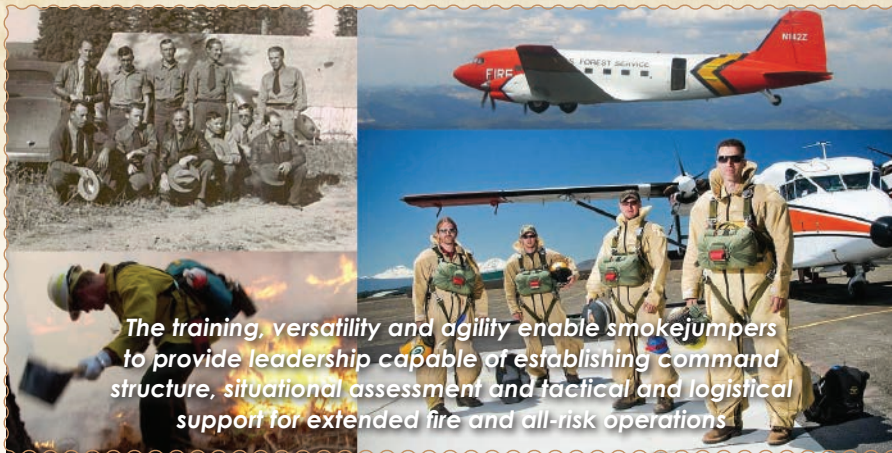


Smokejumpers



The training, versatility and agility enable smokejumpers to provide leadership capable of establishing command structure, situational assessment and tactical and logistical support for extended fire and all-risk operations.

Smokejumpers are wildland fire fighters who parachute to the site of a forest fire. Through this method, fire fighters are able to reach remote areas quickly and combat wildfires before they get out of control. Smokejumpers must be in top physical condition and attend regular training courses. While smokejumping is risky business, it's an effective tactic in many wildfire cases.

Smokejumpers are a highly skilled, rapid response and operationally focused fire resource that provide initial attack suppression on emerging fires and fill a variety of roles on longer duration project fires and wildland-urban interface fires. Their training, versatility and agility enable them to provide leadership capable of establishing command structure, situational assessment and tactical and logistical support for extended fire and all-risk operations.

Smokejumpers are employed in large numbers by the Russian Federation and the United States Forest Service and Bureau of Land Management. Russia maintains more smokejumpers than any other nation in the world (several thousand) and claims the longest history of established smokejumping of any nation, reportedly established in 1936 while smokejumping in the United States was established in 1939.

Russia

The Avialesookhrana, Russia's aerial fire fighting organisation, first began experimenting with paratroopers in 1934 under the direction of GA Mokeeva. Initially, these smoke jumpers landed in populated areas to alert local communities and mobilise local fire fighting services to combat the wildfires; these experiments were very successful. The agency replaced their outdated PO-2 and W-2 aircraft with the multipurpose An-2 in 1952 and has used it since. This new plane allowed the Avialesookhrana to carry both smokejumpers and aerial fire retardants in the same craft, significantly reducing the time it took to effectively suppress a wildfire.

Holding a quarter of the world's forest, Russia faces a daunting number of wildfires; between 20 000 and 35 000 each year. With more moxie than money, the world's first and largest aerial fire fighting force snuffs wildfires across 11 time zones. Fires may burn undetected and unchallenged in the most remote areas but the country's 4 000 smokejumpers put out thousands that no one else can reach.

As many as 20 fire fighters can rappel to a fire from a turbo-powered Mi-8 helicopter but the Russians haven't forgotten their roots. They also parachute from decades-old biplanes, much as they did when they pioneered smokejumping in the 1930s.

USA

In the USA, prior to the full establishment of smokejumping, experiments with parachute insertion of fire fighters were conducted in 1934 in Utah and in the Soviet Union. Earlier, aviation fire fighting experiments had been conducted with air delivery of equipment and 'water bombs'. Although this first experiment was not pursued, another began in 1939 in Washington's Methow Valley, where professional parachutists jumped into a variety of timber and mountainous



Francis Lufkin ready for his first jump during the 1939 experiment in pioneer smokejumping. A local fire guard, Lufkin controlled the North Cascades Base from 1940 until his retirement in 1972.

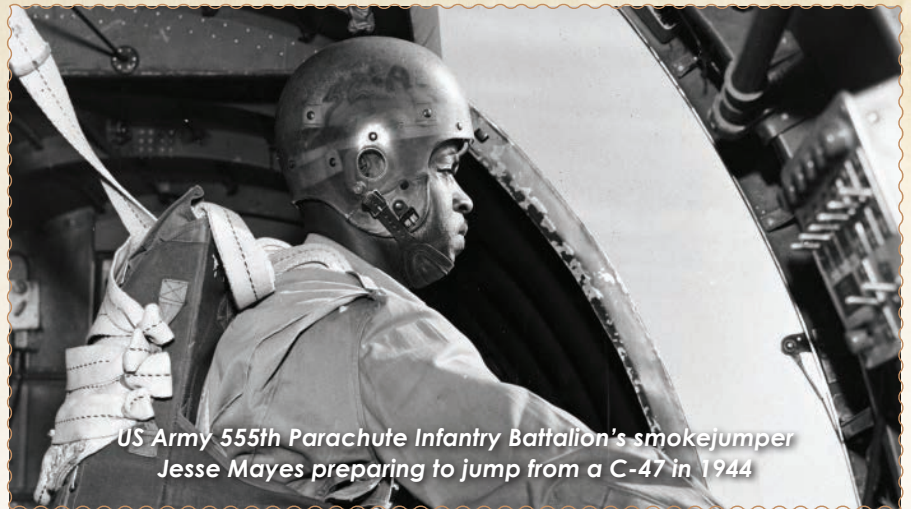
HERITAGE

terrain, proving the feasibility of the idea. This also saw the first US Forest Service employee jumper, Francis Lufkin, who was originally hired as a climber, to extract the professional parachutists from the trees. It is believed that he made this first jump on a dare from the parachutists.

The following year, in 1940, permanent jump operations were established at Winthrop, Washington and Ninemile Camp, Montana, about thirty miles northwest of Missoula. The first actual fire jumps in the history of smokejumping were made by Rufus Robinson and Earl Cooley at Rock Pillar near Marten Creek in the Nez Perce National Forest on 12 July 1940, out of Ninemile, followed shortly by a two-man fire jump out of Winthrop. In subsequent years, the Ninemile Camp operation moved to Missoula, where it became the Missoula Smokejumper Base. The Winthrop operation remained at its original location, as North Cascades Smokejumper Base.

The first smokejumper training camp was located at the Seeley Lake Ranger Station, over 100 kilometres northeast of Missoula. The training relocated to Camp Menard in July 1943. Here, when not fighting fires, the men spent much time putting up hay to feed the hundreds of pack mules that carried supplies and equipment to guard stations and fire locations. In order to work fires, men, organised into squads of eight to fifteen, were stationed at six strategic points, also known as 'spike camps'.

Much time and energy was spent on developing equipment and parachutes. There were a number of frustrating, agonizing situations that had to be worked out. In the end, the training outfit that was selected consisted of a nine-metre Eagle backpack chute and a eight-metre emergency chestpack chute, with quick-attachable harness. A two-piece felt-padded suit, with a pocket on one trouser leg to hold a rope for



US Army 555th Parachute Infantry Battalion's smokejumper Jesse Mayes preparing to jump from a C-47 in 1944

letdowns from trees and obstacles, a football helmet with a wire mesh face mask, athletic supporter, ankle braces, a wide leather and elastic belt to protect against back and abdominal injuries, and heavy logger boots completed the jumper outfit and provided protection for the hazards of jumping into timber.

US history

1917-1933: Aircraft is first used in fighting fires

Before the idea of smokejumping even entered anyone's mind, the US Forest Service was already using aircraft to detect and survey wildfires. During the 1920s, several attempts were made to put out wildfires by dropping water or foam from planes. Unfortunately, the results were less than impressive but with new technologies came new hope. By 1925, fire fighters were using aerial photography and in 1929, departments were sending free-falling supplies to fire fighters on the ground.

1934: Smokejumping is first suggested
By 1934, the military and thrill-seekers were already employing parachutes for non-emergency jumps. It was in this year that TV Pearson, the US Forest Service intermountain regional forester, suggested parachuting in fire fighters to combat fires in remote locations. After a few demonstrations, however, the idea was abandoned as it appeared too risky.

1935-1939: Smokejumping proves more practical

In 1935, the US Forest Service established the Aerial Fire Control Experimental Project. This involved experimenting with dropping water and cargo via parachute onto a wildfire site. While these experiments proved impractical, the tests on parachuting in cargo paved the way for advances that would make smokejumping an ideal tactic.

By 1939, The Aerial Fire Control Experimental Project had realised the potential of parachuting and in the spring of that year, David Godwin led the parachute jumping project in Winthrop, Washington. At that time, seven experienced jumpers and two other locals joined the project and they completed 60 successful live jumps in the forest near their base.

1940-1941: Smokejumping sees its first operational seasons

In 1940, the Parachute Project was in full swing with six smokejumpers based in Winthrop and another crew of seven in Moose Creek, Idaho. Over the course of that year, nine fires were jumped that resulted in saving an estimated \$30 000 worth of damage.

By 1941, the program totalled 26 jumpers and the entire project was moved to a centralised location at ▶

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During the 1980s, smokejumpers were being utilised nation-wide, the US Forest Service employed the first woman smokejumper and smokejumper pilot and the 200 000th parachute jump was made.

Today, the US Forest Service and the Bureau of Land Management, among other organisations, rely on the skills of smokejumpers. While technological advances have helped make smokejumping a reliable tactic for fighting wildfires, smokejumpers are using many of the same concepts first suggested back in the 1930s.

The key differences between the United States Forest Service (USFS) smokejumper and Bureau of Land Management (BLM) smokejumper programmes are the size and types of fires they theoretically set out to combat. The US Forest Service (USFS) jumpers typically work on land managed by the Forest Service, including national forests and big timber in the lower 48 states.

The BLM jumpers in Alaska work on BLM land in the black spruce trees of Alaska, where thousands of square kilometres of wilderness are managed by the BLM. The USFS programme is also hundreds of jumpers larger.

In the Great Basin, the smokejumpers go on 'range' fires, where short, stubby sagebrush or Piñon Juniper burns on more open terrain. The terrain that's home to the Great Basin Smokejumpers includes

- ▶ Missoula, Montana, home of Johnson's Flying Service, which supplied pilots and aircrafts for the project.

1942-1945: WWII reduces access to qualified personnel but the programme prevails. Thanks to the demands of WWII, the smokejumper project slowed down during the 1940s and involved a lot of training for inexperienced jumpers. While more smokejumper bases were established during this time, qualified personnel were limited. In 1942, only five of the previous years' jumpers returned and another 33, mostly without any fire experience, were trained.

By 1943, personnel were depleted to a point where only five jumpers including the instructor were available. However, inquiries from draftees in public service camps rolled in, allowing the programme to train 70 more smokejumpers from the Civilian Public Service and another 25 from the US Coast Guard, the Canadian Air Observers School and the US Air Force for pararescue work.

By 1944, the Civilian Public Service smokejumper programme had a team of 110 jumpers. In the same year, the US Forest Service officially adopted the smokejumper project.

1946-Present: The Smokejumper Programme grows in popularity and acquires new resources. After the war ended and thanks to the US Forest Service adopting the programme, smokejumping grew in popularity. By 1958, the project grew to 398 smokejumpers. While new bases have been established since then, the number of smokejumpers at any given time has consistently hovered around 400. Throughout this time, technological advances have improved the programme. In the 1970s, for instance, the Bureau of Land Management experimented with Ram-Air style parachutes, which were better for the Alaska terrain.



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Nevada, Utah, Western Colorado, Southern Idaho, Wyoming and Eastern Oregon.

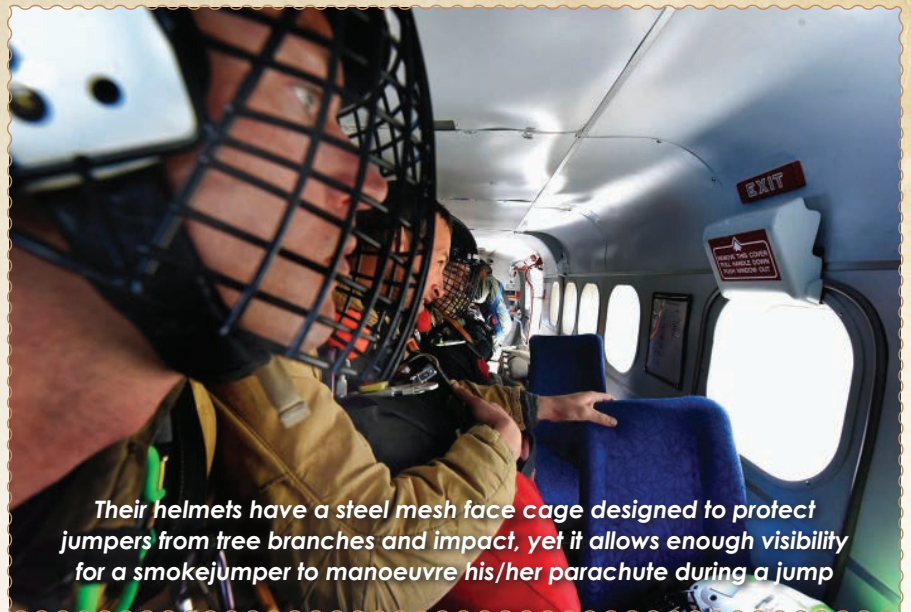
However, during a busy season, any smokejumper from any base and from either the US Forest Service or Bureau of Land Management will jump a fire depending on need and fire activity. Flexibility is key to being a smokejumper. In fact, flexibility is why the Great Basin Smokejumpers grew from BLM jumpers in Alaska. The first BLM jumpers in the lower 48 states came from Alaska to Boise to provide manpower boosts to the lower 48 and eventually they formed a permanent base. While the first smokejumpers in the United States jumped in 1940 under the US Forest Service, BLM's smokejumper programme was only founded in 1959 in Alaska, the same year Alaska became a state. It wasn't until 1986 that the Great Basin Smokejumpers came to be, situated at the National Interagency Fire Centre (NIFC) in Boise. The NIFC is the national nerve centre in coordinating wildland fire fighting efforts and it houses eight different fire fighting agencies.

Parachutes

The BLM smokejumper programme leads the way in parachute innovation, having long ago adopted the Ram-Air parachute system. Some of the ideas were imported from the Russian smokejumper programme but they have been uniquely adapted for the BLM smokejumpers. The USFS smokejumper programme is currently phasing in the new parachute as well.

The Ram-Air parachute allows for more control while flying in the air but it must be deployed with a ripcord when a jumper is in the air. The older, round-style parachutes automatically inflate with a static line when jumping out of an aircraft but offer less manoeuvrability and speed.

No matter what parachute gets used, the job can come with long weeks and months away from home during fire season. Some smokejumpers end up in Alaska all summer.



Their helmets have a steel mesh face cage designed to protect jumpers from tree branches and impact, yet it allows enough visibility for a smokejumper to manoeuvre his/her parachute during a jump

Aircraft

Utilising a fleet of fixed wing aircraft including a Twin Otter, Dornier, Casa and a Shorts Sherpa, smokejumper and paracargo operations can reach anywhere in the country. The DH-6 300 series Twin Otter is a short-take-off-and-landing (STOL) aircraft ideal for demanding smokejumper missions in the back country. The Twin Otter has a cruise speed of 150 knots, providing an initial attack capability of eight smokejumpers with a two day supply of food, water and fire fighting supplies within a range of 340 nautical miles from the base of operation. The STOL capability of this aircraft enables it to operate from more primitive landing fields. Shorts Sherpa C-23, Dornier and Casa aircraft are also used for the delivery of smokejumpers and their cargo and to transport paracargo and equipment.

Gear

Most smokejumper gear is distinctively oriented to their job and made by them. The small number of smokejumpers in the US doesn't generate enough demand for commercial manufacturers to produce such gear. Thus, besides jumpsuits, smokejumpers make and sew their own backpacks, parachute harnesses and all the other fabric based equipment. The jumpsuits are made from padded Kevlar, the same material as used in bulletproof vests. They don't, however, make their own

parachutes. Glowing embers can burn holes in a parachute canopy and tree branches can snag them. Thus, smokejumpers become adept at repairing their own chutes.

Their helmets have a steel mesh face cage, designed to protect jumpers from tree branches and impact, yet it allows enough visibility for a smokejumper to manoeuvre his/her parachute during a jump. Once the smokejumpers are on the ground, their jump helmets and jump suits come off and they wear hardhats, gloves and normal fire fighting gear.

Mann Gulch Fire

Despite the seemingly dangerous nature of the job, fatalities from jumping are infrequent, the best-known fatalities in the United States being those that occurred at the Mann Gulch Fire in 1949 and the South Canyon Fire in 1994. The fire with the most line-of-duty smokejumper deaths was the Mann Gulch Fire, which occurred north of Helena, Montana, at the Gates of the Mountains area along the Missouri River. Thirteen fire fighters died during a blowup, 12 of them smokejumpers. This disaster directly led to the establishment of modern safety standards used by all wildland fire fighters.

Sources: US Forest Services, Missoula Smokejumpers, US Army, Mashable, Escapees, Daily Kos. ▲