRP SYNTHESIS 55

Backcountry Airstrip Preservation

A Synthesis of Airport Practice

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WASHINGTON, D.C.
2014
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AIRPORT COOPERATIVE RESEARCH PROGRAM

Airports are vital national resources. They serve a key role in transportation of people and goods and in regional, national, and international commerce. They are where the nation's aviation system connects with other modes of transportation and where federal responsibility for managing and regulating air traffic operations intersects with the role of state and local governments that own and operate most airports. Research is necessary to solve common operating problems, to adapt appropriate new technologies from other industries, and to introduce innovations into the airport industry. The Airport Cooperative Research Program (ACRP) serves as one of the principal means by which the airport industry can develop innovative near-term solutions to meet demands placed on it.

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ACRP SYNTHESIS 55

Project A11-03, Topic S03-08
ISSN 1935-9187
ISBN 978-0-309-27140-0
Library of Congress Control Number 2014935472

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Transportation Research Board
Business Office
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Washington, DC 20001

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Cover figure: Mexican Mountain (UT Photo by Price District BLM, June 2013 EA Airstrip Maintenance).

FOREWORD

Airport administrators, engineers, and researchers often face problems for which information already exists, either in documented form or as undocumented experience and practice. This information may be fragmented, scattered, and unevaluated. As a consequence, full knowledge of what has been learned about a problem may not be brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

There is information on nearly every subject of concern to the airport industry. Much of it derives from research or from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information and to make it available to the entire airport community, the Airport Cooperative Research Program authorized the Transportation Research Board to undertake a continuing project. This project, ACRP Project 11-03, "Synthesis of Information Related to Airport Practices," searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute an ACRP report series, *Synthesis of Airport Practice*.

This synthesis series reports on current knowledge and practice, in a compact format, without the detailed directions usually found in handbooks or design manuals. Each report in the series provides a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems.

PREFACE

By Gail R. Staba
Senior Program Officer
Transportation Research Board

Backcountry airstrips in remote areas support a wide variety of unique aviation activities. Aviators consider backcountry airstrips under threat, and these airstrips have steadily decreased in number over the past several decades. Preserving publicly owned backcountry airstrips has gained the attention of many individual pilots, state aviation agencies, and aviation associations as airstrips have been closed, restricted, or not maintained. Airstrip closures or restrictions on private land are often the result of landowners finding a different use for the property, while closures or restrictions on public lands are driven by many factors. Airstrips in the eastern United States are primarily located on private or state lands and in the western United States on federal lands. In Alaska, owing to the physical geography of the state, the vast majority of landing areas are backcountry, or bush, airstrips.

John W. Anderson, T-O Engineers, Inc., Boise, Idaho, collected and synthesized the information and wrote the report. The members of the topic panel are acknowledged on the preceding page. This synthesis is an immediately useful document that records the practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As progress in research and practice continues, new knowledge will be added to that now at hand.

CONTENTS

Note: Many of the photographs, figures, and tables in this report have been converted from color to grayscale for printing. The electronic version of the report (posted on the Web at www.trb.org) retains the color versions.

BACKCOUNTRY AIRSTRIP PRESERVATION

SUMMARY

The preservation of publicly owned backcountry airstrips has become a concern to many individual pilots, state aviation agencies, and aviation associations, as an increasing number of airstrips have been closed, restricted, or not maintained. Backcountry airstrips in the eastern United States are primarily located on private or state lands, and in the western United States on federal lands. Airstrip closures or restrictions on private holdings are often the result of landowners finding a different use for the property, while closures or restrictions on public lands are driven by more varied factors. In Alaska, because of the generally rugged terrain, the vast majority of landing areas in Alaska are backcountry, or bush, airstrips; and they remain a significant element of the state's overall aviation network.

Backcountry airstrips were constructed to provide access to public and private property in a time when air travel and transportation proved to be faster and more economical than primitive roadways or trails. With the growth of backcountry aviation, ranches were more viable, minerals and timber could be explored and extracted, remote public lands could be accessed, and hunting and fishing lodges became more available to the general public.

However, there are many contemporary as well as continued benefits derived from backcountry airstrips. In addition to providing access to America's outback, they also provide access for wildland firefighting where topography prohibits ground passage, emergency access to remote areas with few if any improved roads, alternate landing and flight training facilities, access for land and resource management, and access to remote infrastructure.

Information for this synthesis was acquired through a literature review concerning the history of backcountry airstrips, legislation protecting the facilities, and past management practices; and a survey and potential list of interviewees was developed. Twenty-seven of 28 participants responded to the survey, a 96% response rate; and the survey revealed many issues facing backcountry airstrips today.

Although many of the publicly owned airstrips continue to be used for agency operations, a major demand for these airstrips over the past several decades has been related to recreational use by private pilots and charter operations. This increased recreational use of backcountry airstrips has resulted in expanded membership among pilot associations; and these associations in turn have led the effort to preserve and maintain backcountry airstrips for public use. Pilot organizations donate labor, materials, and money to airstrip preservation efforts while also investing their personal time in building cooperative working relationships with airstrip owners.

Communication between pilot organizations and state and federal authorities has resulted in a greater understanding of the issue involved by both agency personnel and the aviation organizations advocating for the preservation of backcountry airstrips. As a result, some airstrips previously closed have been re-opened; restrictions previously placed on airstrips, which essentially left their usage impossible, have been lifted; and in at least one case, a new airstrip has been developed on federal land. Airstrip operations and maintenance plans have been developed, providing a documented scheme for the long-term operation and maintenance of individual airstrips.

FIGURE 1 Volunteer at Thomas Creek Airstrip (ID photo by Larry Taylor).

Neglect and/or lack of maintenance are among the most common reasons airstrips become unusable and potentially face closure. While pilot organizations often provide significant volunteer labor (see Figure 1) and donations of materials and money to maintain backcountry airstrips, states are generally only able to provide limited resources to airstrips that they have administrative control over, and federal agencies have even more limited funding available.

Preserving backcountry airstrips is becoming a pressing issue for agencies and their personnel, as pilot associations work to educate them on the importance of these facilities to the overall public use of their lands. All parties have become aware that these airstrips are portals to other uses, and that they have a smaller impact on the land than other recreational uses and modes of access. However, maintenance, funding, and challenges from other groups opposed to aviation in sensitive natural areas will remain a challenge into the future.

Pilot associations and foundations have undertaken a leadership role in preserving backcountry airstrips. Individuals and organizations have found that opening a dialogue about what backcountry airstrips are and how they are used is important for others to understand the issues concerning successful backcountry airstrip preservation. Further research suggested by interviewees includes a synthesis devoted to the role pilot organizations play and how they most effectively function, and an investigation of maintenance funding accounts that could be used to preserve backcountry airstrips.

CHAPTER ONE

INTRODUCTION

SCOPE OF THE PROJECT

Backcountry airstrips in remote areas support a wide variety of unique aviation activities. Aviators consider backcountry airstrips a national treasure under threat, as the number of these airstrips has steadily decreased over the past several decades. The objective of the study is to inventory the uses, benefits, and threats to backcountry airstrips; and to identify useful practices and strategies to manage these threats. The principal audience for this synthesis is airstrip users, policy bodies, airstrip owners, and other stakeholders.

Leading threats to backcountry airstrips include, but are not limited to:

- Lack of an inventory of facilities and status information
- Surface degradation and the absence of regular and dedicated maintenance
- Liability and risk management
- Special interest group pressures
- Funding
- Inadequacy of relevant public policy
- Public unfamiliarity with backcountry aviation.

To help guide the study, a definition for backcountry airstrips is presented.

DEFINITION OF BACKCOUNTRY AIRSTRIPS

Backcountry airstrips are usually less than 3,000 feet in length; and generally, but not always, grass, dirt, or gravel strips in remote locations where access is otherwise limited to trails, waterways and/or primitive roads. They are owned by a variety of public agencies and private parties, and range from strips with little or no maintenance to more developed strips with regular maintenance and some amenities.

Because these airstrips are usually not paved, and often have departures and approaches requiring significant obstacle clearance, the aircraft that operate at backcountry airstrips are likely to have short takeoff and landing capabilities; good propeller-to-ground clearance; fat tires or regular tires, depending on operator preference and airstrip conditions; and the capacity to carry loads of up to four people and their camping gear. Hence, the more challenging (i.e., more neglected) backcountry airstrips may require more advanced piloting skills; while the more regularly maintained strips offer access to pilots with less specific backcountry flying skills.

A list of backcountry airstrips emerged from the literature review and survey for this project. Many of these airstrips were listed with various state and federal aviation agencies, and some were marked and identified on aeronautical sectionals and in various aeronautical facilities directories; but there were many more with little official documentation. Each airstrip had a unique story; however, the purpose of this synthesis is backcountry airstrip preservation, and while the history of these airstrips is indeed interesting, the critical piece is how that history contributes to their survival. A few particular airstrips are discussed in detail so their preservation success, failure, or uncertain outcome can be used as a lesson for future preservation and management practices.

SYNTHESIS METHODOLOGY

A literature review and survey were conducted concerning inventory uses, benefits, threats, and current and potential solutions to preserve backcountry airstrips. Information and examples were sought to illustrate that while many backcountry airstrips were designated for an initial reason, the current use might be significantly different. Where appropriate, evidence of the evolution of benefits of these revised uses and users is included.

A list of the literature to be reviewed was approved by the panel of experts; however, as the project proceeded, the list expanded significantly. (References and a bibliography follow the report.)

Using information from the literature review, a survey questionnaire was developed to solicit information regarding backcountry airstrips. Although the survey was designed so that survey participants could provide written responses, the majority of the surveys were conducted through telephone interviews. Survey participants included state and federal aviation officials, members of pilot organizations, backcountry charter operators, backcountry flight instructors, and individual users and owners of backcountry airstrips. To encourage survey participation and maintain confidentiality, the majority of the survey responses were aggregated. Twenty-eight (28) persons or agencies were contacted to participate in the survey; one person who was asked to participate in the survey did not complete the process, for a participation rate of 96%. The survey is reproduced in Appendix A.

During conversations with survey participants, additional sources of information were often identified. Knowledge possessed by the pilots, agencies, and organizations involved in this project provided insight into the role of backcountry airstrips as a part of the national aviation system. Many pilots and organizations expressed a belief that the airstrips they were associated with were the best airstrips in the country, a sentiment that made it challenging to maintain their focus on airstrip preservation as opposed to describing the value of the airstrips.

Most survey participants live and fly in the western United States. While they fly into privately owned backcountry airstrips, the primary emphasis of their comments concerned publicly owned backcountry airstrips. These airstrips are located on land owned by the U.S. Forest Service (USFS), the Bureau of Land Management (BLM), U.S. Bureau of Reclamation, and a few individual states. Privately held backcountry airstrips, as well as those in the eastern United States, are not included in this synthesis; however, many of the issues discussed can be applied to these airstrips as well.

CHAPTER TWO

USES AND BENEFITS OF BACKCOUNTRY AIRSTRIPS

BACKGROUND OF BACKCOUNTRY AIRSTRIPS

For the purpose of this project, most of the airstrips considered were located on public land or on private land with access to public lands. The majority of these lands are under control of the USFS, BLM, or the Bureau of Reclamation.

Many of the backcountry airstrips were developed between the 1920s and the 1950s, at a time when use of small general aviation (GA) aircraft was expanding in locations that were difficult to access by other modes of transportation. Most backcountry airstrips were originally created in support of an industrial or commercial demand, including mining, mineral production, timber harvest, agency access, and ranching. Other remote airstrips were developed to access hunting and fishing retreats that previously could only be reached on foot or horseback (Holm 2012). Over time, many backcountry airstrips fell into disuse and disrepair because roadways were developed nearby, and it was often less expensive to use the roadway system than to fly in. However, Alaska still depends on backcountry/bush airstrips to access the majority of the state.

Over time, many ranches became unprofitable, and ultimately were surrounded by federally designated wilderness or roadless areas. Some of the ranches and other private holdings were purchased by agencies such as USFS; others became "inholdings"—still private property but surrounded by areas considered by agencies and wilderness advocates to be wilderness areas. Logging and other rural paths eventually reached many of the airstrips and the use of these strips diminished, leading to their demise. However, the remaining airstrips offer a unique alternative for access to America's outback that has a smaller impact on the surface of the land than other forms of transportation.

LOW-IMPACT ACCESS TO AMERICA'S BACKCOUNTRY

Backcountry airstrips are seen by pilots and aircraft owners as "portals" to the outback. Other users of the backcountry access these remote areas by a variety of methods: driving by established roads or off-road trails, using pack animals, or hiking. Each of these methods requires them to be in contact with and have an impact on the ground for the entire trip. Air access to the backcountry results in no physical impact on the land other than at the airstrip site.

As internal trailheads, backcountry airstrips usually occupy only a few acres of land, which makes them less intrusive than roads and off-road routes that provide initial access similar to backcountry trailheads, hunting and fishing locations; and campsites that use more land than airstrips and also require maintenance.

Even foot trails that access similar areas have a larger footprint on the ground than backcountry airstrips. Environmental impacts such as erosion, dust, and sediment can be caused by people cutting switchbacks, blazing their own trails, and by riding horses.

USES AND USERS OF BACKCOUNTRY AIRSTRIPS

The origins of backcountry airstrips can be traced primarily to the 1920s through the 1950s, when the roadway system was not as developed as it is today and when small aircraft made extremely remote areas more accessible. The synthesis survey asked what stakeholder groups are associated

FIGURE 2 Camping at Cabin Creek Airstrip (photo by Larry Taylor).

with backcountry airstrips and how the airstrips are presently being utilized. The survey responses indicated that backcountry airstrips are now primarily used for recreational flying, but the survey also revealed that backcountry airstrips continue to be used for commercial purposes such as mineral extraction. Many are used as portals for research agencies, such as state fish and game departments; and they are often used as staging areas for wildland firefighting activities. Many of the public airstrips are used by commercial aircraft operators to transport clients to remote recreational areas (Figure 2). Private backcountry airstrips are used for access to lodges and private property.

The survey asked participants to identify the top three benefits that backcountry airstrips offer them. The 10 most frequently reported benefits are shown in Table 1.

Recreation Portals

Survey participants from the Recreational Aviation Foundation (RAF), Idaho Aviation Foundation (IAA), Utah Backcountry Pilots Association (UBCPA), Arizona Pilots Association (APA), and Aircraft Owners and Pilots Association (AOPA) responded that at the present time, recreational pilots/aircraft owners are the most frequent users of backcountry airstrips. Responses indicate that pilots use these airstrips as portals or internal trailheads to other recreational activities including camping, hiking, fishing, and hunting.

Normally the airstrips are used by pilots as their ultimate destination; however, flying to airstrips as a primary activity is seen by some pilots as a right, and is no different from such vehicular

TABLE 1
SURVEY LIST OF BACKCOUNTRY AIRSTRIP USES AND USERS

Backcountry Airstrip Use and Users	Survey Participants Mentioning This Use
Recreational Portals	25
Emergency Landings	15
Law Enforcement Access/Search and Rescue	18
Emergency/Life Flight Access	20
Wildland Firefighting	13
Fishing and Hunting Access	18
Private Lodge Access	12
Charter Operations	15
Access for Land and Resource Management	12
Research	8
Commercial/Instructor	6
State or Federal Agency	7
Association/Pilot Organization	5
Private Pilot User	8

recreation activities as four-wheeling, dirt biking, or snowmobiling. Survey participants involved in preserving and opening backcountry airstrips voiced concerns about overuse of airstrips for "bagging," especially at airstrips located in a wilderness area or wilderness study area (WSA). (Bagging is discussed in more detail in chapter three).

Emergency Landing Airstrips

Pilots are taught to plan for emergency landings at airports and airstrips that are along their flight route. Many backcountry airstrips are depicted on sectional maps and in global positioning system databases. Even though mechanical failure may not be as common as it once was, weather is still a major flight safety risk for pilots and the smaller aircraft suited to landing at backcountry airstrips. Although pilots not familiar with some of the more challenging airstrips should not use them as emergency stops, the majority of backcountry airstrips are useable in most such cases. Planning for an emergency landing in advance allows pilots to have a level of confidence and a strategy if an emergency landing becomes necessary.

Law Enforcement Access/Search and Rescue

Backcountry airstrips are often used by law enforcement agencies for search and rescue support and for extraction of lost or injured people. As an example, Arnold Aviation of Cascade, Idaho, flew Federal Bureau of Investigation (FBI) agents into Pistol Creek Airstrip in August 2013 to set up a staging area in order to conduct the rescue of a teenage girl who had been abducted and taken to the remote Frank Church–River of No Return Wilderness Area. The FBI also used helicopters to insert additional extraction team members (*Idaho Statesman* August 10, 2013). This particular backcountry airstrip served a pivotal role in enabling the FBI to rescue the victim. Backcountry airstrips also serve as staging areas for search and rescue missions for missing persons and aircraft. In addition, they may become staging areas to extract illegal drugs/marijuana crops.

Emergency/Life Flight Access

Due to the remote nature of the backcountry areas, emergency access is extremely limited with few, if any, improved roads. Emergency and lifesaving fixed wing aircraft and helicopter equipment frequently use backcountry airstrips to airlift people who are critically injured in the backcountry. In some circumstances, this can be a medical evacuation of pilots and or passengers injured in crashes at the airstrips or in remote country near an airstrip. Backcountry airstrips are also used as base sites for conducting recovery missions for the remains of those who have passed away in the remote areas inaccessible by other modes of transportation.

Wildland Firefighting

Many backcountry airstrips are used by wildland firefighters as staging areas and access points for conducting wildland firefighting efforts. Smokejumpers and Helitack crews also use these remote airstrips as extraction points during firefighting operations. Backcountry airstrips often provide direct access for fire crews. During active fire seasons or events, several backcountry strips may be closed to the public in order to provide full access for firefighting efforts; in such cases, an FAA Notice to Airmen (NOTAM) and other communications are issued so that pilots will know of these activities. In August 2013, a public service announcement was posted as on the Idaho Airstrip Network website identifying airstrips affected by firefighting activity (see text box).

> Bernard is closed until further notice because of a washout. Krassel is closed until further notice for a fire fighter camp. Airstrips that had been closed for firefighting (Warm Springs & Slate Creek) have reopened. Caution still advised for Johnson Creek due to helicopter traffic. NOTAM August 2013 (http://www.idahoaviation.com/idahoAirstripNetwork)

Fishing and Hunting Access

Several survey participants emphasized that flying into backcountry airstrips provides access to fishing and hunting grounds that would be impracticable to approach on foot or horseback. Camping is a secondary activity often associated with multi-day fishing or hunting trips. This combination of activities—backcountry flying, fishing or hunting, and camping—provides unique opportunities for outdoor enthusiasts.

Private Lodge Access

Airstrips located on both public and private land provide access to privately owned lodges, most of which make excellent staging points to access a variety of backcountry adventures. Some of the facilities with river access are now used as put-in/take-out or stopover destinations for rafting and drift fishing trips. Owners and operators of lodges located near backcountry airstrips regularly invite visiting pilots to enjoy a meal or extend their visit into an overnight stay.

Charter Operations

During summer months, fishing and rafting charter pilots are common visitors to backcountry airstrips. During the fall, hunters of deer, elk, mountain goats, and big horn sheep are the typical customers of charter operators. Charter operators also fly in supplies and mail to backcountry users. Resupply missions provide private airstrips and nearby cabins and ranches with necessary food and materials. Some flights are made to remote public airstrips with neighboring guest ranches, small towns, and research stations. In the wintertime, although some outback areas can be accessed by snowmobile or jet boat, flying is often faster and more economical when compared to other forms of transportation; so some of these airstrips and their adjacent areas are resupplied by aircraft with skis. In addition, river or snow conditions may make flying the only viable alternative for access.

> Ray Arnold of Cascade, Idaho, flies the last two U.S. Postal Service air mail routes. These "Star Routes" pay for a portion of his operating expenses, supplemented by his flying groceries, freight, and passengers to backcountry airstrips. Because of budget cuts, the Postal Service has tried to eliminate these last air mail routes, without which some customers would be miles, and perhaps months, away from a delivery; but public pressure has kept it in place (Ray and Carol Arnold, personal communication, Nov. 2013).

Access for Land and Resource Management

Land managers have used backcountry airstrips for access to wilderness and remote regions since the 1930s. Early on, USFS land managers proposed building a network of airstrips to support remote guard stations, firefighting, trail maintenance, and resource management. The proposal was met with resistance from wilderness advocates within the Forest Service, and ultimately few airstrips were constructed because of changing national priorities during WWII. After the war, different land managers had different priorities, and by then numerous airstrips had already been constructed by private land owners (Holm, 2012).

Research

Universities use backcountry airstrips to promote educational programs and conduct research studies. Federal agencies also perform research in order to understand and manage natural resources. Taylor Ranch Field Station in Idaho's remote Frank Church River of No Return Wilderness area, now owned by the University of Idaho, uses the airstrip originally constructed for the ranch. When the ranch was sold to the university in 1970, it was stipulated that the school would always maintain its use as a private airstrip. Today, the field station is used by university students for a variety of wilderness and biology studies, and air is the only way to transport people and supplies in and out.

FLIGHT TRAINING

Instruction regarding the proper procedures to fly in and out of backcountry airstrips goes beyond discussions on density altitude and proper approach and takeoff techniques. The UBCPA and the APA have stated many of the following principles which they encourage being included in backcountry flight training (http://www.utahbackcountrypilots.org) (http://azpilots.org/):

- Backcountry airstrips are a fragile asset which should be treated respectfully.
- Practice "no trace camping and tread lightly disciplines."
- Backcountry airstrips are a national treasure.
- Hikers, horsemen, campers, and boaters share the backcountry and should be treated with respect. Be courteous to other users in the area.
- Pilots should be especially mindful of their use of wilderness and WSA backcountry airstrips.
- Do not use training as a means to say you've been to a particular airstrip.
- Keep the noise signature of the aircraft to a safe minimum.
- Keep your aircraft free of noxious weeds.
- Give back to airstrips through volunteer labor and maintenance projects.

Backcountry airstrips are used for a variety of training purposes, including but not limited to the following:

Specialized Pilot Training

Flying into backcountry airstrips requires proficiency training and airport familiarity. There are several specialized pilot training schools that teach licensed pilots skills tailored to backcountry flying. Some schools with multiple instructors offer training in a variety of aircraft, including tailwheel or "traildragger" planes (which require additional training and specific tail-wheel endorsements), while also leading expeditions to remote airstrips across several regions of the country.

U.S. Department of Defense

The Department of Defense has utilized backcountry airstrips at various locations for specialized reasons. For example, between 2010 and 2012, the U.S. Air Force used airstrips at McCall Municipal Airport in Idaho to train pilots flying the PZL M28 Skytruck, a twin-engine turbine aircraft capable of carrying heavy loads and up to 15 passengers. Other U.S. airstrips in mountainous river canyon areas offer piloting challenges similar to those in Afghanistan and other countries where supplies and personnel need to reach remote areas without developed airports (Rudder Flutter Fall 2010).

Training for Relief Flights

Mission Aviation Fellowship, headquartered in Nampa, Idaho, flies relief flights into Africa, Asia, and South America, often transporting aid packages to less developed areas with poorly maintained airstrips. Like the Air Force, the organization often uses backcountry airstrips to train pilots to ensure their skills are sufficient to handle the roadways, fields, and rugged airstrips they will likely encounter overseas. One of the reasons this organization chose to be based in Nampa was its convenient access to backcountry strips in Idaho and the surrounding region (http://www.maf.org/).

CHAPTER THREE

THREATS TO BACKCOUNTRY AIRSTRIPS

Backcountry airstrips and their users need protection and funding in order to be preserved as part of our American heritage (J. McKenna, personal communication, July 2013). This chapter reviews threats posed to backcountry airstrips, including those from political or social opposition to their existence, lack of maintenance, and some misuse by the pilot community.

ECONOMICS OF BACKCOUNTRY AVIATION

When the majority of backcountry airstrips were constructed, flying was still romanticized, thanks to public fascination with the exploits of such pioneers as Charles Lindbergh and Amelia Earhart. Many people longed to learn to fly, including veterans who used the G.I. Bill to earn their wings. Many of these pilots are the constituents seeking to preserve backcountry airstrips.

Many survey participants brought up the general public misunderstanding of the economic and ecological benefits of GA and backcountry airstrips. "Forty is now the average age for more than two-thirds of aircraft in the GA fleet which were purchased many years ago for a modest price" (Hoffman, FAA Safety Briefing). As an example, an older but well maintained Cessna 182 costs about $60,000 and is capable of flying a family of four with camping gear to most backcountry airstrips. In contrast, Table 2 offers examples of two other means for backcountry access—horseback and all-terrain vehicles—for approximately the same cost (RAF 2011).

Both airplanes and other vehicles have ongoing costs for maintenance, insurance, and fuel. Horses have ongoing costs for feed, shelter, and veterinary care. Backcountry airstrip users reported in the survey that they want the general public to understand that they are as mainstream as other users of the backcountry.

In a presentation to the House Committee on Small Business, the RAF submitted that, "[C]ompared to motor home travel, today you can purchase either a used Luscombe airplane or a Winnebago camper for less than $20,000; you can also buy a new Kodiak aircraft or Prevost motor coach for $1.5 million. Both forms of recreational vehicle are available for just about any price in between. In this way it was emphasized that aviation is not so different from other forms of recreational travel and should not be excluded from public lands" (http://theraf.org/ October 3, 2013).

CONCERNS ABOUT AIRCRAFT NOISE IMPACTS ON PEOPLE AND WILDLIFE

People frequently comment on and/or complain about aircraft noise in connection with airports and backcountry airstrips. Studies have reviewed noise impacts on humans in outdoor and wilderness settings. "As part of AOPA pilot members' effort[s] to preserve the experience of ground visitors and respect the natural quiet that visitors and wildlife enjoy, general aviation pilots currently observe a voluntary over-flight minimum altitude of 2,000 feet above ground level" (Boyer 1998). People in a wilderness setting have a greater expectation of quiet, and therefore aircraft noise of any type may affect them. However, according to a 1992 USFS report to Congress, aircraft noise intrusions did not appreciably impair surveyed wilderness users' overall enjoyment of their visits to wilderness areas nor reduce their reported likelihood of repeat visits

In 2013, the RAF received a $10,000 grant from AOPA to fund a scientific study of the impact of aircraft noise on wildlife, and will match this amount. The field research will be conducted in

TABLE 2
COMPARISON OF COSTS FOR ACCESSING BACKCOUNTRY AIRSTRIPS

Four Persons on Horseback		Four Persons on ATVs	
Four Riding Horses	$6,000	Four ATVs	$25,000
Two Pack Horses	$3,000	Trailer	$5,000
Saddles and Other Tack	$2,500	One three-quarter-ton 4x4 Crew Cab pickup	$30,000
Six-horse Trailer	$20,000	All-weather Riding Gear	$1,000
One-ton 4x4 Pickup Truck	$35,000		
Total	$66,500	Total	$61,000

Source: RAF (2011); modified by John Anderson.

backcountry airstrip settings, trapping wildlife to collect blood samples and record decibel levels. The goal of the study is to develop valid measures of stress-producing corticosteroids in birds and mammals attributable to noise from small aircraft in multiple backcountry settings. The study will commence in 2014, and researchers hope to publish findings in a peer-reviewed scientific publication in 2015. It is anticipated that this research will be valuable to land managers and to the general public (http://www.recreationalaviationfoundation.org/).

In "The Effect of Noise on Wildlife" (2007), Radle discusses the impact of noise pollution on animals:

> Noise pollution, as it affects humans, has been a recognized problem for decades, but the effect of noise on wildlife has only recently been considered a potential threat to animal health and long-term survival. Research into the effects of noise on wildlife, which has been growing rapidly since the 1970s, often presents conflicting results because of the variety of factors and variables that can affect and/or interfere with the determination of the actual effects that human-produced noise is having on any given creature. Both land and marine wildlife have been studied, especially in regards to the noise in the National Parks System and the onslaught of human-made cacophony in the oceans from military, commercial, and scientific endeavors.
>
> Most researchers agree that noise can affect an animal's physiology and behavior, and if it becomes a chronic stress, noise can be injurious to an animal's energy budget, reproductive success, and long-term survival. Armed with this understanding, it should follow that humans would attempt to minimize the threat to wildlife by reducing the amount of noise that they are exposed to in natural areas; but this has not been the situation. Natural areas continue to be degraded by human-made noise, wildlife continues to suffer from these disturbances, and to date the majority of the debate revolves around the egocentric demands of people to either produce more noise in nature (through motorized recreation, scientific research, military exercises etc.) or experience natural areas in the absence of anthropogenic noise. Neither side has adequately addressed the issue from the biocentric view of wildlife and the known, or as yet undiscovered, damage that our increasingly noisy human-altered environment is inflicting upon them.

Most backcountry airstrips are located on national forests or BLM land. According to Mestre in *ACRP Synthesis 9: Effects of Aircraft Noise: Research Update on Selected Topics* (2008), there has been significant research on overflights of national parks conducted by the National Park Service and FAA. This research suggests that aircraft overflights can annoy visitors and decrease enjoyment in the national parks; however, most of the research was conducted at parks where significant sightseeing overflights occur. The difference between national parks, where significant aerial sightseeing tours occur, and BLM or national forest areas, where most backcountry airstrips have very few annual operations, is not well understood by the general public. One of the goals of the proposed RAF research project is to help land managers and the public better understand the real impacts of backcountry airstrips (J. McKenna, personal communication, July 2013).

U.S. FOREST SERVICE PLANNING DIRECTIVES OMISSIONS

In February 2013, the Forest Service proposed the Land Management Planning Handbook, containing the Planning Rule Proposed Directory (PRPD) and aimed at providing land management guidelines. Several survey participants suggested that backcountry airstrips be specifically listed in the PRPD (http://www.fs.usda.gov/goto/planningrule/directives). The RAF and other organizations have made numerous comments about the PRPD documenting their suggested approach to airstrip management within the forests. The RAF met at USFS headquarters to discuss this issue in late October 2013

(McKenna 2013). This is an example of pilot associations maintaining an open dialogue with agencies to help all sides better understand each group's perspective.

Survey participants also pointed out that while the PRPD did not include backcountry airstrips, airstrips and recreational uses that include aviation are mentioned in guidance from Congress, former USFS officials, and in the guidance planning rules. Airstrip advocates believe that specifically including airstrips in the PRPD will help guide future generations of USFS personnel on aviation and airstrips issues.

LIABILITY AND RISK MANAGEMENT

Liability, or risk management and risk mitigation, has been a growing issue for both public land managers and private landowners. Risk management has been approached in many ways, from new or modified regulations and increased insurance requirements, to the limiting or forbidding of certain access or activities altogether. However, a review of history and jurisprudence indicates that any risk to land managers associated with recreational airstrips is minimal and does not support the exclusion of aviation as a means of access to these lands for recreational purposes (Spencer 2011). Grapevine Airstrip in Arizona is an example of an airstrip that has been re-opened on a conditional basis after individual pilots and pilot organizations worked with USFS land administrators on threat of risk and other issues to this backcountry airstrip.

Grapevine Airstrip, Restricted Airstrip Fly-in and Code of Conduct, Tonto National Forest, Arizona

The Grapevine Airstrip is a 3,800' × 40' paved airstrip located adjacent to the Theodore Roosevelt Lake reservoir near Phoenix, Arizona, and is administered by the Tonto National Forest (Figure 3). Theodore Roosevelt Lake adjoins a wildlife area and is posted to permit hunting at certain times of the year. The airstrip also provides access to the largest lake in central Arizona.

Grapevine is still listed as closed on aeronautical sectionals and is not listed in AirNav or other airport or airstrip databases. However, it is open to the public on a restricted basis the third weekend (Friday–Sunday) of each month. The RAF and APA have negotiated approval for these weekends and for group fly-in picnic and camping events. The APA has published an Aviator's Code of Conduct which pilots are expected to follow (reproduced in Appendix D). It reads, in part:

> Many hours of negotiations and work go into each backcountry airstrip and trust is earned through fulfilling our commitments to the land managers. A few rogue pilots can destroy this trust and set our backcountry efforts backwards for years. On the other hand, honoring these agreements can go a long way towards these efforts, and even opening new airstrips, so get to know the vision and rules for each airstrip (www.azpilots.org, 2013).

FIGURE 3 Grapevine Airstrip, Arizona (photo by Mark Spencer).

Recreational Use Statutes

Recreational use statutes (RUS) protect private landowners from liability when they allow the public to enter their land for recreational activities. RUS were analyzed by RAF in 2010, which found that all 50 states had RUS in place. However, only 16 states have incorporated aviation activities into these statutes, and another five states are in the process (http://www.recreationalaviationfoundation.org).

According to Spencer (2011), an analysis of the history, regulations, and jurisprudence indicates that any risk to the state or federal land manager associated with recreational airstrips is less than other activities currently permitted. Even prior to RUS, there were no examples of lawsuits found against public land managers of recreational airstrips involving federal land relevant to this subject. This is because, in part, FAA regulations that place final decision authority on the pilot in command required ongoing pilot training, testing, and aircraft inspections. RUS provide an additional protection against liability. Given these facts and the potential cost of unintended consequences, including the loss of aviation assets, a measured approach commensurate with the actual risk of the use of certain recreational airstrips appears reasonable.

According to survey participants, aircraft liability insurance is a factor to be considered as part of airstrip risk management. Many aircraft liability insurers are now looking more closely at coverage for flying into backcountry airstrips. One requirement that has emerged is for airstrips to be listed on a sectional chart. To be included on aeronautical charts, the airstrip proponent, including the owner, will need to file a Notice of Landing Area Proposal, FAA Form 7480-1, to activate any runway or aircraft landing area and/or to change from private to public use.

OTHER THREATS TO BACKCOUNTRY AIRSTRIPS

Inadequate Maintenance Funding

Another threat facing backcountry airstrips is the lack of adequate funding to perform necessary maintenance activities. Presently, much of the funding available to conduct backcountry airstrip maintenance comes from pilot and aviation associations through in-kind labor, donated supplies, and cash donations (survey responses from Idaho Division of Aeronautics; Larry Taylor, Oregon Department of Aviation; Mark Spencer, Steve Durtschi, John McKenna, and the Montana Division of Aeronautics).

Survey participants from aviation associations and the USFS discussed that while there are budget line items for maintenance functions associated with facilities, trails, roads, etc., there is no specific budget for airstrip maintenance, which often makes it difficult to find funding. The following example is from the 2014 USFS Budget (http://www.fs.fed.us/aboutus/budget/2014/):

Capital Improvement & Maintenance	
Facilities (Primarily Buildings)	$75,664
Roads	$182,525
Trails	$81,851
Deferred Maintenance and Infrastructure Improvement	$9,121
Legacy Roads and Trails	$44,928
Supplemental, Disaster Relief Appropriations Act, 2013 (P.L.113-2)	$4,400

State aviation agencies provide limited funding to backcountry airstrips for which they are responsible. Some of these state-operated airports are owned by federal agencies. However, the practice of states owning and operating airports and airstrips is coming under closer scrutiny by auditors and state budget writers. Oregon has examined the appropriateness of the state owning and operating airports and airstrips in the past and revisited the issue again in the summer of 2013 in the context of other aviation safety programs. One suggested solution is to turn over the operation and maintenance of the backcountry airstrips to a pilot organization (survey: Oregon Department of Aviation and Idaho Division of Aeronautics).

Inappropriate Flight Training at Sensitive Backcountry Airstrips

Seminars and group discussions at backcountry fly-ins and pilot gatherings are used by state aviation officials and pilot associations to discuss the sensitive and unique character of many backcountry airstrips. Airstrips that access wilderness areas are emphasized as a resource that is to be used as gateways to non-motorized activities, not for flight training. Several survey participants, including Amy Hoover, a backcountry flight instructor and founding member of McCall Mountain/Canyon Flying Seminars, discussed the need for a respectful or "tread lightly" approach to backcountry flight training. Other respondents referred to accidents that had occurred at backcountry airstrips during training activities.

> "I love sharing the wonder of the area with other pilots, but we need to realize that a certain responsibility must accompany the privileges we enjoy when flying the backcountry. Those responsibilities should include safe and courteous operations." (Hoover 2013)

Many pilots and flight instructors have found less developed airports and airstrips near their home bases well-suited to training in conditions similar to backcountry airstrips. These airstrips tend to be closer to their base airport, and have less concern from the impact of flight training. Some pilots suggested developing training airstrips not located in backcountry areas. Survey respondents from Alaska reported that the state has taken up the concept of protecting backcountry airstrips during training by constructing a training strip near Fairbanks specifically dedicated to giving pilots a place to become familiar with some of the challenges of backcountry airstrip takeoffs and landings. Although Fairbanks is distant from many other airports in Alaska, it provides a good example of how to decrease the flying footprint while increasing pilot training opportunities.

"Bagging" and Other Inappropriate Uses of Sensitive Backcountry Airstrips

There is a general agreement that training at a specific airstrip for the purpose of learning about how to land and takeoff at backcountry airstrips is acceptable. What is not acceptable, in pilots' opinion, is using backcountry airstrip training as an excuse to "bag" airstrips.

Bagging a backcountry airstrip is the practice of flying to an airstrip for no other reason than for the pilot to boast of having flown there, and is widely considered disrespectful of the backcountry and the values that backcountry engenders. In addition, some backcountry airstrips limit the number of annual operations, with the understanding is that the airstrips are to be used as portals to the backcountry. Bagging, especially of airstrips that are sensitive or in wilderness areas, was listed as a threat to backcountry airstrips by the majority of survey participants.

This is a topic that state aviation officials and pilot organizations often raise at group fly-ins. Discussions include how to be a responsible user of backcountry airstrips, and that self-regulation will head off unwanted rules and potential airstrip restrictions. Pilots are expected to practice no-trace use, leaving little or no mark of their visit (survey: Taylor and Montana Division of Aeronautics). Many backcountry flight instructors, including Ms. Hoover, screen their students to assure they are training for a need to go to a specific airstrip and not using their training as an excuse to bag a sensitive wilderness airstrip. The Arizona Pilot Code of Conduct, reproduced in Appendix D, is an example of useful information for pilots to follow.

It was also noted by survey participants that some videos posted to the Internet can be used by those opposed to use of backcountry airstrips to create evidence of abuse. Videos of flights into wilderness airstrips such as "the Big Creek Four" in Idaho and Mexican Mountain, Utah, have been brought up by USFS and BLM personnel when discussing these airstrips (Taylor, Durtschi) (see Figure 4). Some of the videos are instructional, demonstrating a normal approach and landing into a backcountry airstrip; and can be a useful reference for other pilots. However, many of the posted videos show off

FIGURE 4 Mineral Canyon, Utah (photo by Steve Durtschi).

dangerous and sometimes illegal flying activities. These types of videos can be used by those with a dislike of airstrips in the first place and provide them evidence of why airstrips should be shut down.

Threat from Excessive Flying Expeditions to the Backcountry

Organized events are sometimes staged to bring numerous pilots to backcountry airstrips. Although this can be a good and safe way to introduce pilots to backcountry flying, it can also lead to some pilots organizing side trips as bagging expeditions. These large fly-in events may also attract pilots who have not maintained their flying skills, and while they might safely arrive at the event airstrip, they are often lured into flying to airstrips beyond the capability of their aircraft or their present flying abilities (survey: Idaho Division of Aeronautics and Montana Division of Aeronautics).

Mexican Mountain airstrip, Utah, is located in the Mexican Mountain WSA. Survey participants cite this as an airstrip that is treated with respect, and where “no-trace” camping and land use are practiced. Airstrips in wilderness areas are especially sensitive and should not be bagged; at the same time, most of the survey participants encouraged flying to these airstrips to camp, hike, and enjoy the resources they provide access to.

CHAPTER FOUR

CURRENT AND POTENTIAL SOLUTIONS FOR BACKCOUNTRY AIRSTRIP PRESERVATION

Flying into backcountry airstrips provides contact with the ground for only a fraction of the total travel time, and in most cases, airplanes only land in order for pilots/passengers to engage in some other non-motorized activity such as hiking, fishing, or hunting, or as the put-in and take-out point for rafting trips (survey: Scott, Taylor, Spencer). As a transportation mode, aircraft provide perhaps the lightest footprint of any method of access to these lands (Spencer 2011).

EXAMPLES OF MANAGEMENT AND PRESERVATION SUCCESS

Survey respondents supplied the following examples of backcountry airstrips that have faced challenging situations and even closure (Table 3). Though the airstrips have unique histories, each has a common element—that the management and preservation of each facility resulted in the successful continuation of its operation.

Reed Ranch (Idaho), Airstrip Management Plan—A USFS, State, and Volunteer Organization Collaboration

This property in the Payette National Forest was privately owned but traded to the Forest Service in exchange for lands to expand a ski area. The USFS stated that the Reed Ranch airstrip was seldom used and it initially wanted to close the airstrip and "turn it under," or demolish the facility (Figure 5). The primary documented use of this airstrip was for backcountry pilots to land when weather would not allow them to proceed to the McCall or Cascade airports. Because the airstrip was privately owned, pilots felt they should not use it.

The Idaho Transportation Department Division of Aeronautics and the Idaho Aviation Association (IAA) coordinated with USFS to develop a management plan to allow the state to take over administration and maintenance of the airstrip. After a few years of closure, the USFS, the IAA, and the Division of Aeronautics reopened Reed Ranch with an inaugural day fly-in and ribbon-cutting (Holm 2012). This is an example of a state agency and a volunteer organization collaborating with the Forest Service to preserve a backcountry airstrip.

Wilson Bar (Idaho) Airstrip—Educating Land Managers, Land Use Advocates, and Pilots

Located in the Nez Perce National Forest, Wilson Bar was a private homestead with an airstrip that was seldom used. The USFS acquired the property, and in 1992 placed a closure notice on the airstrip stating that it was adverse to wilderness, had little record of use, and was beyond repair. After much controversy regarding maintenance performed without the Forest Service's permission, Partners Afloat, a nongovernmental agency, coordinated a meeting among multiple interested parties to facilitate discussion as to why the airstrip should remain closed. After a demonstration showing that an aircraft could safely land and take off at the remote airstrip, and much debate, the USFS re-opened the airstrip in 1995 (Holm 2012).

This is an example of aviators convincing land managers that airstrips are not as intrusive as believed, and that pilots and pilot organizations can co-exist with backcountry airstrip opponents.

TABLE 3
SURVEY LIST OF BACKCOUNTRY AIRSTRIP SUCCESSES

Airstrip	Location
Wilson Bar	Idaho
Lower Loon	Idaho
Reed Ranch	Idaho
Ryan Field	Montana
Dug Bar	Oregon
Cabin Creek	Idaho
Russian Flat	Montana
Cause Creek	Idaho
Mexican Mountain	Utah
Double Circle	Arizona
Grapevine	Arizona
Minam Lodge	Oregon
Red's Horse Ranch	Oregon
Rogersberg	Washington
Missouri Breaks WSA (six airstrips)	Montana
North Fox Island	Upper Peninsula, Michigan
Blackwater Airstrip	Florida
Chicken Strip	Death Valley California

Russian Flat (Montana)—Partnerships and Volunteer Development Using No Public Funds

According to the website of the Recreational Aviation Foundation:

> Russian Flat is the newest public airstrip in the 48 contiguous United States. The airstrip is the result of a partnership between the Recreational Aviation Foundation, the Montana Pilots Association, and the Lewis and Clark National Forest. The Montana Pilots Association provided all the volunteer labor for the airstrip construction and the Recreational Aviation Foundation provided the funding for the airstrip. Century Companies of Lewiston, MT, provided donated labor and equipment for the airstrip construction.
>
> The airstrip came about because pilots were invited to participate in the travel planning process for the Lewis and Clark National Forest. The travel planning process started in 2003 and the travel plan with an approved airstrip was put into effect in 2007. The construction was started in 2008 and the airstrip was opened to the public on August 20, 2010, after countless hours of meetings and construction.
>
> The result of all this work is the first new airstrip on U.S. Forest Service land in 45 to 50 years (http://theraf.org/russian-flat-airstrip).

Russian Flat airstrip, designated M42, has one 3,000 by 65 ft turf runway. It is listed on the VFR Sectional charts. Improvements include airplane parking facilities, a portable fire ring, and vault toilet, making the airstrip suitable for picnicking or camping.

FIGURE 5 Reed Ranch, Idaho, Ribbon Cutting (photo by Larry Taylor).

This is an example of pilot organizations and a state aeronautics division collaborating with the USFS to build a new airstrip on USFS land using no government funding.

Mexican Mountain Airstrip (Utah)—Environmental Assessment Documentation for Maintenance of an Airstrip Located Within a Wilderness Study Area

The Mexican Mountain backcountry airstrip in the BLM Green River District, Emery County, Utah, was constructed in 1975 by Wainoco, Inc. (now Frontier Oil), to provide access for drilling a test well 4,060 ft deep, but it failed to produce any petroleum. Since that time, backcountry recreational pilots have used the airstrip to access the unique areas in remote Utah. The original length of the airstrip was approximately 2,000 ft; vegetation overgrowth has reduced the useable length of the airstrip to approximately 1,550 ft (BLM, Mexican Mountain Airstrip Maintenance 2013).

The Mexican Mountain landing strip is considered by pilots to be a "national treasure," located in a deep canyon, surrounded by towering red rocks, and inaccessible by off-road vehicles. The historic hiking destinations accessible from the landing strip, such as Horse Thief Pass and Swayze's Leap, offer visitors an unforgettable experience. "Only a small handful of landing strips in the west have this combination of beautiful scenery, remote camping, and hiking" (www.utahbackcountrypilots.org, 2013).

The UBCPA has worked closely with the BLM to permit maintenance of the Mexican Mountain airstrip, located in a WSA (Figure 6). Under the terms of the Federal Land Policy and Management Act of 1976 (FLPMA), which among other things created wilderness study areas, airstrips are allowed to continue their original use. The UBCPA association made a formal request to the BLM to conduct maintenance activities on the airstrip using non-mechanized equipment such as shovels, hoes, pulaskis, and crosscut saws. The management plan is modeled after the Cabin Creek USFS airstrip plan in the Idaho wilderness (described in detail in chapter five).

The BLM determined that it would be necessary to perform an environmental assessment (EA) in order to permit the maintenance of the Mexican Mountain airstrip. (The requirement to conduct an EA in order to perform routine maintenance for an allowed use seems extraordinary to many pilots and representatives of nongovernmental organizations that use and maintain backcountry airstrips.) It is the hope of the UBCPA, IAA, the RAF, and other backcountry airstrip advocates that the creation of individual airstrip management plans, such as the plan created for Cabin Creek airstrip, will be adopted as the basis for standardizing the use and maintenance of individual airstrips; and a single EA can be conducted for all maintenance of a similar type.

The preferred alternative identified in the EA for Mexican Mountain is the proposal by the UBCPA to perform maintenance on the Mexican Mountain backcountry airstrip using the minimum tool requirement. The proposal detailed how the UBCPA would hire Trail Ace Construction, Inc., to repair and clean up the airstrip with a horse drawn "trail ace" and "trail scoop." The maintenance crew would access

FIGURE 6 Mexican Mountain airstrip (UT photo by Steve Durtschi).

the airstrip from the existing two-track road into the Mexican Mountain WSA. Important safety issues addressed in the proposal included the threat posed to other aircraft after planes land in wet weather conditions and leave ruts in the airstrip surface; and the threat caused by encroaching vegetation.

The repair and cleanup of the airstrip would return it to its original length and width by removing the undesired vegetation and repairing the ruts. The airstrip would be closed for the duration of the work, which is anticipated to be seven to 10 days. Maintenance equipment would be transported to and from the airstrip by horses, leaving no scars on the trail to the site. The entire maintenance project would be monitored by a member of the UBCPA and a BLM employee. It is possible that approximately 1.6 acres of the site might be disturbed; however, the impact is expected to be less, as the entire airstrip does not require maintenance (BLM, *Mexican Mountain Airstrip EA* 2013).

Mexican Mountain is a complex example of backcountry airstrip preservation. Adopting a uniform management plan will also create a way forward for future airstrip preservation.

LEGISLATIVE SUPPORT FOR BACKCOUNTRY AIRSTRIPS

The survey asked for legislative suggestions at the state and federal levels. In addition to Recreational Use Statutes (RUS) discussed in chapter three, survey participants mentioned the following legislation:

Many backcountry airstrips are located on federal land and several are located in wilderness areas. The Wilderness Act of 1964, Public Law 88-577, Under Prohibition of Certain Uses (c), states that, aside from emergency response and essential maintenance, "there shall be . . . no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport." However, under paragraph (d), Special Provisions (1), "Within wilderness areas designated by this Act, the use of aircraft or motorboats, where these uses have already become established, may be permitted to continue subject to such restriction as the Secretary of Agriculture deems desirable." Forests had differing policies on keeping airstrips open, or closing them. Senator Frank Church of Idaho, who co-sponsored the act, advocated protecting more wilderness in Idaho. It became apparent that to create more federally recognized wilderness, more backcountry airstrips within the wilderness areas would have to be protected (Holm 2012, pp. 18–19).

The Central Idaho Wilderness Act of 1980 provided that aircraft landing strips in regular use within the wilderness at the time the law was passed could not be closed except for extreme danger to aircraft. In addition, the state's aeronautics authority would have to consent in writing to this closure. Land managers have tried to close backcountry airstrips citing danger to aircraft, or have attempted to restrict their use to emergency actions. Pilot associations and foundations, along with state agencies, have become involved to assure that steps are taken to preserve access to these backcountry airstrips.

The 1976 Federal Land Policy and Management Act set standards for the creation of WSAs on public lands by Executive Order. Provisions are included in the FLPMA to allow the continued use of pre-existing land improvements such as backcountry airstrips. Backcountry airstrips in the Missouri Breaks (Montana) WSA and the Mexican Mountain WSA have remained open, in large part thanks to the role pilot associations and foundations have played an maintaining them.

During the budget appropriations for FY 2002, the Senate discussed letters from the heads of the Departments of Agriculture and the Interior, in which both Secretaries acknowledged the importance of backcountry airstrips and promised to work with state aviation and other appropriate officials to assure that these airstrips are not closed. In a letter to Idaho Senator Mike Crapo (as published in the *Congressional Record* on July 7, 2001), Secretary Gale Norton, then Secretary of the Department of Interior, stated:

> It is important to ensure that legitimate uses of backcountry airstrips are protected. It is also a priority for this Department that any proposals to alter use of federal lands must go through open and public process that includes close consultation with local communities. I commit to work with you, and other members of the congressional delegation, the State of Idaho, and local communities on any proposals to change the use of backcountry airstrips on lands managed by the U.S. Department of the Interior.

Legislative support from Congress has also come in the form of resolutions. One recent example of a resolution in support of backcountry airstrips is H.R. 1473, Supporting Recreational Aviation and Backcountry Airstrips, passed in June, 2010. This resolution ensures GA aircraft have access to federal land and the airspace over federal land. It also states that aircraft landing strips serve an essential safety role as emergency landing areas; support state economies by providing efficient access for visitors seeking recreational activities; and serve an essential role in search and rescue, forest and ecological management, research, wildlife management, firefighting, and disaster relief. The resolution calls on the government to not close airstrips without the written approval of state aviation agencies and to work with the states and pilot associations to cooperatively maintain airstrips (H.R. 1473 2010).

Legislation assists pilot associations and foundations in coordinating with state agencies to work with federal land managers to keep backcountry airstrips open and maintained. Following are some of the plans, polices, laws, and Executive Orders which USFS and BLM managers consider when dealing with backcountry airstrips (Mexican Mountain EA, Cabin Creek Airstrip Management Plan):

- Travel Management Plans
- National Environmental Policy Act (NEPA)
- Endangered Species Act
- National Historic Preservation Act
- Taylor Grazing Act
- Clean Air Act
- Noxious Weed Act
- Clean Water Act.

In addition to abiding by legislation, it is important for land managers and backcountry airstrip advocates to understand the unique value of these facilities and the variety of uses and benefits they provide to their users and the entire aviation network. Several commercial publications and state aviation websites are available which provide a comprehensive inventory of backcountry airstrips and their associated activities. Many of the websites also detail the uses of individual airstrips.

EXAMPLES OF VOLUNTEER BACKCOUNTRY AIRSTRIP PRESERVATION EFFORTS

One common factor in these airstrip preservation success examples is well-organized volunteer efforts. Considering the challenges backcountry airstrips face, their continued existence would not be possible without the contributions of volunteer groups with a vested interest in preserving these facilities. The following are a selection of well-organized volunteer efforts focused on backcountry airstrip preservation.

Idaho Airstrip Network (IAN)—Federal and State Agencies, Pilots Organizations, and Outfitters Join Together

The state of Idaho is known for its remote backcountry and airstrips located throughout its wilderness areas. The IAN is a group of airstrip owners from a variety of entities with an interest in aviation and preservation of these airstrips. Members include the U.S. Forest Service, BLM, Idaho Fish and Game, Idaho Division of Aeronautics, some private airstrip owners, and several nonprofit aviation groups including the IAA, IAF, the RAF of Idaho, Idaho Outfitters and Guides, and the Idaho Department of Commerce. This group is organized under a Memorandum of Understanding, reproduced in Appendix 5; and is managed by a steering committee and a part-time coordinator (Idaho Airstrip Network Action Plan 2005).

The IAN was created as a formal planning effort with inputs from the IAF and the Idaho Aeronautics Division. The plan produced a classification of 73 Idaho airstrips in five specific categories: Other, Wild, Primitive, Developed, and Community (Table 4). A description of and standard expectations for each category were included along with notes pertaining to airstrip ownership and location.

TABLE 4
IAN CLASSIFICATION NETWORK

IAN Airstrip Classification 4-16-13

Other	Wild	Primitive	Developed	Community
Airstrips with restrictions based on land owner/manager legal requirements. Not for general public use. These places have no facilities and require special skills and equipment beyond the normal anticipated for general aviation, and use is discouraged.	*Airstrips may have basic navigation aids such as windsock and runway markers and no user facilities. Typically located in the remotest settings away from roads and communities.*	*Airstrips have basic navigational aids such as windsocks and runway markers and some limited user facilities. Typically located in remote settings but may be accessed by low-standard road.*	*Airstrips have basic navigational aids and some additional services such as restrooms or camping facilities. May have road access to nearby attractions. Typically located in areas of high use, often in remote settings but may be accessed by improved roads.*	*Airstrips may have additional navigational aids and radio service and other services associated with proximity to communities or other attractions. Typically located near a community with access to full-service roads and close to some development.*
Dewey Moore*	Bernard*	Atlanta	Big Creek	Cavanaugh Bay
Mile Hi*	Big Bar	Antelope Valley	Bruce Meadows	Dixie Town**
Simonds*	Cayuse Creek	Bear Trap	Dixie FS	Elk City
Vines*	Dug Bar	Big So. Butte	Elk River**	Garden Valley
	Fish Lake*	Cabin Creek*	Flying B**	Idaho City
	Lower Loon	Cold Meadows*	Johnson Creek	New Meadows
	Mahoney*	Cox's Well	Krassel	Porthill
	Owyhee Reservoir	Deadwood	MacKay Bar**	Stanley
	Shearer*	Graham	Magee	Warren
	Soldier Bar*	Grasmere	Magic Reservoir	
	Wilson Bar*	Henry's Lake	Pine	
	45 Ranch	Hollow Top	Priest Lake	
	Chamberlain *	Indian Creek*	Reed Ranch	
	Copper Basin	Laidlaw Corrals	Slate Creek	
		Landmark	Smiley Creek	
		May	Smith's Prairie	
		Memaloose	Sulphur Creek**	
		Midway	Thomas Creek	
		Moose Creek*	Warm Springs	
		Murphy Hot Spgs.		
		Orogrande		
		Rogersburg		
		Root Ranch**		
		Seven Devils**		
		Twin Bridges		
		Upper Loon		
		Weatherby		
Maintenance *Minimal so as to not render "unserviceable."*	**Maintenance** *Clear vegetation, remove obstacles, treat noxious weeds and blade periodically to maintain useable airstrip surface.*	**Maintenance** *Clear vegetation, remove obstacles, treat noxious weeds, blade or mow regularly to maintain airstrip surface.*	**Maintenance** *Clear vegetation, remove obstacles, blade, mow, water, treat invasive and noxious weeds, and make spot improvements regularly to maintain improved airstrip surface.*	**Maintenance** *Clear vegetation, remove obstacles, blade, mow, fertilize, water, treat invasive and noxious weeds, and make spot treatments to maintain an improved airstrip surface.*

*Located in a Wilderness Area where ability to perform maintenance is limited. **Privately Owned

Although most of these airstrips are located in extremely remote areas, the true backcountry is defined as surrounded only by wilderness. Only 13 of the 73 listed airstrips are located inside a wilderness area per the plan (Idaho Transportation Department/IAN, Idaho Airstrip Access Network Classification 2013).

The IAN brings a diverse group of interests together to treat airstrips in a holistic manner, and is an example that may be applicable in other locations. It fosters a discussion among parties and a better understanding of backcountry airstrip issues in a manner that might provide a model for other regions looking to move forward with backcountry airstrip preservation.

State Pilot/Aviation Associations and Foundations

Most states have active and involved aviation associations and foundations, and, as previously discussed, it is these associations that take on a large role in the preservation and maintenance of backcountry airstrips. Pilot organizations in Montana, Washington, Idaho, Oregon, Utah, Arizona, New Mexico, Colorado, and Wyoming all have divisions dedicated to backcountry airstrips. In Idaho and Utah, there are independent foundations specifically devoted to the support of backcountry aviation. Pilot groups in Arizona and New Mexico team with the RAF in their preservation efforts.

The Oregon Department of Aviation promotes the Airport Information Reporting for Oregon (AIRO) program to support backcountry airstrips. This program allows volunteer pilot organizations to, upon signing a liability waiver, perform maintenance on the state's backcountry airstrips; in turn, the pilots are covered under the state's liability insurance policy. The state sometimes provides equipment or supplies to the volunteers to assist them with the maintenance activities (AIRO Volunteer Guide 2013).

An increase in interest in backcountry flying has resulted in a growth of membership in these pilot organizations. With increased membership comes the potential for increased revenue to support backcountry airstrips; greater membership also translates into increased influence with public policy makers.

Recreational Aviation Foundation (RAF)

The RAF is a leader in backcountry airstrip preservation, maintenance, and advocacy, working to ensure that airstrips are open to the public. The RAF is a Montana-based foundation that works on backcountry airstrip initiatives in conjunction with many state pilot organizations and foundations. The RAF has been a leader in developing a dialogue-based approach with public agencies to keep airstrips open and to re-open closed airstrips. The RAF has also joined with the BLM in a lawsuit to keep the Missouri Breaks airstrip in Montana open to pilots:

> In November of 2013, the RAF met with the USFS at [the agency's] headquarters in Washington, D.C. to discuss . . . the need for clear and concise policy on backcountry airstrips, funding, and maintenance. Work will begin on a Memo of Understanding (MOU) defining the mutual goals of both organizations. It was suggested that a working group (similar to the IAN) be formed and meet several times each year to discuss and arrive at solutions to ongoing challenges as they arise. The RAF also met with senior BLM officials in Washington and discussed the 'desire to have a formal MOU between the RAF and BLM.'

The BLM representatives reportedly said that agency policy is to treat airstrips like any other mode of transportation, and that the BLM was also interested in the idea of a working group meeting a couple times each year (http://theraf.org/ November 2013).

Aircraft Owners and Pilots Association (AOPA)

Traditionally, AOPA has focused on paved airports and operations between airports. The group has recognized that the use of backcountry airstrips by its members is an area of growing interest in non-turbine GA, and has increased its involvement in the preservation of these facilities.

AOPA has a full-time representative located in Alaska, where backcountry airstrips serve as staging areas for accessing more remote areas. The Alaska AOPA representative indicated that he works with the state and federal government and pilots to keep these "beyond" landing areas open for aircraft operations

Experimental Aircraft Association (EAA)

Many association members have aircraft that are suitable for backcountry flying, and the opportunities to use them are generating significant interest within the organization.

Idaho Aviation Association (IAA)

The IAA closely coordinates with, yet is separate from, the IAF. The IAA sponsors maintenance work parties and members volunteer as campground hosts to enhance safe operations at more than a dozen Idaho public airstrips. IAA members participate in letter-writing campaigns and deliver speeches and presentations to promote public awareness off the need to keep existing airstrips open and to re-open closed fields. Members also volunteer their time and aircraft to fly federal and state government representatives to airstrips to assess proposed closures (IAA 2013).

Wilderness Within Reach

IAF members also volunteer their time and aircraft to the Wilderness Within Reach, an IAF initiative to fly physically limited individuals to backcountry airstrips and wilderness activities that would otherwise be inaccessible to them. The pilots report great satisfaction in the experiences they are able to offer their passengers, and these adventures are often covered by the area newspapers, television, and radio. This is a positive outreach effort which demonstrates the value of backcountry airstrips (IAA 2013).

AIRSTRIP MAINTENANCE AND ENVIRONMENTAL REVIEW (NEPA) PROCESS

Backcountry airstrip maintenance on federal land is considered a federal action and is subject to the review processes required by the National Environmental Policy Act (NEPA) of 1969 and implementing regulations (40 CFR parts 1500-1589). The review process can be lengthy, requiring public review and input; having a plan that includes maintenance of backcountry airstrips once they have completed their NEPA review is one method to ensure upkeep. The Wilderness Airstrip Management Plan for the Cabin Creek Airstrip in the Payette National Forest, detailed in chapter five, is an example of approved airstrip maintenance in accordance with NEPA.

Another way to speed approvals for backcountry airstrip maintenance review through NEPA and categorical approval for minor recurring maintenance activities is for the land manager to promulgate a rule that defines minor maintenance on backcountry airstrips and specifies those activities have no significant environmental effect. This is a long-term effort, and advocacy organizations can support the federal land management determinations by providing data about the airstrip and surrounding environment, and providing statements during the required public comment period. The FAA Order 1050.1(e), section 303-311 provides descriptions of actions categorically excluded from NEPA review because they have been found to wreak no significant adverse effect on the environment. The USFS and other federal agencies have similar orders, regulations, and lists of categorical exclusions that are amended infrequently.

ENGAGEMENT WITH LAND MANAGERS AND NON-PILOTS

Pilots, aviation associations, and aviation foundations have actively engaged land managers and non-pilots on issues surrounding backcountry airstrips. Most of the survey participants reported engaging both government employees and non-pilots in a positive and respectful manner, whether directly, through joint organizations such as the Idaho Airstrip Network; visiting with elected officials on the

FIGURE 7 Idaho Aeronautics Division Meets at Smiley Creek Airstrip (photo provided by Idaho Aeronautic Division).

state and federal level; or leading by example, volunteering time and money to maintain and open backcountry airstrips.

STATE AVIATION AGENCIES THAT OPERATE AND MAINTAIN BACKCOUNTRY AIRSTRIPS

Several states have a network of airports, some of which belong to the USFS, BLM, or other state agencies, that they operate and maintain. The state of Idaho's management of airstrips though the IAN is described earlier (Figure 7); Oregon, whose volunteer initiatives are also described earlier, operates and maintains the McKenzie Bridge airstrip in the McKenzie Ranger District of the Willamette National Forest. Oregon also has assumed responsibility for the Santiam Y airstrip, which is located on Oregon Highway Department land; and the Lake Owyhee Airstrip, located in a remote section of eastern Oregon and accessible only by air or boat.

Washington and Montana also have responsibility for backcountry airstrips. While states are an important part of backcountry airstrip preservation, they oftentimes do not have the budget or personnel to expand their responsibility for airstrip preservation. Responsibility for filling this void has fallen largely to pilot organizations and foundations, who dedicate most of their efforts to working with agencies that own backcountry airstrips to keep them maintained and open to the flying public.

DOCUMENTATION OF BACKCOUNTRY AIRSTRIP EXISTENCE

Survey participants stated that it is important to document an airstrip's existence in order to support its preservation and provide maintenance, and in order for the FAA to accept NOTAMs about the airstrip. Documentation and recognition of an airstrip is also important to ensure the aircraft insurance is valid. One important way to document backcountry airstrips is through listing them on aviation sectional charts; however, there are numerous backcountry airstrips and landing areas that do not appear on sectionals charts and do not have an FAA identifier.

To establish a landing area, the proponent, individual, or organization, with the support of the airstrip owner, must fill out and submit a FAA Form 7480-1, Notice of Landing Area Proposal to the FAA. At the completion of the process, a FAA form 5010, Airport Master Record, will be generated. It may be in the best interest of the proponent to prepare airstrip maintenance and operations plan. After all FAA requirements are fulfilled, the form will be submitted and it will appear on future sectional charts, have an airfield identifier, and will be included in aircraft GPS data bases. Airports and airstrips, both public and private, that have been recognized through the FAA system appear on the VFR sectional charts. If they have an instrument approach, they will also appear on the FAA IFR charts.

FIGURE 8 Dug Bar Hell's Canyon, Oregon (photo by Larry Taylor).

Dug Bar Airstrip, located in Hell's Canyon, Oregon, is an airstrip that has not had the 7480-1 process initiated and therefore does not appear on aviation sectional maps (Figure 8). The airstrip is owned by the Wallowa–Whitman National Forest and appears in the Forest Service airstrip inventory, and is also listed in the IAN. "Dug Bar airstrip didn't have the 7480-1 filed to place it in a public use status after improvements were made a few years ago" (Idaho Aeronautics Survey).

BACKCOUNTRY AIRSTRIP REPOSITORIES

The survey asked for official and unofficial publications where backcountry airstrips can be located. Written records of airstrips are important to the overall concept of preserving backcountry airstrips. There are numerous guidebooks, websites, and databases that list backcountry airstrips either specifically as a category of airport, or in aggregation with other airports.

Federal Agency Inventories

The USFS has produced a listing of airstrips located in national forests; however, the list does not include private airstrips that are located inside national forest boundaries. Survey participants expressed concern that this could result in some airstrips not being included in the written record. It was suggested that an appended document be created by backcountry airstrip associations, coordinating with the USFS, that includes privately owned airstrips which are surrounded by or close to national forest land.

State Agency Inventory of Backcountry Airstrips

Many state aviation agencies, including those in Washington, Oregon, Idaho, and Montana, have publications that list backcountry airstrips. Because many are private or limited-use, not all backcountry airstrips listed on sectionals are included in these directories.

Aviation Association Airstrip Inventories

Many state aviation associations have created and maintained comprehensive databases for backcountry airstrips. The UBCPA, for instance, has an extensive listing available on its website (www.utahbackcountrypilots.org).

Privately Published Guidebooks

Perhaps the most frequency cited backcountry airstrip resources are the series of guidebooks written by Galen Hanselman. His books feature pilot guide and charts for the states of

TABLE 5
SELECTED BACKCOUNTRY AIRSTRIP DATA BASES

Backcountry Airstrip Reference	Description
Utah Backcountry Pilots Association http://www.utahbackcountrypilots.org/	UBCPA website has approximately 90 useable airstrips listed in this on-line data base.
Idaho Airstrip Network, http://idahoaviation.com/classification_matrix.pdf	The IAN lists 73 airstrips, including 15 wilderness airstrips.
Fly the Big Sky, Fly Utah, Fly Idaho	Hanselman's guidebooks provide detailed information on more than 70 airstrips in Montana, more than 80 in Utah, and 70 in Idaho
Arizona Pilots Association, http://azpilots.org/more-resources/backcountry-airstrips	Lists detailed information on four backcountry airstrips in Arizona.
Shortfield, http://www.shortfield.com/sfx/	Lists more than 100 airstrips in most of the lower 48 U.S. states.
Montana Pilot's Association http://www.montanapilots.org/airstrip_search.asp?menuID=	Lists more than 100 airports and airstrips throughout Montana.
Washington WSDOT Aviation Department (online directory) http://www.wsdot.wa.gov/aviation/AirportDirectory/	Lists airports in the state of Washington

Montana, Idaho, and Utah, as well as the Baja Peninsula (www.flyidaho.com, accessed September 22, 2013).

Table 5 provides a partial listing of backcountry airstrips in the contiguous 48 United States.

CHAPTER FIVE

SPECIAL CASES AND EMERGING ISSUES

ALASKA BACKCOUNTRY AIRSTRIPS

Backcountry airstrips in Alaska not only provide access for all of the functions that are common in the contiguous states (or the Lower 48, as Alaskans refer to them)—hunting, fishing, government use, and search and rescue—they also provide a stepping-off place for access to other areas frequented by bush pilots: gravel bars, ridge tops, or open tundra.

However, because of Alaska's size and topography, 82% of the state's communities are without road connections to the highway system. The survey participants from Alaska reiterated that many airports in rural Alaska serve communities that are quite remote, providing essential transportation for access to medical care; delivery of freight, mail, and fuel; emergency access for law enforcement and other agencies; student travel for scholastic and sports activities. etc. (Many cabins, lodges, and other recreation sites are accessible only by float plane because there is no airstrip or suitable landing area.) Although they may have fewer amenities than many of the backcountry airstrips in other states, the airports in Alaska's rural system serve a broader purpose for established communities. And, in a place the size of Alaska, with so many pilots and aircraft, they provide an important safety net for fliers who encounter bad weather or mechanical difficulties en route.

To some degree, Alaska backcountry airstrips are taken for granted because they are often the only way to access many areas of the state. However, as revealed in the survey, many backcountry airstrip advocates in Alaska are starting to believe that a proactive approach to preserving backcountry airstrips and aviation will be necessary to ensure that this resource is not limited or lost in the future.

BACKCOUNTRY AIRSTRIP SPECIAL CASES

Backcountry Airstrips in a Federally Designated Wilderness Area—Cabin Creek USFS Airstrip, Idaho

The information in this section came from the Cabin Creek Airstrip Management Plan, which was signed by the USFS Payette National Forest, Forest Aviation Officer and the Krassel District Ranger on March 20, 2012, and is included as Appendix B (USFS, Wilderness Airstrip Management Plan, Cabin Creek Airstrip, 2012).

The Cabin Creek management plan states that a bulldozer constructed the present airstrip in 1956, and that the USFS purchased the land in 1973, bringing the site into the Frank Church Wilderness area. "In 1988, the Forest Service requested FAA re-designation of the strip to provide for public use, from its previous private use status." The plan describes the physical characteristics of the airstrip, including the approximate geographic location, elevation, dimensions of the airstrip, aircraft operation instructions, months of use, and so forth. An airport diagram produced by the Idaho Division of Aeronautics is provided. The airstrip was designated as a public use facility by FAA; and according to Forest Service documents, "The seven (7) designated public use airstrips operated and maintained by the Forest Service will be managed for unrestricted public and commercial use until use levels and evaluations dictate a need to establish use limits."

After several years of managing the site as wilderness, the USFS began to eradicate structures and improvements, following established policies. In 1990, many of the buildings were burned to the ground (Holm 2012).

Multiple Forest Service disciplines, such as recreation, wildlife, fisheries, and fire utilize the Cabin Creek Airstrip in support of agency mission and goals. Private pilots and charter operators use the airstrip for wilderness access, camping, hiking, hunting, and fishing. Management agencies also make use of the airstrip to deliver personnel and supplies for research and administrative purposes. Two outfitters use Cabin Creek Airstrip for client and equipment movement in and out of the wilderness (Holm 2012).

A chart of Cabin Creek's annual operations shows only 200 operations in 1983, increasing to more than 800 annual operations in 1993. In 14 of the 31 years between 1981 and 2011, the airstrip reported no operations (operations are self-reported). A washout in 1996 closed the runway until it could be reconstructed using a mule-drawn grader and other non-mechanized construction methods. The Wilderness Watch intervened to stop the reconstruction, but only succeeded in delaying the airstrip's re-opening (Holm 2012) This accounts for three of the years with no recorded flying data.

According to the self-reported accounts, private use accounts for 54% of the operations at Cabin Creek Airstrip; 22% are charter operations, 19% are guide and outfitter operations, and 5% of the traffic is from USFS and other agency administrative and mail flights. AirNav, the airport information website, lists Cabin Creek as having 75 monthly operations as of September 22, 2011; 67% of those were air taxi operations and 33% transient GA operations. The FAA lists GA operations as about one-third less than the maximum number stipulated in the Cabin Creek Airstrip Management Plan (USFS 2012).

In addition to the normal operations restriction listings, the management plans states that "Cabin Creek Airstrip lies within the Frank Church River of No Return Wilderness. Users of the airstrip must practice appropriate Leave No Trace ethics at the airstrip and surrounding areas."

The section referring to the airstrip's maintenance needs is comprehensive, and lists maintenance activities, estimated costs, and an estimated maintenance budget. The management plan suggests an annual maintenance budget of $2,000, plus $10,000 every five to 10 years when a teamster is hired to level the entire surface. Inspections are conducted annually by Forest Service pilots and by Idaho Aeronautics Division.

The Cabin Creek Airstrip Wilderness Airstrip Management Plan has provided a standard that is used in the Frank Church Wilderness Area and backcountry and wilderness airstrips elsewhere.

Court-Ordered Documentation of Airstrip Existence and Use—Missouri Breaks, Montana

Even though the airstrips within the Missouri River Breaks National Monument have been in continuous use since the BLM management plan for the WSA was completed, they have faced numerous challenges and litigation. The RAF collaborated with the BLM to defend one particular lawsuit. The U.S. District Court previously held that the BLM struck an appropriate balance between protection and recreation for the monument. Upon appeal to the Ninth U.S. District Court of Appeals, it was found that the BLM's management plan was largely in accordance with NEPA and other federal law. However, the ruling partially reversed the lower court's decision, and ordered the BLM to conduct an intensive survey of roads, airstrips, and other travel routes in the area to identify historical and cultural sites at risk of damage. This action did not close the airstrips, but instead required the BLM to undertake this additional environmental analysis. The six airstrips within this defined area were in existence prior to the WSA declaration. With this court decision, the process for conducting airstrip inspections became much easier than the alternate requirement of inspecting miles and miles of backcountry roadways and byways. This court ruling was handed down in the summer of 2013, and the airstrips will remain open until the environmental analysis is completed (*Associated Press/Billings Gazette* 2013).

Use of a Backcountry Airstrip for Firefighting and Other Multiple Uses—Negrito Airstrip, New Mexico

This airstrip, located in the Gila National Forest, is unusual in its high elevation (8,153 ft) and its runway configuration; the longest runway is 7,500 ft, with a secondary runway of 4,000 ft. Because

FIGURE 9 On final approach, Negrito, New Mexico (photo by Mark Spencer).

of its altitude, pilots are advised to take off or land in the cool of the morning or evening to avoid density altitude issues. In spite of its elevation, Negrito is often used by the USFS for firefighting activities. AirNav notes that Negrito may be closed during periods of heavy fire traffic, and advises pilots to watch for low-flying aircraft and helicopter traffic in summer months. There is also a caution to watch for deer and cattle on the runway (AirNav.com 2013).

The New Mexico Pilots Association works with the Forest Service to ensure that access is maintained to this unique high country airstrip. Negrito is an example of a backcountry airstrip that serves multiple uses, including USFS access, access for cattle ranchers, and backcountry pilot recreational access (Figure 9).

CHAPTER SIX

CONCLUSIONS

Backcountry airstrips originated for the most part from the 1920s to 1950s, when the roadway system was not as developed as it is today and when small general aviation (GA) aircraft made remote areas more accessible. The U.S. Forest Service built airstrips for access to remote areas of the forest for administrative purposes and for firefighting. Ranchers built airstrips to backcountry lands for better access to their operations. Timber companies built airstrips to access their logging operations. Mining companies constructed airstrips for access to their mineral holdings. Commercial fishermen constructed airstrips to enable their catch to be flown to market.

Many of these ranch airstrips have been purchased by government agencies and are now located on federal land. Some airstrips were developed as hunting and fishing lodge retreats and are surrounded by wilderness or other backcountry federal lands. These airstrips are still used for wildland firefighting, resource management, emergency landing strips, and search and rescue, but their primary use has shifted to recreational access. Backcountry airstrips located at lodges and elsewhere act as portals for air charter operators to pick up and drop off people on hiking, fishing, hunting, and river trips.

Supplying backcountry cabins and lodges with food, building materials, and mail is another major business of backcountry charter operators. Many pilots have made a career out of flying mail and supplies to remote cabins, guest ranches, research facilities, and forest guard stations. In a few cases, they will even fly supplies into remote airstrips with ski-equipped aircraft, though weather becomes a crucial factor.

Backcountry airstrip preservation has been addressed by the Wilderness Act of 1964, the Federal Land Policy and Management Act of 1976, and the Central Idaho Wilderness Act of 1980. Wording in these acts "grandfathered in" the use of airstrips located within wilderness boundaries that were in existence at the time of enactment of the legislation.

Many individual states were leaders in backcountry airstrip preservation, early on accepting responsibility for airstrips owned by other state and federal agencies. However, with limited budgets and personnel, states have difficulty adding more backcountry airstrips to their inventory of airports and airstrips.

Hence, the burden of advocating for backcountry airstrip preservation has shifted to recreational pilot associations and foundations, who became involved when they recognized the need and saw that no one else was filling the gap. They have learned effective strategies for maintaining backcountry airstrips and keeping airstrips open when threatened with closure; and for establishing discussions with agencies and non-aviation groups to educate them about backcountry airstrips.

The U.S. Forest Service and Bureau of Land Management sometimes can reallocate maintenance funds from other budget line items for airstrip maintenance. In addition, pilot associations provide backcountry airstrips with donations of labor, materials, and cash. State aviation agencies, which have taken responsibility for some backcountry airstrips, also fund maintenance.

The following practices were reported to be effective in preserving backcountry airstrip; and any or all may assist in developing a strategy to preserve a particular airstrip:

- Pilot-based aviation organizations continue to serve as leaders in backcountry airstrip preservation.
- Advocates can use examples of airstrip preservation models.

- Pilot groups can assist public agency land managers in understanding and describing the value and uses of their backcountry airstrips.
- Airstrip management plans are becoming an accepted base document in maintaining and managing backcountry airstrips.
- State aviation agencies can play a major role in maintaining and preserving backcountry airstrips.
- Aviation associations have access to member resources (i.e., money and time) to maintain backcountry airstrips.
- Private airstrip owners are a ready resource for backcountry airstrip access.
- Maintenance and operation of backcountry airstrips sometimes is assumed by aviation associations.
- FAA Form 7480-1, Notice of Proposed Landing Area, is the form that land owners or backcountry airstrip managers use to be listed on aviation charts. (For backcountry pilots, aircraft insurance policies sometimes exclude coverage of events occurring on airstrips not designated on aviation charts.)
- A pilot "code of conduct" similar to the Arizona Pilots Association code can be an effective teaching tool.
- Communication between advocates and others leads to better understanding of all priorities and points of view.

Three central tendencies regarding backcountry airstrip preservation emerged during the synthesis:

1. *Pilots Codes of Conduct at Sensitive Airstrip Locations*

   Because many backcountry airstrips are located in sensitive areas, pilot associations, state aviation officials, and backcountry flight instructors have trained and provided information to pilots about leaving no trace and treading lightly.

   The practice of flying to sensitive, especially wilderness, areas just to "bag an airstrip," practicing landing and takeoff techniques at these sensitive airstrips, and crashes at airstrips were all identified through the survey as pilot concerns. Although some of the crashes are simple pilot error, others occur during operations that some believe should not have taken place on those locations, leading airstrip preservation advocates and opponents alike to raise issues of policies and terms of use.
2. *Cooperative Efforts*

   A recent development is how pilot groups and individuals working with resource agencies such as U.S. Forest Service and Bureau of Land Management can sometimes turn adversaries into champions for airstrips on their land. Pilots, pilot associations, and flying foundations have learned in recent years that opening a discussion with agencies and groups who may be inclined to oppose backcountry aviation, and educating them about how backcountry airstrips are used, can be effective in changing their perceptions.
3. *Increasing Enthusiasm and Advocacy by Pilot Organizations*

   Flying to backcountry airstrips is bringing pilots together and creating enthusiasm for GA flying. Many state pilot organizations report their numbers growing in this area. Backcountry airstrips located in New Mexico, Arizona, Utah, Colorado, Idaho, Montana, Oregon, Washington, Wyoming, and Alaska are at the heart of this synthesis report. But airstrips in more populated areas such as Florida and New England are also interesting because they promote GA flying, and even though they are in less rural areas, they offer a backcountry recreational airstrip experience.

Pilot associations and foundations have undertaken a leadership role in preserving backcountry airstrips. Further research suggested by interviewees includes a synthesis devoted to the role pilot foundations play and how they best function, as well as a synthesis of maintenance funding accounts that could be used to preserve backcountry airstrips.

ACRONYMS

AirNav	Airport information website—http://www.airnav.com/airports/
AOPA	Aircraft Owners and Pilots Association
APA	Arizona Pilots Association
BLM	Bureau of Land Management
FBI	Federal Bureau of Investigation
FLPMA	Federal Land and Policy Management Act
USFS	United States Forest Service
GA	General aviation
IAA	Idaho Aviation Association
IAF	Idaho Aviation Foundation
IAN	Idaho Airstrip Network
OPA	Oregon Pilots Association
NOTAM	Notice to Airmen
RAF	Recreational Aviation Foundation
RUS	Recreational Use Statutes
SAR	Search and Rescue
UBCPA	Utah Backcountry Pilots Association
WSA	Wilderness Study Area

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APPENDIX A

SURVEY

AIRPORT COOPERATIVE RESEARCH PROGRAM
SYNTHESIS S13-03-08

BACKCOUNTRY AIRSTRIP PRESERVATION

SURVEY

The results of this survey will help guide a synthesis for Backcountry Airstrip Preservation. All information reported will be aggregated to maintain confidentiality. Permission will be obtained if specific citations would be desirable to use in the context of the synthesis.

The questionnaire is sent to you in Word so that you may respond in writing, or you may participate in a telephone interview.

Please contact John Anderson, principal investigator for this synthesis at 208-323-2288, or e-mail janderson@to-engineers.com if you wish to participate.

Interview Questions

1. Do you agree with the following definition of Backcountry Airstrip and how would you change it?
   a. **Basic Definition:** Backcountry airstrips are generally grass, dirt, or gravel strips in remote locations with access limited to trails, boats, and/or primitive roads, and owned by a variety of public agencies and private parties.
   b. **Expanded Definition:** Backcountry airstrips range from challenging strips with little maintenance and requiring advanced piloting skills to more developed strips with regular maintenance, some amenities and good piloting skills.

What would you add to this definition of a Backcountry Airstrip?

2. Backcountry Users, Groups, and Uses:
   a. What Backcountry Aviation Groups stakeholder groups do you associate with?
      i. RAF
      ii. State Aviation Association
      iii. EAA
      iv. Other
   b. How do you or your organization use these Backcountry Airstrips?
      i. __ Recreational flying
      ii. __ Camping
      iii. __ Pilot training
      iv. __ Volunteer work on airstrips
      v. __ Access to backcountry activities
      vi. __ Private access
      vii. __ Firefighting
      viii. __ Search and rescue
      ix. __ Natural resource management
      x. __ Other_____.
      xi. Comments

3. What are the top 3 benefits of Backcountry Airstrips for you and your association?

4. What do you see as the top 3 primary threats to Backcountry Airstrips?

5. Do you know how your favorite airstrips are funded? Do you have ideas on how to provide better or a sustainable funding mechanism for Backcountry Airstrip Maintenance?

6. Do you have legislative suggestions at the state or federal level to assist in Backcountry Airstrip Preservation?

7. Do you have examples of Backcountry Airstrip preservation success?

8. Backcountry Airstrips are listed in a variety of official and unofficial publications. What are your recommended directories for Backcountry Airstrips and who keeps these directories current?

9. Do you know of reports and other materials on Backcountry Airstrips which might be interesting to Backcountry Airstrip advocates?

Thank you for your participation. You may e-mail this back to John Anderson at janderson@to-engineers.com, or call John at 208-323-2288

APPENDIX B

CABIN CREEK AIRSTRIP MANAGEMENT PLAN

A PDF FILE

Wilderness Airstrip Management Plan
Cabin Creek Airstrip (I08)
Payette National Forest

Introduction

This management plan is intended to provide a framework for management intent, desired conditions and opportunities at the Cabin Creek Airfield. It covers annual routine operations and maintenance needs for the airstrip. Any non-routine activities or emergency actions will be managed as needed and in the context of the Minimum Requirements Decision Guide – Airstrip Maintenance, for the Frank Church-River of No Return Wilderness (FCRNRW Plan, Standard E-6, pg 2-12; FEIS, Appendix).

Cabin Creek airstrip is classified "primitive" under the Idaho Airstrip Network classification matrix (May 2010).

Location

Cabin Creek airstrip, an FAA designated public use airstrip, is located near the junction of Cow and Cabin Creek within the Big Creek drainage of the Frank Church-River of No Return Wilderness in Central Idaho. It is administered by the Krassel Ranger District, Payette National Forest, Intermountain Region. The airstrip is located at Township 21N, Range 12E, Section 24, with a Latitude of 45° 08.61' and a Longitude 114° 55.74'. The FAA identifier is I08 and it lays at an elevation of 4,289 feet.

History of the Airstrip

The original Cabin Creek airstrip was located on the bench above the current airstrip location. In 1956 a bulldozer was walked overland, into site and the airstrip was relocated, improved and lengthened. This entailed re-routing and channelizing Cow Creek. The Forest Service purchased the ranch, which included the airstrip, in 1973 and has managed the site since that time. In 1988 the Forest Service requested FAA re designation of the strip to provide for public use, from its previous private use status.

- Consistent dimensions started around 1990.
- Runway 02/20 Surface = 1750' X 40'
- Average historic use for the past ten years is 571 landing per year, (with 389 estimated landings in 2011)
- A search of the National Transportation Safety Board's Accident Database identifies no known aviation accidents at the airstrip.

Characterization of past maintenance or projects:

- Raking, grading, and leveling with mules has occurred at Cabin Creek, but does not occur annually. This more intense work is usually reserved to address specific needs and situations or when funding is available and work is needed.

Water diversion structures (rubber belted strips) are replaced and maintained as needed on Cabin Creek airstrip in attempt to minimize and control surface erosion due to the surface gradient and lack of surface vegetation.

- A windsock is provided and maintained at the strip.
- Rebuilt entire airstrip with mule team due to blow out of Cow Creek - 1996 to 1998
- Rebuilt turn around and parking/tie down area with mule team- 1999
- Replaced water bars 2006

- Cabin Creek's proximity to other airstrips:
  - Lemhi CO (KSMN) 44nm to the E
  - McCall (KMYL) 52nm to the W
  - Soldier Bar (85U) 6nm to the W
  - Big Creek (U60) 17nm to the E

Objectives for Management of the Airstrip

1. R-1/R-4 Regional Aviation Plan Ch. 2.2 Aviation section C 3 & 4
2. Forests will develop and maintain an *Airstrip Management Plan* for each Forest owned and operated airstrip within their responsibility.
3. Forest owned and operated airstrips will be maintained in accordance with FSM 7730.
4. FSM 7735.22 #2
   - Develop minimum maintenance standards for airfields in the forest transportation system, and maintain them to at least those standards.

FCRNRW policy

- Maintain the airstrip to a safe operating standard but not enhanced over conditions typical at the time of the passage of the Central Idaho Wilderness Act and in compliance with the Frank Church-River of No Return Wilderness Management Plan.
- Cabin Creek Airstrip will be managed for unrestricted public and commercial use until use levels and evaluations dictate a need to establish use limits.
- Recognize the needs and values of multiple users while ensuring the overall goal of maintaining these facilities to a safe operational standard is accomplished.

Physical Description of the Airstrip (include all FAA inspection info)

- The airstrip is located within the Big Creek drainage, near the junction of Cow and Cabin Creek, approximately 9 nm west of the Middle Fork of the Salmon River.
- Elevation of the airstrip is 4289'
- Dimensions of runway 02/20 are 1750' X 40'

- Runway 02 is used for landings and runway 20 is used for take- off.
- Go-arounds are not possible due to high terrain at the end of runway 20.
- There is no winter maintenance. The airstrip may be snow covered in the winter months, and big game are common on and around the airstrip.
- The runway surface is grass turf/dirt in fair condition, but does contain rocks and occasional holes, and has a history of wind/prop caused erosion which adds to the deterioration of the surface, especially on the upper end where prop wash is most prevalent.

- Runway Dimensions / Information:

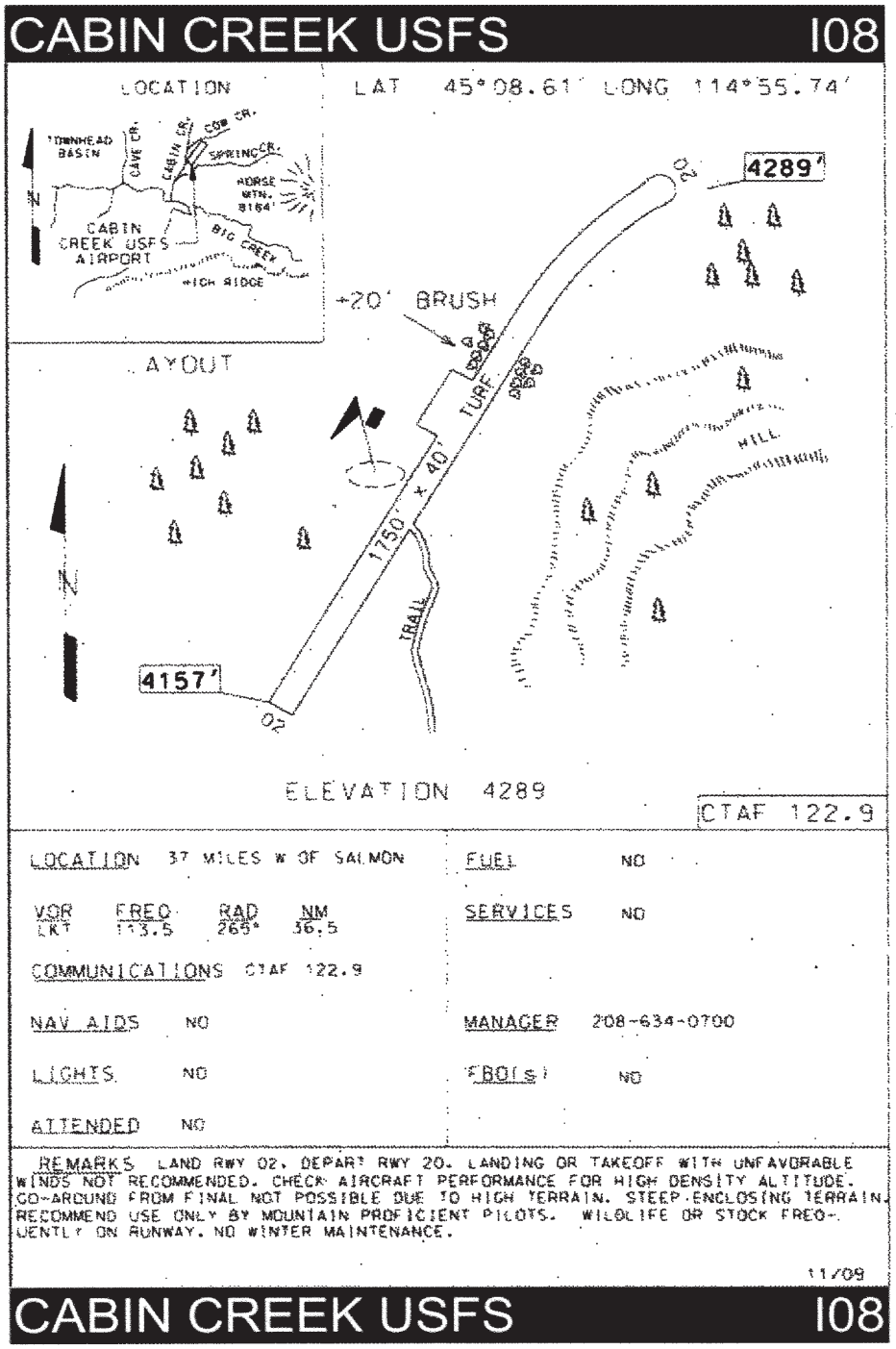
Runway 02/20			
Dimensions		1750' X 40'	
Surface		Turf/Dirt	
Alignment		northeast - southwest	
End Markers		White	
Side Markers		White	
Runway 02		**Runway 20**	
Traffic Pattern	Left	Traffic Pattern	Left

- Obstructions:

Runway 02: 65' tree, 280' from runway, 100' right of centerline
4:1 slope to clear
Runway 20: 300' hill, 400'from runway, 1:1 slope to clear

A 032	RWY 02/20 15' wide bare dirt strip down center of runway
A110-1	Land runway 02, take off runway 20, Go around not possible due to high terrain at end of RY 20
A110-2	No phone available at airport
A 110-3	Rubber water bar strips on runway
A 110-4	Big game animals and livestock on and around runway

Airstrip diagram produced by the Idaho Transportation Department –Division of Aeronautics



Airstrip Surface Improvements

- Tie-downs are not available in the aircraft parking area midfield on the northwest side of the runway.
- An aircraft turnaround point is located on the threshold of runway 20. This area is not intended for aircraft parking.
- A windsock and standard is located on the west side of the runway near the aircraft parking area.
- Rubber waterbars traverse the runway surface across much of the airstrip to reduce erosion

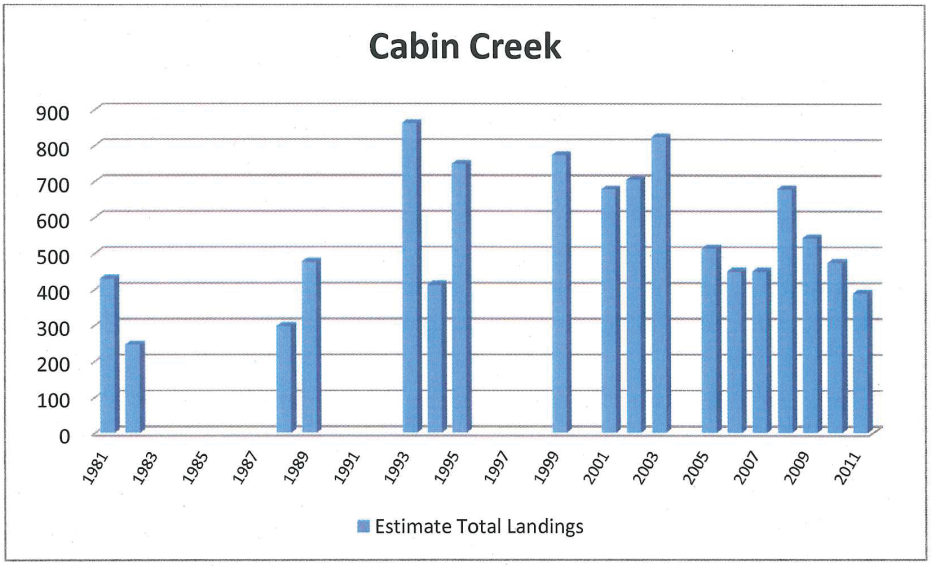
Airstrip Facilities

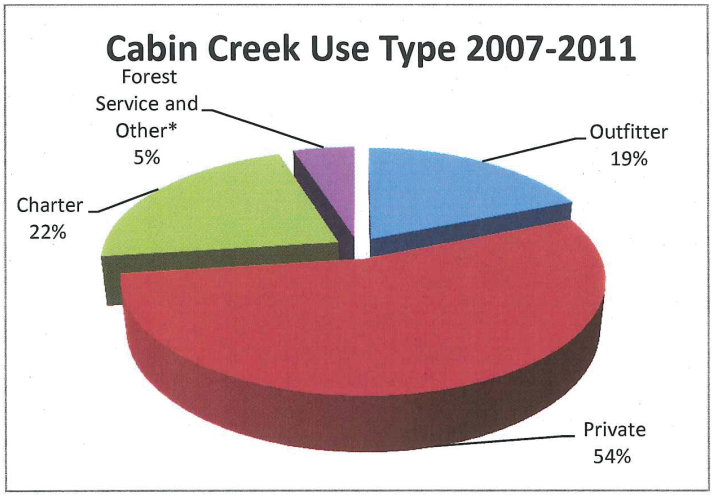
- There is a pit-style out house located near the airstrip.
- There is an information board and visitor sign in station located at the strip.

Use of the Airstrip

- The FAA designation is public ownership, public use.
- The Forest Service listing per FC-RONRW direction is: *"The seven (7) designated public use airstrips operated and maintained by the Forest Service will be managed for unrestricted public and commercial use until use levels and evaluations dictate a need to establish use limits."* (FC-RONRW Ch. 2-11)
- The IAN current classification is "Primitive." (IAN classification matrix 2010)
- General season of use is May through October
- The Forest Service utilizes the airstrip to move personnel and supplies into the backcountry to support a variety of agency activities.
- Private pilots use the airstrip for wilderness access, camping, hunting and fishing. Pilots must be experienced in backcountry flying and instruction on proper approach procedures is needed due to terrain making go-arounds impossible.
- The airstrip is utilized by a variety of aircraft makes and models. Due to the density altitude experienced at Cabin Creek during summer months, higher performance aircraft are required. Aircraft ranging in size from small single engine to high performance twins like the Islander and Twin Otter have used the airstrip occasionally in the past.
- Commercial use of the airstrip occurs to deliver people and supplies for hunting, fishing, camping, research, state and federal agency administration and hiking trips.
- Two outfitter operations use Cabin Creek for client and equipment movement in and out of the wilderness.
- Trail 044 runs parallel and along the airstrip.

Comparison with past years based on estimate of total landings for a sample season:





* Other agency administrative and mail flights

Restrictions and Requirements for Use of the Airstrip

- Generally open from May – October, depending on snow.
  - Use at own risk – High density altitudes during summer months
  - Recommended for use by mountain proficient pilots using high-performance aircraft.
  - While a relatively small amount of twin engine aircraft has used this site, primarily Agency aircraft in support of recent large fire events, the airstrip is maintained for the type of light, generally single engine, aircraft use that was occurring at the time of acquisition and designation as public use (1988) per guidance of the Wilderness Plan.
  - Runway has potential surface water present in the spring.
  - Rising terrain north of the airstrip make go-arounds impossible.
  - Multiple airstrips are located within the Big Creek drainage. Standard backcountry announcement procedures on 122.900MHz should be employed.
  - Big game animals on and in the vicinity of airstrip.
  - No winter maintenance.

- Cabin Creek Airstrip lies within the Frank Church River of No Return Wilderness. Users of the airstrip must practice appropriate Leave No Trace ethics at the airstrip and surrounding areas.

General Operating Procedures for Landing, Take-off, and Parking

- Announce intentions on 122.900
- Watch for other traffic; the Big Creek drainage receives a significant amount of of up and down canyon air traffic throughout the field season.
- Remember, the airstrip has a history of water running across the runway in the spring and may be unusable until conditions change.
- Park aircraft in approved areas and utilize turn around areas appropriately.
- Be aware of closures communicated through NOTAM's and/or by use of yellow X's placed on both ends of the runway.

Wilderness Education/Visitor Contact

- When the Cabin Creek Administration Site is staffed, Forest Service employees perform visitor contacts and conduct use surveys. This occurs in the spring, summer and fall.
- Information boards are also available at the airstrip for sharing information and education materials.

Law Enforcement/Search Rescue/Life Flight

- There are no routine or scheduled federal Law Enforcement activities planned involving the use of Cabin Creek Airstrip.
- Search and rescue (SAR) or life-flight activities would follow standard communication protocols on 122.9 during airstrip use.
- If agency aircraft are missing or known to have had an accident, Payette Dispatch is to be notified of the incident immediately and will coordinate the rescue/search according to the Interagency Aviation Mishap Response Guide and Checklist.
- If non-agency aircraft are involved in an accident or missing in the vicinity of the airstrip, Payette Dispatch can be notified and they will contact the Idaho Division of Aeronautics and/or the Idaho County Sheriff's Department who will then coordinate the response.

Support to Other Forest Service Programs

- Multiple Forest Service disciplines, such as recreation, wildlife, fisheries and fire utilize the Cabin Creek Airstrip in support of agency's mission and goals.

Maintenance Needs for the Airstrip

Maintenance is dependent on the availability of funding and need. Work conducted will be appropriate with the minimum necessary needs for the administration of the area. All maintenance will be conducted by non-motorized/non-mechanized means unless authorized by the Regional Forester and supported by a Minimum Requirements Decision Guide recommendation of the District Ranger and Forest Supervisor. The matrix below defines what items will be addressed at Cabin Creek Airstrip. The Management Plan will be updated as needed to provide the level of maintenance required to meet the plans objectives.

Recent Cabin Creek Airstrip inspections have identified following items:

- There is potential for brush encroachment on both sides of the airstrip northeast of the aircraft parking area. This needs to be monitored and action taken to retain adequate clearance for the light aircraft operating on this strip. Operational objectives will be to clear brush to a width of approximately 75' to facilitate safe operations of small, single engine aircraft.
- The airstrip surface could use leveling (filling in major holes and removing larger rocks which have worked their way to the surface of the airstrip). Maintain a slight crown would be desirable but is difficult.
- Maintaining a vegetative cover on the Cabin Creek landing surface is virtually impossible due to the dry conditions and high use levels. Prop wash on the upper 1/3 to ½ of the airstrip blows off the surface fines and impacts surface smoothness, especially with twin engine or larger aircraft.

NOTE: If maintenance activities could affect aviation operations are scheduled to occur, the Forest Aviation Officer (FAO) or Dispatch must be notified in advance so a NOTAM can be issued.

Action Area	Specific Need or Location	Type of Action (standard)	Action Frequency , How often completed	Time of Year	Quantity, Amount, or Area Treated	Estimated Cost (for reference only, costs may change)
Mowing			Not mowed			N/A
Leveling	a. Entire airstrip as needed	Maintain a rut free level surface	As needed Estimate every 5-10 years.	As needed	Airstrip surface is approx. 12 acres	Wilderness: $10,000 per event (contract)
	b. Spot leveling ruts and holes	Fill holes and level ruts when aircraft safety is compromised	3-4 times per season	As needed	Entire airstrip	$600 per season, 1 person day per month
Seeding	Bare areas	Seed bare areas with native seed as needed to prevent erosion	As needed	Fall	As needed. Use 2 lbs seed per 100 sq ft:	$150 per airstrip
Drainage	a. Clear & maintain water bars	Keep water bars clear for free flow of water	Check for obstructio ns annually maintain as needed	Pre-season	As needed, typically annually and after storm events	NO CULVERTS
Painting	a. Windsock pole	Keep windsock pole paint in good condition	Every 3-5 years as needed	As needed	One pole	$250 per pole
	b. Runway markers					N/A No Action

Action Area	Specific Need or Location	Type of Action (standard)	Action Frequency, How often completed	Time of Year	Quantity, Amount, or Area Treated	Estimated Cost (for reference only, costs may change)
Vegetation Control	a. Clear vertical approaches	Remove vegetation that intrudes on approach glide slope, consistent with standard at time of acquisition	as needed, typically once every 5 years	Pre-season	Maintain an appropriate glide slope from runway end markers, which provides for safe operations (terrain permitting)	$100 per event when combined w/ scheduled maint., Costs can be significantly more not routinely maintained.
	c. Clear sides of runways	Remove vegetation that intrudes on side clearing	typically once every 5 years	Pre-season	Maintain appropriate side clearance which provides for safe operations, typically not more than 75' wide	$100 per event when combined w/ scheduled maint., Costs can be significantly more not routinely maintained.
	d. Clear encroaching vegetation on runways	Remove vegetation that encroaches on runway dimensions	Annually as needed	Pre-season	Remove any woody vegetation within runway dimensions;	$200 per event when combined with scheduled maint.
Clearing obstructions	Remove obstructions (fallen logs, rolled rocks)	Remove obstructions from runway surface	Annually, as needed	Pre-season and as needed	Entire airstrip	$100 per event when combined with scheduled maint.
Rock removal	Remove rocks	Remove rocks of size that pose hazard	Annually, as needed	Pre-season and as needed	Entire airstrip	$100 per event when combined with scheduled maint.

Action Area	Specific Need or Location	Type of Action (standard)	Action Frequency How often completed	Time of Year	Quantity, Amount, or Area Treated	Estimated Cost (for reference only, costs may change)
Navigation Marker Maintenance	a. Maintain windsock	Ensure windsock turn freely and are in fair or better condition	as needed; typically replace every 2-3 years	Pre-season	Typically, 1 windsock per airstrip	$50 annually, $250 per replacement of windsock standard (frame)

Weed Control	Control invasion and spread of noxious weeds	Remove noxious weeds, thru hand pulling or spraying	Annually, as needed	Spring, prior to seed set.	Entire airstrip	$700
Rodent Conrol	Control rodents impacts	Smooth and fill rodent mounds & burrows	throughout the season	As needed – several times during season	Entire Airstrip	N/A
Airplane Tie-downs						None located at this strip
Inventory and Monitoring	Annual inspection of airstrip conditions and facilities	Annual inspection of facilities, airstrip conditions and monitoring of plans	Annually	Pre-season	Each airstrip	$Cost incorporated in maintenance activities above

Identify Estimated Annual Budget Needs:
Approximately $2,000 per year and an additional $10,000 when a stock team and teamster is contracted to level the entire surface (every 5-10 years)

Assumptions:

- Routine maintenance is conducted by the personnel based at & operating out of the Cabin Creek Station, and volunteers as needed, under the direction of the District Recreation and Wilderness Mgt. Branch with support from the District and Forest Fire & Aviation organization.
  - There is no horse drawn blade at Cabin Creek Airstrip, this activity is contracted or equipment moved to the site.

- Maintenance will be dependent on funding, need and competing priorities.
- Cabin Creek airstrip requires scheduled maintenance throughout the season.
- The Idaho Aviation Association, Recreation Airfield Foundation, Idaho Aviation Association and the National Smokejumper Association are all organizations with potential to assist with maintenance work, but require direction and sign up under appropriate authorities.

Identify Tools for Maintenance

- Shovels
- Pulaski's
- Axe
- Crosscut saw
- Paint brushes
- Grass whip
- Tamping tool

Identify any Inspections and Monitoring

R-4 pilots will inspect the airstrip annually. Feedback from field staff and local pilots will supplement the monitoring process.

The State of Idaho also conducts airstrip inspections and communicates their findings.

Airstrip inspections will be conducted to involve the District Ranger and / or his designated staff whenever feasible.

Inspection reports will be provided to the District Ranger and designated District staff.

Identify Responsibilities and Skills

R-4 pilots are a reliable subject matter expert group for airstrip condition evaluation. The McCall light fixed-wing contract pilots are an experienced group for appraisals.

Krassel R.D. Recreation & Wilderness staff will be responsible for routine operational maintenance of the Cabin Creek Airstrip.

District & Forest Contacts:

- Krassel District Ranger – Anthony Botello; (208) 634-0601
  abbotello@fs.fed.us
- Krassel Recreation Staff Officer – Clem Pope; (208) 634-0616
  cpope@fs.fed.us
- Forest Aviation Officer – Matt Shaddle; (208) 634-0768
  mmshaddle@fs.fed.us
- Krassel Fire Mgt Officer – Tom Bates; (208) 634-9290
  tbates@fs.fed.us

Prepared by: _____ Date: 3-20-12
Forest Aviation Officer, Payette NF

Approved by: _____ Date: 3/20/12
Krassel District Ranger, Payette NF

APPENDIX C
IDAHO AIRSTRIP NETWORK AIRSTRIP CLASSIFICATION PLAN

A PDF FILE

IAN Airstrip Classification 4---16---13

Other	**Wild**	**Primitive**	**Developed**	**Community**
Airstrips with restrictions based on land owner/manager legal requirements. Not for general public use. These places have no facilities and require special skills and equipment beyond the normal anticipated for general aviation, and use is discouraged.	***Airstrips may have basic navigation aids such as windsock and runway markers and no user facilities. Typically located in the remotest settings away from roads and communities.***	***Airstrips have basic navigational aids such as windsocks and runway markers and some limited user facilities. Typically located in remote settings but may be accessed by low---standard road.***	***Airstrips have basic navigational aids and some additional services such as restrooms or camping facilities. May have road access to nearby attractions. Typically located in areas of high use, often in remote settings but may be accessed by improved roads.***	***Airstrips may have additional navigational aids and radio service and other services associated with proximity to communities or other attractions. Typically located near a community with access to full---service roads andclose to some development.***
Dewey Moore* Mile Hi* Simonds* Vines*	Bernard* Big Bar Cayuse Creek Dug Bar Fish Lake* Lower Loon Mahoney* Owyhee Reservoir Shearer* Soldier Bar* Wilson Bar* 45 Ranch Chamberlain * Copper Basin	Atlanta Antelope Valley Bear Trap Big So. Butte Cabin Creek* Cold Meadows* Cox's Well Deadwood Graham Grasmere Henry's Lake Hollow Top Indian Creek* Laidlaw Corrals Landmark May Memaloose Midway Moose Creek* Murphy Hot Spgs. Orogrande Rogersburg Root Ranch** Seven Devils** Twin Bridges Upper Loon Weatherby	Big Creek Bruce Meadows Dixie FS Elk River** Flying B** Johnson Creek Krassel MacKay Bar** Magee Magic Reservoir Pine Priest Lake Reed Ranch Slate Creek Smiley Creek Smith's Prairie Sulphur Creek** Thomas Creek Warm Springs	Cavanaugh Bay Dixie Town** Elk City Garden Valley Idaho City New Meadows Porthill Stanley Warren
Maintenance ***Minimal so as to not render "unserviceable."***	**Maintenance** ***Clear vegetation, remove obstacles, treat noxious weeds and blade periodically to maintain useable airstrip surface.***	**Maintenance** ***Clear vegetation, remove obstacles, treat noxious weeds, blade or mow regularly to maintain airstrip surface.***	**Maintenance** ***Clear vegetation, remove obstacles, blade, mow, water, treat invasive and noxious weeds, and make spot improvements regularly to maintain improved airstrip surface.***	**Maintenance** ***Clear vegetation, remove obstacles, blade, mow, fertilize, water, treat invasive and noxious weeds, and make spot treatments to maintain an improved airstrip surface.***

*Located in a Wilderness Area where ability to perform maintenance is limited. **Privately Owned

APPENDIX D

ARIZONA PILOTS ASSOCIATION CODE OF CONDUCT

Aviator's Code of Conduct
From the AZ Pilots Association

Preamble:

The Arizona Pilot's Association (APA) and The Recreational Aviation Foundation (RAF) are partnering to advancebackcountry aviation in Arizona, and every pilot plays a part in our success. Each of us is an ambassador to the non-flying public, and to the land managers responsible for the airstrips we enjoy. Please do your part by practicing these few rules. We want to be the friendliest and most helpful recreational users these land managers work with!:

Pilots will abide by all State and Federal regulations regarding the use of aircraft.

- Act with all possible courtesy to those on the ground who are hunting, horseback riding or observing wildlife, by maintaining reasonable distance and altitude.
- Know wildlife refuge boundaries as well as seasonalareas of wildlife congregation to avoid inadvertent low level over-flights.
- Avoid putting potential stress on wildlife.
- Get appropriate permissions when required, prior tousing an airstrip.

Pilots will practice good wilderness and backcountry flying ethics.

- Keep the noise signature of the aircraft to a safe minimum.
- Practice "*leave no trace*" camping. Fly it in, fly it out.
- Avoid very early morning departures unless safety of flight demands a deviation.
- Be courteous to other users in the area.
- Do not use these airstrips for training purposes or just to say "I've been there."
- Keep the aircraft clean of noxious weed seed to prevent the spread of weeds to backcountry airstrips.
- Participate whenever possible in work events to maintain these airstrips.

Honor the Land Manager's Vision and Rules for the Airstrip

Many hours of negotiations and work go into each backcountry airstrip and trust is earned through fulfilling our commitments to the land managers. A few rogue pilots can destroy this trust and set our backcountry efforts backwards for years. On the other hand, honoring these agreements can go a long way towards these efforts, and even opening new airstrips, so get to know the vision and rules for each airstrip.

APPENDIX E

IDAHO AIRSTRIP NETWORK MEMORANDUM OF UNDERSTANDING

A PDF FILE

FS Agreement No. 13-MU-11046000-005

MEMORANDUM OF UNDERSTANDING
Between The
STATE OF IDAHO, TRANSPORTATION DEPARTMENT, DIVISION OF AERONAUTICS
THE
IDAHO DEPARTMENT OF FISH AND GAME
THE
IDAHO AVIATION ASSOCIATION
THE
IDAHO AVIATION FOUNDATION
THE
IDAHO OUTFITTERS AND GUIDES ASSOCIATION
THE
IDAHO RECREATIONAL AVIATION FOUNDATION
THE
USDA, FOREST SERVICE
INTERMOUNTAIN REGION
THE
USDI, BUREAU OF LAND MANAGEMENT, IDAHO STATE OFFICE

This MEMORANDUM OF UNDERSTANDING (MOU) is hereby made and entered into by and between the State of Idaho, Transportation Department, Division of Aeronautics, hereinafter referred to as "IDT;" Idaho Department of fish and Game, hereinafter referred to as "IDFG;" Idaho Aviation Association, hereinafter referred to as "IAA;" Idaho Aviation Foundation, hereinafter referred to as "IAF;" Idaho Outfitters and Guides Association, hereinafter referred to as the "IOGA;" Recreational Aviation Foundation, hereinafter referred to as "RAF;" USDA, Forest Service, Intermountain Region, hereinafter referred to as the "U.S. Forest Service," and USDI, Bureau of Land Management, Idaho State Office, hereinafter referred to as "BLM."

Title: Idaho Aviation Network

I. PURPOSE:

The purpose of this MOU is to document the cooperation between the parties in the implementation of the Idaho Airstrip Network (IAN) Action Plan hereinafter referred to as the (Action Plan) for the management and operation of public use airstrips located within or near the State of Idaho. The Action Plan is an outgrowth of the ITD's Vision 2004-2034 process to identify transportation assets, determine needs, and plan for the future of transportation in accordance with the following provisions.

The Action Plan is the product of a series of small group and focus group symposia, culminating in a state-wide summit establishing three major themes with seven strategies for implementation. The themes include:

1) Preserve and enhance access

2) Develop an understanding of Idaho's airstrip assets

3) Improve administrative effectiveness of operation and maintenance of the airstrips in Idaho

The Action Plan strategies provide a detailed structure of activities and outputs which will result in successful realization of the desired future airstrip network.

For the purpose of this MOU, the Action Plan will guide the involvement of all parties to this agreement. It sets forth a series of small task teams and actions which will require active participation of all parties. These discussions and resulting actions will lead to better models for the future management of Idaho airstrip resources. The Action Plan may be updated as necessary.

II. STATEMENT OF MUTUAL BENEFIT AND INTERESTS:

ITD:

ITD is responsible for planning how best to meet the transportation needs of the citizens of Idaho. State governments are important partners in management of the nation's land and natural resources. State agencies have knowledge and expertise relative to natural resources, economic growth and development, resource planning, transportation and other matters. ITD has a responsibility in how airstrip resources in Idaho are managed, as legislated by Chapter 21, Idaho Code.

IDFG:

The IDFG mission statement is defined in 36-103, IC as: "All wildlife, including all wild animals, wild birds, and fish, within the State of Idaho, is hereby declared to be the property of the State of Idaho. It shall be preserved, protected, perpetuated, and managed. It shall be only captured or taken at such times or places, under such conditions, or by such means, or in such manner, as will preserve, protect, and perpetuate such wildlife, and provide for the citizens of this state and, as by law permitted to others, continued supplies of such wildlife for hunting, fishing and trapping." The use of backcountry airstrips by hunters and anglers, and agency employees in the performance of their duties is integral to that mission.

IAA:

The IAA is a non-profit Idaho Corporation under Title 30, Chapter 3, Idaho Code, whose mission is to work with public and private entities for the preservation,

maintenance, and enhancement of aviation facilities; and to promote safety, education and public understanding of general aviation in Idaho. The IAA has approximately 1,000 members, many of whom participate in volunteer maintenance work parties in cooperation with airstrip owners.

IAF:

The IAF is registered in the State of Idaho under Title 30, Chapter 3, Idaho Code, as a non-profit corporation and is exempt under the provision of Section 501(c)(3) of the Internal Revenue Code. The IAF provides funding in conjunction with federal, state and other organization toward improving, maintaining, and operating airfields which will provide better access to the general aviation community. Such funds may be made available for approved IAN projects.

IOGA:

The IOGA is registered in the State of Idaho under Title 30, Chapter 10, Idaho Code, as a non-profit corporation and is exempt under the provision of Section 501(c)(6) of the Internal Revenue Code. The mission statement of the IOGA is "committed to the conservation and enhancement of quality outdoor experiences on Idaho's lands and water." IOGA members rely upon access to many of Idaho's airstrips, both within and outside of designated wilderness in order to provide service to the outfitted public.

RAF:

The RAF is incorporated in the State of Montana under the Montana Nonprofit Corporation Act, Montana Code Annotated (MCA), §35-2-113 *et seq.,* as a public benefit corporation, and has been determined to be a non-profit tax exempt corporation under MCA §15-31-102 (1)(d), and has also been determined to be exempt under the provisions of Section 501(c)(3) of the Internal Revenue Code as a Public Charity. The RAF was formed to receive and administer funds for charitable, educational, and scientific purposes toward promoting public safety through increased access for air support; aviation safety; knowledge of aviation; the preservation, maintenance, and creation of airstrips; and the conservation of natural resources. the RAF provides funding, information, coordination, and other support to and through federal, state, and other public use land managers and pilot organizations across the nation to pursue the purposes of the RAF, and also provides grants for research into general aviation related issues. The resources of the RAF may be made available for approved IAN projects.

U.S. FOREST SERVICE:

U.S. Forest Service manages National Forest System (NFS) lands to maintain and enhance the quality of the environment to meet the Nation's current and future needs. U.S. Forest Service has built, acquired, maintained and operated unpaved backcountry landing strips within the State of Idaho, some of which are permitted to the State of Idaho for their use and operation. These airstrips are located both within and outside of designated Wilderness.

All parties involved will benefit through increased communication, sharing of information, participation, cooperation, and coordination in implementing their respective missions to preserve, protect, operate and maintain Idaho airstrip resources. Public aviation safety will be improved through the implementation of the Action Plan and updates. Perpetuating the availability of Idaho's airstrips will provide multiple benefits, including increased tourism, access to recreation opportunities, enhanced wildlife management, continued emergency access, and sustainable resource management to the citizens of the State of Idaho.

BLM:

The BLM's vision is to enhance the quality of life for all citizens through the balanced stewardship of America's public lands and resources. Its mission is to sustain the health, diversity, and productivity of the nation's public lands for the use and enjoyment of present and future generations. BLM has many varied responsibilities for managing and protecting the nation's natural and cultural legacy which include: recreation opportunities, commercial activities and wildlife habitat among many other responsibilities. Numerous airstrips are located on BLM managed lands. BLM does not currently maintain or manage any of the airstrips. Several airstrips are currently leased or permitted to the State of Idaho and other entities for their use and operation.

In consideration of the above premises, the parties agree as follows:

A. **ALL PARTIES SHALL:**

1. Assign membership and participate in the IAN Steering Committee to coordinate the various aspects of implementation of this MOU and Action Plan.

2. Cooperate in the implementation of the Action Plan and any additional updates.

3. Annually develop a detailed work plan that sets out desired action steps, milestones, participating parties, and time frames associated with all aspects of implementing the Action Plan.

4. Annually, develop a budget and funding strategies, as appropriate, for implementing the Action Plan.

5. Review and assess the appropriate level of environmental analyses required by law, regulation, policy, or by-laws associated with specific action steps within the Action Plan.

6. Develop and agree upon an inventory and classification of airstrips to be included within the IAN, covered by the Action Plan, update Classification as necessary.

7. Develop a process for updating the inventory of airstrips as needed to implement the Action Plan.

8. Monitor progress toward implementing the Action Plan, and suggest adjustments, as needed.

9. Consider public input from other external sources regarding implementation of the Action Plan and, as needed, add additional parties to the Steering Committee and this MOU, as desirable.

III. ITD SHALL:

A. Participate in federal and project level planning as a Cooperating Agency on issues and actions dealing with airstrips located on federal lands within the State of Idaho.
B. Perform the duties and obligations of a Cooperating Agency in the preparation of the National Environmental Policy Act (NEPA) documentation associated with implementing the Action Plan for airstrips within the state of Idaho.
C. Cooperate with airstrip owners during airstrip planning activities, including ongoing maintenance and inspections.
D. Provide guidance and information relative to the development, maintenance, safety, and operational issues of public use airstrips to participating entities.
E. Review the Action Plan and participate in the Steering Committee and Action Plan task groups as appropriate.
F. Encourage, foster, and assist in the continued development of aeronautics in the state as directed by §21-104, Idaho Code.

IV. IDFG SHALL:

A. Operate and maintain the Lower Loon airstrip as a private airstrip open for public use and agree to include it in the IAN inventory.
B. Review the Action Plan and participate in the Steering Committee and Action Plan task groups as appropriate depending upon availability of Steering Committee participant.

V. THE IAA SHALL:

A. Maintain a database on its website containing information on airstrips included in the IAN that is accessible to the public.
B. Contribute volunteer manpower for maintenance and enhancement of IAN airstrips.

C. Provide financial assistance as funds are available with approval of the IAA Board of Directors for implementation of the Action Plan.

VI. THE IAF SHALL:

A. Serve as a central depository for funds received from other parties for IAN projects.
B. Hold such funds in an account identifiable as IAN funds which is separate from other IAF funds.
C. Disperse such funds as requested by the IAN Steering Committee.
D. Provide the IAN Steering Committee with an annual accounting of collections and disbursements.
E. Enter into the appropriate Challenge-Cost Share or Collection Agreements with the federal agencies for activities involving distribution of money to or between the federal parties, including the establishment of an IAN Coordinator position, that would be paid for with such funds.
F. Provide IAF financial assistance for the implementation of the Action Plan as IAF funds are available and approved by the IAF Board of Directors.

VII. THE IOGA SHALL:

A. Review the Action Plan and participate in the Steering Committee and Action Plan task groups as appropriate.
B. Provide information to its membership periodically regarding the IAN including volunteerism opportunities.

VIII. THE RAF SHALL:

A. Review the Action Plan and participate in the IAN Steering Committee and Action Plan task groups as appropriate.
B. Collect, hold, and disperse funds for RAF-approved IAN projects in accordance with currently established RAF procedures.
C. Hold such funds in a sub-account identifiable as IAN project funds.
D. Disburse such funds as requested by the IAN Steering Committee.
E. Provide the IAN Steering Committee with an annual accounting of collections and disbursements.
F. Provide other financial assistance as funds are available and approved by the RAF Board of Directors for implementation of the Action Plan.

IX. THE U.S. FOREST SERVICE SHALL:

A. review the Action Plan, provide updates and participate in the Steering Committee and Action Plan task groups as appropriate.
B. Prepare the analysis and documentation if required by NEPA when the agency plans to implement Action Plan activities on National Forest lands.

C. Recognize ITD as a Cooperating Agency for any NEPA actions associated with implementing the Action Plan as concerns activities on public lands.
D. Coordinate with ITD on airstrip management activities that could affect the implementation of the Action Plan.
E. Ensure that this MOU and the Action Plan comply with existing plans in appropriate Comprehensive Management Plans for wilderness and non-wilderness uses.

X. THE BLM SHALL:

A. Review the Action Plan and participate in the Steering Committee and Action Plan task groups as appropriate.
B. Prepare the analysis and documentation required by NEPA for Action Plan activities that BLM authorizes on public lands.
C. Recognize ITD as a Cooperating Agency for any NEPA actions associated with implementing the Action Plan as concerns activities on public lands.
D. Coordinate with Division of Aeronautics on airstrip management activities on public lands that could affect the implementation of the Action Plan.
E. Ensure that this MOU and the Action Plan comply with existing agency Land Management Plans and is reflected as needed in future Resource Management Plan revisions.

XI. IT IS MUTUALLY UNDERSTOOD AND AGREED BY AND BETWEEN THE PARTIES THAT:

A. APPROVAL. The Secretary of Agriculture, or the Secretary's designee, shall make the final decision for the management of airstrips located on National Forest lands, although consultation will be sought from ITD regarding the management of those airstrip operated and maintained by ITD via Special Use Permit. Similarly, the BLM State Director or the District Manager shall make the final decision for the management of airstrips located on BLM lands in Idaho.

B. FREEOM OF INFORMATION ACT (FOIA). Any information furnished to the federal agencies under this instrument is subject to the Freedom of Information Act (5 U.S.C. §552).

C. FEDERAL ADVISORY COMMITTEE ACT (FACA). In order to meet the intergovernmental committee exception to FACA, all participants of any NEPA ID team must be a full-time or part-time officer or employee of the Federal Government or elected officer of the State, local, or tribal government (or their designated employee with authority to act on their behalf), acting in their official capacity (41 C.F.R. 102-3.40(g)).

D. IDAHO PUBLIC RECORDS ACT. All state records provided to the participants related to the execution and performance of this MOU shall be

subject to the provisions, requirements, and exemptions of the Idaho Public Records Act, Idaho Code §§ 9-337-350.

E. PARTICIPATION IN SIMILAR ACTIVITIES. This instrument in no way restricts any entity from participating in similar activities with other public or private agencies, organizations, and individuals.

F. COMMENCEMENT/EXPIRATION/TERMINATION. This MOU takes effect upon the signature of all participants and shall remain in effect until December 31, 2017. This MOU may be extended or amended upon written request of any active participant and the subsequent written concurrence of the other entities. Any party my terminate this MOU with a 60-day written notice to the other parties.

G. IMPLEMENTATION AND MONITORING. All parties agree that there may be benefits to continuing the relationship represented by the MOU. All parties agree to consider extending this MOU or developing a new MOU once the Action Plan is completed.

H. DISPUTES. Disputes between entities concerning any aspect of this MOU will be resolved through timely discussion and negotiation between the parties to the MOU.

I. RESPONSIBILITIES OF THE PARTIES. All participating entities and their respective agencies and officers will handle their own activities and contribute their own personnel and financial resources, in pursuing these objectives, with the exception of any funding that might be provided the State separately by participating federal agencies. Each party will carry out its separate activities in a coordinated and mutually beneficial manner.

J. PRINCIPAL CONTACTS. Individuals listed below are authorized to act in their respective areas for matters related to this agreement.

Principal Cooperator Contacts:

ITD Contact
Name: Gary McElheney
Idaho Division of Aeronautics
P.O. Box 7129
Boise, ID 83707-1129
208/334-8893
gary.mcelheney@itd.idaho.gov

IDFG Contact
Name: Jon Heggen
P.O. Box 25
Boise, ID 83707
208/334-3736
jon.heggen@idfg.idaho.gov

IAA CONTACT
Name: Jerry Terlisner
P.O. Box 2016
Eagle, ID 83616
208/859-7959
jtflys@live.com

IAF CONTACT
Name: Joe Corlett
P.O. Box 2016
Eagle, ID 83616
208/890-1819
jcorlett@appraiseidaho.com

IOGA CONTACT
Name: Grant Simonds
P.O. Box 95
Boise, ID 83701
208/342-2438
gsimonds@cableone.net

RAF CONTACT
Name: Paul Collins
613 West Sandstone Ct.
Boise, ID 83702-6509
208/861-8257
collins04@cableone.net

U.S. FOREST SERVICE CONTACT
Name: Keith Lannom
800 W. Lakeside Ave.
McCall, ID 83638
208/634-0701
klannom@fs.fed.us

BLM CONTACT
Name: State Aviation Manager
1387 Vinnell Way
Boise, ID 83709
208/373-3853

K. NOTICES. Any communications affecting the operations covered by this agreement given by the U.S. forest Service or Cooperators is sufficient only if in writing and delivered in person, mailed, or transmitted electronically by e-mail or fax, as follows:

To the U.S. Forest Service Program Manager, at the address specified in the MOU.

To Cooperators, at Cooperator's address shown in the MOU or such other address designated within the MOU.

Notices are effective when delivered in accordance with this provision, or on the effective date of the notice, whichever is later.

L. PARTICIPATION IN SIMILAR ACTIVITIES. This MOU in no way restricts the U.S. Forest Service or Cooperators from participating in similar activities with other public or private agencies, organization, and individuals.

M. ENDORSEMENT. Any of Cooperator's contributions made under this MOU do not by direct reference or implication convey U.S. Forest Service endorsement of Cooperators' products or activities.

N. NONBINDING AGREEMENT. This MOU creates no right, benefit, or trust responsibility, substantive or procedural, enforceable by law or equity. The parties shall manage their respective resources and activities in a separate, coordinated and mutually beneficial manner to meet the purpose(s) of this MOU. Nothing in this MOU authorizes any of the parties to obligate or transfer anything of value.

Specific, prospective projects or activities that involve the transfer of funds, services, property, and/or anything of value to a party requires the execution of separate agreements and are contingent upon numerous factors, including, as applicable, but not limited to: agency availability of appropriated funds and other resources; cooperator availability of funds and other resources; agency and cooperator administrative and legal requirements (including agency authorization by statute); etc. This MOU neither provides, nor meets these criteria. If the parties elect to enter into an obligation agreement that involves the transfer of funds, services, property, and/or anything of value to a party, then the applicable criteria must be met. Additionally, under a prospective agreement, each party operates under its

own laws, regulations, and/or policies, and any Forest Service obligation is subject to the availability of appropriated funds and other resources. The negotiation, execution, and administration of these prospective agreements must comply with all applicable law.

Nothing in this MOU is intended to alter, limit, or expand the agencies' statutory and regulatory authority.

O. MEMBERS OF U.S. CONGRESS. Pursuant to 41 U.S.C. 22, no U.S. member of, or U.S. delegate to, Congress shall be admitted to any share or part of this agreement, or benefits that may arise therefrom, either directly or indirectly.

P. FREEDOM OF INFORMATION ACT (FOIA). Public access to MOU or agreement records must not be limited, except when such records must be kept confidential and would have been exempted from disclosure pursuant to Freedom of Information regulations(5 U.S.C. 552).

Q. TEXT MESSAGING WHILE DRIVING. In accordance with Executive Order (EO) 13513, "Federal Leadership on Reducing Text Messaging While Driving," any and all text messaging by Federal employees is banned: a)while driving a Government owned vehicle (GOV) or driving a privately owned vehicle (POV) while on official Government business; or b) using any electronic equipment supplied by the Government when driving any vehicle at any time. All cooperators, their employees, volunteers, and contractors are encouraged to adopt and enforce policies that ban text messaging when driving company owned, leased or rented vehicles, POVs or GOVs when driving while on official Government business or when performing any work for or on behalf of the Government.

R. TERMINATION. Any of the parties, in writing, may terminate this MOU in whole, or in part, at any time before the date of expiration.

S. DEBARMENT AND SUSPENSION. Cooperators shall immediately inform the U.S. Forest Service if they or any of their principals are presently excluded, debarred, or suspended from entering into covered transactions with the federal government according to terms of 2 CFR Part 180. Additionally, should Cooperators or any of their principals receive a transmittal letter or other official Federal notice of debarment or suspension, then they shall notify the U.S. Forest Service without undue delay. This applies whether the exclusion, debarment or suspension is voluntary or involuntary.

T. MODIFICATIONS. Modifications within the scope of this MOU must be made by mutual consent of the parties, by the issuance of a written modification signed and dated by all properly authorized, signatory officials, prior to any

changes being performed. Requests for modification should be made, in writing, at least 30 days prior to implementation of the requested change.

U. COMMENCEMENT/EXPIRATION DATE. This MOU is executed as of the date of the last signature and is effective through December 31, 2017 at which time it will expire, unless extended by an executed modification, signed and dated by all properly authorized, signatory officials.

V. AUTHORIZED REPRESENTATIVES. By signature below, each party certifies that the individuals listed in this document as representatives of the individual parties are authorized to act in their respective areas for matters related tothis MOU. In witness whereof, the parties hereto have executed this MOU as of the last date written below.

OMB 0596-0217
FS-1500-15

STATE OF IDAHO, DEPARTMENT OF TRANSPORTATION, DIVISION OF AERONAUTICS:

BRIAN NESS — Date
Director, Idaho Transportation Department

MIKE PAPE — Date
Administrator, Division of Aeronautics

STATE OF IDAHO, DEPARTMENT OF FISH AND GAME:

Virgil Moore — 3/22/2013
VIRGIL MOORE — Date
Director, Idaho Department of Fish and Game

IDAHO AVIATION ASSOCIATION:

JIM DAVIES — Date
President, Idaho Aviation Association

IDAHO AVIATION FOUNDATION:

JIM DAVIES — Date
President, Idaho Aviation Foundation

IDAHO OUTFITTERS AND GUIDES ASSOCIATION:

GRANT SIMONDS — Date
Executive Director, Idaho Outfitters and Guides Association

OMB 0596-0217
FS-1500-15

STATE OF IDAHO, DEPARTMENT OF TRANSPORTATION, DIVISION OF AERONAUTICS:

3/28/13

for BRIAN W. NESS — Date
Director, Idaho Transportation Department

4/1/13

MIKE PAPE — Date
Administrator, Division of Aeronautics

STATE OF IDAHO, DEPARTMENT OF FISH AND GAME:

VIRGIL MOORE — Date
Director, Idaho Department of Fish and Game

IDAHO AVIATION ASSOCIATION:

JIM DAVIES — Date
President, Idaho Aviation Association

IDAHO AVIATION FOUNDATION:

JIM DAVIES — Date
President, Idaho Aviation Foundation

IDAHO OUTFITTERS AND GUIDES ASSOCIATION:

Grant Simonds 4/29/13

GRANT SIMONDS — Date
Executive Director, Idaho Outfitters and Guides Association

OMB 0596-0217
FS-1500-15

STATE OF IDAHO, DEPARTMENT OF TRANSPORTATION, DIVISION OF AERONAUTICS:

BRIAN NESS — Date
Director, Idaho Transportation Department

MIKE PAPE — Date
Administrator, Division of Aeronautics

STATE OF IDAHO, DEPARTMENT OF FISH AND GAME:

VIRGIL MOORE — Date
Director, Idaho Department of Fish and Game

IDAHO AVIATION ASSOCIATION:

JAMES E. DAVIES — Date
President, Idaho Aviation Association

IDAHO AVIATION FOUNDATION:

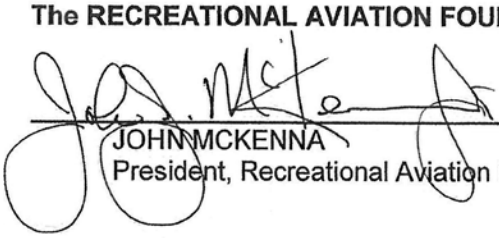
JAMES E. DAVIES — Date
President, Idaho Aviation Foundation

IDAHO OUTFITTERS AND GUIDES ASSOCIATION:

GRANT SIMONDS — Date
Executive Director, Idaho Outfitters and Guides Association

OMB 0596-0217
FS-1500-15

The RECREATIONAL AVIATION FOUNDATION:



03/13/13

JOHN MCKENNA — Date
President, Recreational Aviation Foundation

The BUREAU OF LAND MANAGEMENT, DEPARTMENT OF INTERIOR:

STEVEN A. ELLIS — Date
Idaho State Director, Bureau of Land Management

USDA FOREST SERVICE:

MARLENE FINLEY — Date
Acting Regional Forester, Intermountain Region

CECILIA R. SEESHOLTZ — Date
Forest Supervisor, Boise National Forest

KEITH B. LANNOM — Date
Forest Supervisor, Payette National Forest

REBECCA A. NOURSE — Date
Forest Supervisor, Sawtooth National Forest

BRENT L. LARSON — Date
Forest Supervisor, Caribou-Targhee National Forest

OMB 0596-0217
FS-1500-15

The RECREATIONAL AVIATION FOUNDATION:

JOHN MCKENNA — Date
President, Recreational Aviation Foundation

The BUREAU OF LAND MANAGEMENT, DEPARTMENT OF INTERIOR:

For STEVEN A. ELLIS — 3/14/2013 Date
Idaho State Director, Bureau of Land Management

USDA FOREST SERVICE:

MARLENE FINLEY — Date
Acting Regional Forester, Intermountain Region

CECILIA R. SEESHOLTZ — Date
Forest Supervisor, Boise National Forest

KEITH B. LANNOM — Date
Forest Supervisor, Payette National Forest

REBECCA A. NOURSE — Date
Forest Supervisor, Sawtooth National Forest

BRENT L. LARSON — Date
Forest Supervisor, Caribou-Targhee National Forest

OMB 0596-0217
FS-1500-15

The RECREATIONAL AVIATION FOUNDATION:

JOHN MCKENNA — Date
President, Recreational Aviation Foundation

The BUREAU OF LAND MANAGEMENT, DEPARTMENT OF INTERIOR:

STEVEN A. ELLIS — Date
Idaho State Director, Bureau of Land Management

USDA FOREST SERVICE:

Nora B. Rasure — 6/14/13
NORA B. RASURE — Date
Regional Forester, Intermountain Region

Cecilia R. Seesholtz — 3-26-13
CECILIA R. SEESHOLTZ — Date
Forest Supervisor, Boise National Forest

J Keith B Lannom — 04/02/13
KEITH B. LANNOM — Date
Forest Supervisor, Payette National Forest

Rebecca S. Nourse — 3/26/2013
REBECCA S. NOURSE — Date
Forest Supervisor, Sawtooth National Forest

Brent L Larson — 3/26/2013
BRENT L. LARSON — Date
Forest Supervisor, Caribou-Targhee National Forest

OMB 0596-0217
FS-1500-15

JOHN F. PETERSON — Date
Acting Forest Supervisor, Salmon-Challis National Forest

RICK BRAZELL — Date
Forest Supervisor, Nez Perce-Clearwater National Forest

MARY FARNSWORTH — Date
Forest Supervisor, Idaho Panhandle National Forest

MONICA J. SCHWALBACH — Date
Forest Supervisor, Wallowa-Whitman National Forest

State of Idaho, Transportation Department Legal Review
The authority and format of this instrument has been reviewed and approved for signature by:

Deputy Attorney General — Date

State of Idaho, Department of Fish and Game Legal Review
The authority and format of this instrument has been reviewed and approved for signature by:

Deputy Attorney General — Date

Department of Interior, Bureau of Land Management Technical Review Signature
The authority and format of this instrument has been reviewed and approved for signature by:

Chris Shauer, Acting — 3/11/13
LINDA PITZER — Date
BLM Supervisory Procurement Analyst

OMB 0596-0217
FS-1500-15

JOHN F. PETERSON — Date
Acting Forest Supervisor, Salmon-Challis National Forest

RICK BRAZELL — Date
Forest Supervisor, Nez Perce-Clearwater National Forest

MARY FARNSWORTH — Date
Forest Supervisor, Idaho Panhandle National Forest

MONICA J. SCHWALBACH — Date
Forest Supervisor, Wallowa-Whitman National Forest

State of Idaho, Transportation Department Legal Review
The authority and format of this instrument has been reviewed and approved for signature by:

Deputy Attorney General — 3/18/13 Date

State of Idaho, Department of Fish and Game Legal Review
The authority and format of this instrument has been reviewed and approved for signature by:

Deputy Attorney General — Date

Department of Interior, Bureau of Land Management Technical Review Signature
The authority and format of this instrument has been reviewed and approved for signature by:

LINDA PITZER — Date
BLM Supervisory Procurement Analyst

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FS-1500-15

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Forest Supervisor, Wallowa-Whitman National Forest

State of Idaho, Transportation Department Legal Review
The authority and format of this instrument has been reviewed and approved for signature by:

Deputy Attorney General — Date

State of Idaho, Department of Fish and Game Legal Review
The authority and format of this instrument has been reviewed and approved for signature by:

W. Dallas Burkhalter — 3/15/2013
Deputy Attorney General — Date

Department of Interior, Bureau of Land Management Technical Review Signature
The authority and format of this instrument has been reviewed and approved for signature by:

LINDA PITZER — Date
BLM Supervisory Procurement Analyst

OMB 0596-0217
FS-1500-15

U.S. Forest Service

The authority and format of this agreement has been reviewed and approved for signature by:

_____

MECHELE M. MACDONALD Date
Grants Management Specialist

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Abbreviations used without definitions in TRB publications:

A4A	Airlines for America
AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI–NA	Airports Council International–North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HMCRP	Hazardous Materials Cooperative Research Program
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
MAP-21	Moving Ahead for Progress in the 21st Century Act (2012)
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
PHMSA	Pipeline and Hazardous Materials Safety Administration
RITA	Research and Innovative Technology Administration
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation