

United States
Department of
Agriculture

Forest
Service

Northern
Region



HISTORY OF SMOKEJUMPING





HISTORY OF SMOKEJUMPING

Prepared by:

Aviation & Fire Management
Northern Region
Missoula, Montana 59807

August 1, 1980

RL-80-22

Background History

In order to present a complete record of smokejumping, it is necessary to touch briefly on a few pertinent facts relating to earlier uses of aircraft by the Forest Service in its fire control activities.

Shortly after the close of the first World War, Chief Forester Henry S. Graves wrote the Chief of the Army Air Corps, suggesting cooperation with the Forest Service for fire detection in certain western States. This was followed by the organization of a fire patrol, which was initiated in California and later extended to include Oregon, Washington, Idaho, and Montana. A prominent figure in the early days of the patrol was Colonel H. H. (Hap) Arnold, at that time in charge of the Western Department, and later to become World War II Commander of the U.S. Air Force.

Aerial fire control in Region 1 (Montana, Idaho, and eastern Washington) dates from the early summer of 1925 when Forest Inspector Howard R. Flint, together with Lieutenants Nick Mamer and R. T. Freng of the Air Corps Reserve, organized the Fire Patrol at Spokane. Lieutenant Freng remained only the one season, but during the succeeding decade, the names of Flint and Mamer became inseparably connected with the pioneering of aerial activities in the Northern Rocky Mountain Region.* During that period (1925-1935), aerial photography expanded from a small experimental project to large-scale

* Flint became fatally ill while accompanying a National Geographic expedition down the Salmon River in Idaho. He died October 14, 1935, at Missoula, Montana, where he had been flown by the late pilot, Dick Johnson. Nick Mamer was killed March 14, 1938, while piloting a Northwest airliner which crashed in the Bridger Mountains near Bozeman, Montana.

production; and cargo dropping, first employed on actual fires in 1929, had become a practical means of supplying firefighters in the backcountry 5 or 6 years later.

The use of airplanes and parachutes for transporting firefighters was considered by a few progressive-minded foresters in the early days of the fire patrol, but for a long time the idea was discarded as being too dangerous and wholly impractical. In 1934, T. V. Pearson of the Intermountain Region of the Forest Service (Region 4) with headquarters at Ogden, Utah, proposed and initiated the first experiment in the use of parachutes for transportation of firefighters. A few demonstrations were made by a professional (J. B. Bruce), but the idea was abandoned as being too risky. Characteristic of the attitude of the times, almost everyone considered it a harebrained scheme - parachutists being regarded (and with some justification) as crackpots, publicity-loving daredevils, or just plain crazy. Hence, the parachute as a practical means of conveyance from plane to ground had very little chance of early recognition.

Yet, to anyone who might have looked closely into the matter, an array of convincing evidence of a steady growth in overcoming the hazards of parachute jumping would have been brought to light. The early observations of Leonardo da Vinci and the many practical, if sometimes fatal, experiments dating from Revolutionary to pre-World War I times had, in a general way, settled the matter of function and design. As early as 1916, Herbert L. Adams of Somerville, Massachusetts, procured patents on a parachute that he claimed could be steered by manipulation of the shroudlines, and a few years later John William Cawdery, an Englishman, invested one that could be controlled by means of guidelines attached to lateral flaps. Ivar Malmer of Stockholm, Sweden, Richard H. Hart of New Orleans, and Leslie Irvin, founder of the "Caterpillar Club," added their bit to the steadily

increasing knowledge of behavior and controllability, so that even before the date of the first Forest Service sponsored demonstrations, it could be stated that parachutes were available that were reasonably safe from malfunction and steerable to a limited degree.

In December 1935, the Aerial Fire Control Experimental Project was set up in the Washington Office of the Forest Service, the immediate plan being to continue experiments in the use of water and chemical bombs which Flint had initiated in Region 1 a few years before his death. Until 1938, all Forest Service flying in the western Regions had been done by Army planes through cooperative arrangements or by private contract fliers, but during that year, a commercial-type, high-wing 5-place Stinson was purchased by the Forest Service and the bombing experiments were continued in the California Region (Region 5).

During the period 1936 to 1939, a great deal was learned about cargo dropping and several of the western Regions were engaged in making tests or employing this method of aerial supply with different types of equipment and under widely varying conditions. But it began to be more and more apparent that suppressing fires by the use of water or chemicals from the air was impracticable with the planes and equipment that were available at the time.

1939

The Birth of Smokejumping

At the beginning of the 1939 field season, the Aerial Experimental Project was transferred from California to the North Pacific Region (Region 6). David P. Godwin, Assistant Chief of Fire Control, was in charge, with Lage Wernstedt representing the Region and Harold King as Forest Service pilot. It was during this summer that the

decision was made to abandon the bombing tests, and on Godwin's recommendation, the unexpended balance of experimental funds was authorized for carrying on a parachute jumping experiment. A contract was prepared providing for parachutes, protective clothing, and the services of professional riggers and jumpers, the Eagle Parachute Company of Lancaster, Pennsylvania, being the successful bidder. The experiment was conducted at Winthrop, Washington, on the Chelan National Forest during the period October 5 to November 15, with Beach Gill of the Eagle Company serving as consultant and collaborator - under appointment of the Secretary of Agriculture. A small group of professional jumpers, with Frank M. Derry in charge, conducted a number of dummy tests and approximately 60 live jumps were made, largely by employees of the contractor. Toward the end of the experiment, several Forest Service employees were allowed to jump into both open-field and timbered areas. There were no injuries of consequence.



The 30 foot diameter Eagle parachute was the first canopy style used by the smokejumpers. Used until 1944.

The selected training outfit, consisting of Eagle 30-foot backpack and 27-foot emergency chest-pack canopies with quick-attachable harness, appeared to be satisfactory, while a two-piece, felt-padded suit, football helmet with wire-mesh face mask, athletic supporter, ankle braces, combined back and abdominal brace, and heavy logger boots completed the attire of the jumper and provided protection from the hitherto unknown hazards of timber jumping. The conclusions were that smokejumpers could land safely in all kinds of green timber cover common to the Chelan National Forest at altitudes ranging from 2,000 to 6,800 feet. Successful jumps were also made in mountain meadows, open ridgetops and on steep, boulder-strewn slopes.

1940

First Practical Use of Smokejumpers

As a result of the experiments of the previous year, Regions 1 and 6 each organized a small squad of smokejumpers for the 1940 fire season. The latter Region developed its squad around a nucleus of Chelan Forest guards who had jumped during the experiments of the previous fall, while Region 1 selected a project leader and sent him to Winthrop to undergo initial spring training with Region 6. The technician who had been provided by the Eagle Company for the experiment of the previous fall was retained to serve both Regions through the training season.

Due to a light fire season within the Region 6 sphere of activity, their squad had little action during the summer. On the other hand, Region 1 jumpers handled nine "selected" fires in a season of the highest lightning fire occurrence on record. An analysis of the nine fires indicated a net overall saving of approximately

\$30,000, or nearly three times the cost of the entire project.

The first actual fire jumps were made on July 12 by Rufus Robinson of Kooskia, Idaho, and Earl Cooley of Hamilton, Montana, on Martin Creek in the Nezperce National Forest. Of historic note also is the first successful "rescue jump" made by Smokejumper Chester N. Derry 3 days later, to an airplane crash in the Bitterroot Forest. This last incident, together with the subsequent parachute training of Dr. Leo P. Martin of Missoula as the first "jumping doctor," marks the initial milestone in rescue jumping - an activity that continues to develop and expand along with smokejumping. Both Derry and Dr. Martin were later killed in airplane crashes.

An interesting sidelight - and one with far-reaching effects - pertains to the visit of four U.S. Army staff officers to the parachute training camp at Missoula in June. One of these, Major William Cary Lee, later employed Forest Service techniques and ideas in organizing the first paratroop training at Fort Benning, Georgia.*

1941

Smokejumpers Used as "Shock Troops" on Bigger Fires

By early spring of 1941, it had been decided that the smokejumper project would be transferred wholly to Region 1 and centered at Missoula for the coming

*Major Lee subsequently commanded the 101st Airborne Division which he took to England and trained for the Normandy invasion. He became first Chief of the Airborne Command and is regarded as the unquestioned father of U.S. airborne doctrine.

season. Success of the previous year's activity only partially accounted for this decision. Region 1 contains about 8 million acres of roadless area, of which the Regional Headquarters at Missoula is the geographic center and logical hub. Furthermore, the Johnson Flying Service at Missoula could provide the planes, pilots, and mechanical service which were extremely difficult, if not impossible, to obtain elsewhere at that time. In taking over the project, Region 1 also provided jumpers on call for Regions 4 and 6, to the limits of availability.

Increased funds allowed an expansion to a three-squad outfit totaling 26 men, including nearly all of the jumpers who had served in the previous year's squads.

An outstanding accomplishment of the year was the development of a static line, which was adapted to the Eagle backpack and used throughout the season. The use of this device, which eliminates the manually controlled ripcord, appeared to have a remarkable effect on the trainees in reducing the intensity of nervous reactions that generally precede the first few jumps. This, together with a more systematic and intensive course of ground training and careful selection of candidates, resulted in a highly successful session, with all trainees easily qualifying.

Intermittent showers well scattered throughout most of Regions 1 and 4 resulted in an extremely mild fire season, and had it not been for a rather serious outbreak in the North Pacific Region in late July, the value of the smokejumping unit would not have been so apparent as during the previous year. As it turned out, the jumpers again handled or reinforced nine fires, this time with an estimated saving in excess of \$30,000. Also for the first time, an organized force was jumped to a threatening fire that had escaped from the initial attackers and had reached an area of 15 acres in extremely bad fuels. While the jumpers alone did not control this fire, they

were able to hold it in check through the heat of a bad "burning day" until the arrival of adequate ground forces.

Through the season there were increasing demands for material on the smokejumpers from feature writers and other interested sources of news dissemination. A representative of Scientific Films took color pictures of the smokejumpers in training for a special newsreel. Paramount Pictures, Inc., entered into a contract with the Forest Service for the aerial and parachuting sequences of a forthcoming film to be adapted from a magazine story by Thelma Strabel. This filming was completed during the month of September.

1942

First Effects of the War on Smokejumping

Continuing in 1942 as a Region 1 project, a further expansion led to a four-squad unit, and only the impact of war prevented greater development. As it was, age limits and experience requirements had to be liberalized in order to secure recruits, though physical standards were not lowered.

The training season opened with only five experienced jumpers on hand. A considerable number had entered military service, while others were occupied as instructors with the C.A.A., or at Army and Navy parachute rigger schools, and in essential war industry. Of the 33 recruits that started training, only a few were experienced smokechasers and, to offset this deficiency, a greatly intensified program of fire control training was carried out.

The equipment situation was almost as critical as that regarding manpower, but a few chutes not acceptable to the armed services were picked up at inter-

vals and converted. This necessitated experimentation, out of which came the outstanding development of the season, the Derry slotted chute which is maneuverable, provides easy opening, a slow rate of descent, and relatively little oscillation. This made it possible to convert any standard flat-type chute by adding the slots and guidelines.

Considerable moisture during June and July held the fire season back, and even in August, comparatively few fires occurred which warranted the use of jumpers, although some valuable use was made of them on a few occasions. A local concentration of lightning fires in the remote area of the Bitterroot and Nezperce Forests in early September, however, more than paid for the entire season's cost of the project. By this time, a few more jumpers had left to join the armed forces, but all of those remaining were concentrated in the critical area, and for about a week men were jumped to fires as rapidly as chutes could be retrieved and repacked for service. The total score for 1942 credited to smokejumpers was 31 fires controlled alone and 4 more controlled with the aid of ground forces. The indicated savings in suppression costs were approximately \$66,000.

The Derry slotted chute became standard smokejumper equipment in 1942 because of its better maneuverability, slower descent rate, less oscillation, and less opening shock than the flat-type chute.



Parachute packing shed at Moose Creek Air Field, Bitterroot National Forest. 1940/43

1943

The Civilian Public Service Program — First Training of Military Personnel

By the spring of 1943, the manpower shortage had reached a critical stage and, despite the training program of the previous year, again only five experienced jumpers, including the instructor, were available. The most strenuous efforts at recruiting had resulted in the selection of four young men whose youth or minor physical defects had up to this time kept them out of the Army, but in the meantime, a number of inquiries had been received from individual 4-E (conscientious objector) draftees in public service camps who wished to secure noncombatant work involving exceptional physical risk. This paved the way for the parachute program of 1943, in which all C.P.S. camps were solicited for volunteers. By a careful sorting of 300 applications, 62 candidates were selected, a majority of whom were from the so-called "peace churches" (Mennonites, Brethren, and Friends). Meanwhile, Regions 4 and 6 had entered the program, each sending fire control men to Missoula to be trained as squad leaders and riggers to overhead the C.P.S. squads that would be assigned to them later. About 70 new men were trained during the 1943 session and again there were no failures, although a few received injuries in training which prevented them from jumping on fires during the summer.

Training facilities were enlarged by the addition of an obstacle course, a plane mockup and a number of lesser improvements in both equipment and techniques. The War Department released a quantity of canopy material which amply provided for the season's needs, and shortages in other materials were overcome by improvisations and substitutions.

The fire season of 1943 proved the exception to the rule backed by 30 years of recorded history - that three consecutive "easy" seasons do not occur in the Northern Region. However, the usual fall break did not materialize and the Region experienced a severe drought in September and early October. Since most of the ground forces were composed of 16- and 17-year-old boys who returned to school or entered military service by early September, the smokejumpers were practically the sole remaining group to carry this post-season fire load. As in the previous fall, a flurry of activity again resulted in large savings in suppression costs, the season's estimate for Region 1 being \$75,000 for a total of 47 fires.



Jump training tower at Ninemile smoke-jumper headquarters, 1943-1953.

An unusual feature of the season's activities was the parachute training of rescue units from the military services, involving about 25 individuals of the U.S. Coast Guard, Canadian Air Observer Schools, and U.S. Army Air Forces. This "rescue training" began shortly after the close of the regular session and extended with few breaks until December 10. About half of those trained were flight surgeons of the Second Army Air Force and the Second and Third Arctic Rescue Squadrons.

Closely connected with this activity was the establishment of a Second Air Force Search and Rescue Section, with the Forest Service an active participant. This was initiated by Captain Frank Wiley of the U.S. Air Force.

1944

Smokejumping No Longer an Experiment . Makes Actual as well as Theoretical Savings

Anticipating a continuing shortage of smokejumper candidates, arrangements were made with Selective Service and the National Service Board for religious objectors to keep as many of the trained C.P.S. men as wished to remain through the winter and again be available as jumpers in 1944. This resulted in the retention of about 60 percent of the entire group, those retained being placed on a variety of winter projects within the three Regions. The C.P.S. program was expanded in the spring to a total of 110 men and, despite a proportionately smaller number of volunteers from which to make selections, the results were again very satisfactory. Distribution of the units was essentially the same as in 1943, with increases in the number of jumpers assigned to the three Regions.

Training of the new men was conducted in Region 1, as was most of the refresher training for the older men, and training techniques were further improved. An important new feature was the use of a public address system (field amplifier) by means of which the instructor on the ground could guide and direct the trainee through his first few jumps.

A further centralization of smokejumper use in Region 1 led to a slightly different arrangement of forces at the various bases. It was found that most effective use of jumpers could be raised or lowered in size according to probability of use and was kept filled from the nearby "feeder base" where 40 to 50 jumpers were kept continuously on project work.

The fire season of 1944 was hardly up to normal in most of the area covered by the jumpers, but the occurrence of lightning fires was high and there were a few bad "spots" as well as periods of concentration. Smokejumper activity was greater than ever before and well distributed over all three Regions. Considerably more than a 100 fires were handled by jumpers - about 75 percent from the Missoula base. Jumpers were used on larger fires than previously and in larger groups, and the instances of substantial savings were correspondingly greater.

There was no further training of military personnel, but the expansion of rescue units and their success led to greater demands for technical information and special equipment, making it necessary to keep a larger force of riggers employed during the winter season.

Perhaps the most significant change in Region 1 was the inclusion of parachute jumpers in the regular organization. Hitherto, the smokejumper unit had been organized as a special force - an adjunct to the ground firefighting groups, financed from special experimental funds. In 1944, for the first time, a number of National Forests reduced their ground forces, thus

becoming wholly dependent upon the smokejumpers in certain large areas. The results seemed to justify the action, which was a move toward greater economy as well as increased efficiency.

Another important feature of the 1944 season was the first use of large military airplanes for smokejumping. Region 6, through cooperation with the U.S. Marine Corps, successfully employed Navy DC-3's for actual fire jumps in Washington and Oregon. In Region 1, Ford tri-motors and Curtis Travelairs continued in use as the workhorses of the parachute project.

1945

The "Continental Unit" — First All-Out Air Control Project

As the last of the "war years," 1945 will have an important place in the history of smokejumping. Continued expansion of the C.P.S. program, plus the return of a few war veterans, increased the total number of smokejumpers to 220, of which nearly 100 were men with one or more previous seasons' experience. All of the training of new men and most of the refresher training was handled at the Ninemile base near Missoula, and the final distribution resulted in a substantial increase in the number of smokejumpers over the previous year in all three Regions. Principal bases were maintained at Missoula, Montana; McCall, Idaho; Twisp, Washington; and Cave Junction, Oregon.

The fire season of 1945 was far more severe than at any time since 1940. In Region 1, burning conditions became acute at times in some of the areas dependent upon smokejumper action, and there was practically no letup in activity from July 11 through the first

week in September. The record for 1945 shows that in the three Regions, smokejumpers were used on 269 fires, with a total of 1,236 individual jumps. From the four operating bases, the jumpers covered fires in 23 National Forests located in the States of Montana, Idaho, Washington, Oregon, and California. They also jumped to fires in Yellowstone and Glacier National Parks, U.S. Indian lands, private timber association lands, and in one instance, just over the International Boundary in Canada.

A far from complete cost analysis, covering only two of the three Regions, indicates a net saving of \$346,780 for the season; but in numerous cases it was apparent that the savings on a single fire might conceivably have equaled the entire figure. To a far greater degree than in any previous year, smokejumpers were used in large groups to spearhead control action on the larger and more threatening fires — often with complete success.

Among the many events and occurrences of the year, the following are of greatest importance:

1. Death of Pilot Dick Johnson in an airplane crash near Jackson, Wyoming, March 2. Dick was one of the ablest of mountain pilots and one of the first to fly the smokejumpers.
2. First experimental "air control area" set up in Region 1. Two million acres of roadless wilderness, including parts of the Flathead, Lewis & Clark, Lolo, and Helena Forests, handled by air detection and smokejumpers to the exclusion of most of the ground forces. This became known as the "Continental Unit" because of its location adjacent to and on both sides of the Continental Divide.
3. The training and equipping of 14 officers and enlisted men from various Alaskan and Canadian stations of the Air Transport Command as parachutists. This was conducted at Missoula in March and June. The purpose was to provide additional personnel to jump with paratroopers on search and rescue missions.

4. First active participation of smokejumper and Army paradoctors together in rescue missions. Two instances involving severely-injured smokejumpers were successful. A third concerned a hunting accident in which the victim was brought out alive but died within a week, and the fourth instance involved two Army fliers, both of whom were found to have been killed in the crash. In two other cases, smoke jumpers parachuted unaccompanied by a paradoctor to aid and pack out injured men. The total number of recorded rescue jumps for the year in Region 1 is 55.

5. Training of the 555th Battalion of Negro paratroops in timber jumping and firefighting to combat Japanese balloon fires. This was conducted at Pendleton, Oregon, by parachute instructors from Missoula. Since the balloon menace did not materialize, the 300 paratroopers were used as auxiliary suppression crews on large fires in Regions 1, 4, 5, and 6.

6. Procurement of two UC-64 Noorduyn-Norseman airplanes by loan from the Army and their use for transporting smokejumpers in Region 6.

In summarizing the activities of 1945, it may be said that, while smokejumping has been regarded as successful for a number of years, this was the first season in which its importance was fully demonstrated. Region 1 had a force of 144 well-trained smokejumpers and the fire season was severe enough to give them a thorough test. It also became evident that smokejumping has two major purposes: (1) As an economical substitute for the costly installations and difficult training and supervision problems of a widespread "back-country" smokechaser organization. (2) As a quick and effective means of placing skilled, hard-hitting crews on those fires that have escaped or threaten to escape the initial attackers.

THE LAST MODEL of the Ford tri-motor planes used by the Northern Region for delivering smokejumpers and aerial cargo to forest fires. Built in 1929-30, this Ford Model 5-A-T carried eight smokejumpers and their equipment. This model was used out of the Missoula Aerial Fire Depot up until 1967.



1946

Reconversion — End of the C.P.S. Program and First Wholesale Recruiting of Ex-GI's

With the end of the war, the C.P.S. program was rapidly liquidated and the three Regions engaged in smokejumping faced the necessity of developing a new organization around the small group of trained overhead that remained. In spite of this fact, however, there was no reduction in the size of the project, and a training program much larger than heretofore was organized and put into action.

While the overall number of jumpers remained about the same as in the previous year, there was a further expansion in operational area. The National Park Service provided funds for a small group out of the Missoula contingent of jumpers to be available on call for fires in Yellowstone and Glacier National Parks and the California Region (Region 5) similarly financed a portion of the Cave Junction (Oregon) outfit. The latter group was for use on fires in the Siskiyou Mountains of northern California.

Of the Region 1 group of 164 jumpers, 84 percent were ex-servicemen and about 40 percent of the total were college students, of whom a little more than one-half were students of forestry. Numerous minor developments in both training techniques and equipment kept pace with the expanded training program, and the addition of a C-47 to the contractor's fleet of airplanes made it possible to transport larger crews at greater speed on several of the most threatening fires.

The fire season was not as critical as in the previous year, but the occurrence was considerably greater, and more fires were actually jumped to than in 1945. A cost analysis sub-

mitted by Region 1 shows a saving of \$376,560 through the use of smokejumpers on 202 fires.

A tragedy of the 1946 season was the death of Pilot Bill Yaggy in an airplane crash near Dixie, Idaho, in February. Bill was a smokejumper himself in 1941; afterward he became a pilot and flew jumpers on many training and firefighting missions.



First used in 1946, C-47 planes are still used for smokejumping, to transport both cargo and nonjumping firefighting crews.

1947

Expansion — Smokejumping Extends to the Mexican Border and Into Canada

Highlights of the 1947 season are more important for their long-range significance than for the immediate results obtained.

There was little change in the size of the project, but with 55 percent of the 1946 organization available at the beginning of the season, the job of

recruiting and training was not such a prodigious problem as it had been in the previous year. As would be expected, the 1947 squads were more effective and, despite the mildness of the season, there were numerous "critical" fires adequately handled.

There was a drop in the number of smokejumper fires over the previous year, the total being 131 for the Region 1 unit, and no cost analysis was made, as it was felt that previous estimates had served their purpose and that no question existed as to the economy of this method of firefighting. A total of 576 individual jumps were made to fires and an additional 37 jumps on rescue missions involving five separate cases, one of which was participated in by Dr. Amos Little.

Newsworthy facts of the 1947 record are as follows:

1. Regions 4 and 6 developed training centers and conducted their own parachute training. Previously this had been carried on at one large central camp near Missoula.

2. A foreman and eight jumpers from Region 1, and a Noorduy-Norseman plane with pilot from Region 6, were detailed to the Gila National Forest in southern New Mexico for the period May 25 to June 25. This was in response to a request from Region 3 (Arizona and New Mexico) for an experimental trial at smokejumping during the spring season of lightning fires in the Gila Wilderness Area.

3. The Provincial Forest Service of Saskatchewan, Canada, developed a smokejumper project after representatives had conferred with the Regional Office at Missoula. Region 1 parachute technicians gave advice and the actual training of smokejumpers was accomplished by a commercial firm headed by a Canadian who had been trained as a rescue jumper at Missoula during the war.

4. Death of Dave Godwin, newly

appointed National fire control chief, in an airlines crash in the Virginia Mountains on June 13. More than any other individual, Dave was responsible for the initiation of the "Parachute Project" and his continued interest and support contributed much to its success.

5. Smokejumpers from the Missoula base participated in combined aerial attacks on two fires that were bombed from the air as a part of the Forest Service - U.S. Army cooperative fire bombing project. Smokejumpers also participated as ground crews during the fire bombing experiments in the Missoula area.

6. Two groups of 10 men each from the Air Rescue Service which operates under the Air Transport Command, U.S. Air Force, were trained as jumpers at Missoula during the fall. These groups were composed of medical and training officers and enlisted men, and they were given the regular course of parachute instruction as modified to meet the requirements of rescue jumping.

1948

Smokejumping at Lowest Ebb — Northwest Experiences Floods Instead of Fires

Starting out with severe floods in Montana, Idaho, and Washington, moisture continued in abnormal quantities throughout the usual fire season. There was normal jumper activity for the squad assigned to New Mexico and some of the Missoula jumpers got workouts in southern Idaho later in the season but, in Region 1, 1948 was definitely a freak year. In order to hold the unit at full strength,

Missoula jumpers were assigned to flood damage repair projects where they are credited with having accomplished a considerable amount of important work. It was also a good year for equipment development, slack periods of technicians being utilized in testing and perfecting new devices for increasing efficiency and safety.

Training of jumpers in the evacuation of injured persons by means of a newly designed wheel stretcher that could be dropped from an airplane was put to good use during the fall. A lost hunter, in serious condition from exposure, was transported 14 miles over rough terrain at an average rate of 4 miles an hour.

Word was received of the death, June 25, of retired Major General William Cary Lee, early friend and supporter of the smokejumper project (see 1940).

Gulch fire. Twelve smokejumpers and a District guard (himself a former jumper) were fatally burned in a blowup that occurred during the early evening of that fateful day. The jumpers had landed safely at 4 p.m. and were proceeding to attack the fire in the routine manner that would ordinarily have been effective. The sudden blowup trapped 16 of whom only 3 escaped. The tragedy was in no way connected with the jumping activity, and would undoubtedly have occurred had a crew of ground-transported men been caught in a similar situation.

Experiments in picking up jumpers and jumper equipment by helicopter were conducted as a part of the helicopter experiment carried on at Moose Creek Ranger Station in the Bitterroot National Forest, but these tests were inconclusive and it was planned to continue them another year.

1949

Another Busy Season — First Major Tragedy in Smokejumper History

According to the record, 1949 was the second most active year since the inception of smokejumping, being exceeded only by 1945 in total number of jumps and by 1946 in number of fires on which first attack was initiated by jumpers.

The season was exceptionally dry — approaching the critical in the southwestern part of Region 1 and definitely critical in certain sections east of the Continental Divide and in Region 4.

News events of the season are overshadowed by the tragic occurrence of August 5 on the Helena Forest's Mann

1950

Another Light Season — Smokejumpers Become Movie Actors

With minor exceptions, Region 1 was "soaking wet" all summer long and a flurry of action on Labor Day was all that brought the season's smokejumper activity above that of 1948. The Region 1 group handled 51 fires with a total of 188 jumps, of which 44 were to one fire on the Salmon Forest in Region 4, Idaho.

As in 1948, jumpers were scattered widely over the Region to obtain maximum benefit to project work, only a small crew of 20 to 50 men being held on call in or near Missoula.

During late summer Twentieth

Century-Fox began production at Missoula on a motion picture featuring the jumpers. Personnel from the smoke-jumper project took part in training and jump sequences, served as extras, operated equipment, and helped build scenery. All of this was at the expense of the motion picture company.

Other events of the year are:

1. Continuation of the helicopter experiments.
2. First use of aerial photographs for jumper spotting.
3. Completion of the section on "Aerial Attack Forces" of the Region 1 Fire Suppression Plan. Indicates need for a force of 240 jumpers.
4. Death of Jerry Verhelst of the Montana Aeronautics Commission in a Northwest Airlines crash near Butte, Montana, November 7. A former Johnson Flying Service pilot, he had flown smokejumpers on many operational and training missions in the past.

1951

A Short, Busy Season — Yellowstone Park Establishes Jumper Unit

The smokejumper season of 1951 in Region 1 started late, developed to a high peak, then dropped off almost completely — all within about a month. The total score for the Region was 644 jumps to 176 fires, but 103 of these jumps and 23 fires were in Regions 3, 4, and 5 during slack periods in Montana and Idaho. For a few days in late August, 61 Region 1 jumpers were based at Cave Junction, Oregon, for use on California fires. There was also

unprecedented use of Region 1 jumpers for fire overhead in other Regions. A total of six sector teams, each consisting of a sector boss and three foremen were loaned to Regions 3, 5, and 6.

Selected and trained by Region 1, a five-man jumper crew was installed at West Yellowstone by the National Park Service. Other activities of the season include:

1. Completion and release of the Twentieth Century-Fox smokejumper film, "Red Skies of Montana."
2. First use of a recently completed subbase at Grangeville, Idaho. During a peak concentration of lightning fires on the Nezperce Forest, a squad of jumpers operating out of this base handled the situation effectively and saved many hours of "long-haul" travel.

1952

A Flurry of Fall Activity — Ground Broken for the New Missoula Aerial Fire Depot

The Region 1 fire season was almost the exact reverse of the previous year. Burning index was relatively low, and lightning occurrence light during July and August; consequently, there was little jumper action. September and most of October, on the other hand, were extremely dry, resulting in a rash of fires that taxed the capacity of the jumper crew which is always reduced at this time of year. Fire jumps for Region 1 totaled 362, with an additional 95 in other western Regions by Region 1 jumpers. Despite the light season, jumpers were credited with a net saving of 26,000 acres and \$155,000 in firefighting costs.

food, firefighting tools, and other equipment to outfit and supply 5,000 firefighters.



During early spring, the Region 1 smoke-jumping base and fire warehousing were moved to the newly developed facilities 7 miles west of Missoula. On September 22, President Eisenhower dedicated the new base, this ceremony and the air show drawing a crowd estimated at more than 30,000.

Region 1 smokejumping was very light, second only to 1948 in this respect, with but 174 jumps to 47 fires in the Region. Except for Region 3, all regions using smokejumpers had light fire seasons. The Region 3 crew, now operating from Silver City, New Mexico, was increased to 18 and made 105 jumps to 40 fires.



SMOKEJUMPER of 1954 (right) wore a standard football helmet, with a protective mesh mask. His current suit is fire-resistant. Padding at all joints --around neck, ribs, knees, elbows, etc.--provides buoyancy that can keep him afloat in emergency water landings. Hand-activated reserve parachute is attached in front. Below it hangs his personal gear bag: sox, underwear, toilet articles, coat, fruit, candy,

etc. The larger backpack parachute is opened by static line from plane. The chute harness has quick-release fittings. A rope can be passed under the seat and through "D" rings for use should he land in a tree. The bag on jump suit leg contains 100-foot nylon letdown rope. Snug fitting leather gloves permit smokejumpers to untie knots. High-grade logging boots protect feet and ankles.

Congressional legislation authorized a \$700,000 Aerial Fire Depot at Missoula. Work began in the early fall, with the major building contracts let during the succeeding winter.

News events of the season are:

1. First use of motorability tests to measure physical ability and coordination of smokejumper candidates. Promises to be an important aid in eliminating misfits and poor accident risks.

2. Death of R. T. Freng at Palo Alto, California, on July 23. Freng, with Nick Mamer and Forester Howard Flint, established the first Region 1 air patrol in 1925 (see Background History).

The aerial delivery of equipment and supplies (paracargo) has in recent years become almost entirely a job of the smokejumpers in Region 1. During 1953 more than 200 tons of fire supplies, not including smokejumper cargo, 30 tons of treated timber for lookout towers, and lesser amounts of other material were delivered within the Region by airplane and parachute.

Other features of the 1953 season include: (1) Schooling of a special-service detachment of 12 jumpmasters in smokejumper techniques, equipment, and training, conducted at Missoula during May and June. (2) Construction of the Missoula Aerial Fire Depot continued on schedule.

1953

Busiest Season in History — All Smokejumping Records Shattered

An extremely dry July, followed by an alltime record for number of August lightning fires, gave the Region 1 smokejumpers their heaviest workout since the project started. For about 3 weeks beginning August 7, the demand for jumpers was consistently greater than the supply, and had the men been available, the record of 994 jumps to 236 fires in Region 1, plus 133 additional jumps outside the Region, would have been greatly exceeded. In addition to the above, 19 jumps were made in Region 1 by jumpers from Regions 4 and 6.

Other smokejumper units likewise experienced a busy season and the all-Service jumping totals far exceeded any previous year.

1954

Missoula Aerial Fire Depot Activated



President Dwight D. Eisenhower dedicates Aerial Fire Depot in Missoula, September 22, 1954. Depot used for housing, training, and dispatching smokejumpers; base for fire retardant mixing; and warehouse.

1955

Another easy fire season in Region 1 with only 303 jumps to 56 fires. The Region 3 crew (3 men from Region 4, 3 from Region 6, and 12 from Region 1) accumulated 123 jumps to 30 fires. These men, all experienced smokejumpers, normally report to Silver City about May 15 and return to their home Regions about July 15 in time for the peak of fire activity in the Northwest.

Region 4 has increased jumper strength to 80 men, based at McCall and Idaho City, Idaho. These units had a busy season and drew on the Missoula base for a total of 126 jumps.

1956

The Region 3 crew had a record year, 227 fire jumps by the 18-man crew.

The Region 1 season developed slowly and did not peak up seriously at any time.

Region 6 jumpers had an exceptionally active season, averaging almost 11 total jumps per man. Regions 4, 5, and 6 combined drew on the Region 1 unit for 226 jumps on 53 fires.

In January and February the Missoula Aerial Fire Depot hosted the first All-Service Air Operations Conference. This conference was followed by a smokejumper workshop at which the jumper project leaders and technicians approved adoption of two major changes

in jump equipment.

1. The H-3 harness which incorporates the Capewell release in lieu of the single-point release box, quick-adjustable leg strap fittings, and other features to improve comfort and safety.

2. A 32-foot backpack canopy (FS-5) to let the heavier men down more easily.

1957

Region 5 activated a smokejumper unit of 26 men based at Redding, California, and Region 4 expanded their two units as a part of the stepped-up protection under the "Increased Manning Experiment." The various units reported a total of 339 Forest Service smokejumpers making 3,153 jumps for all purposes, topping the previous high of 1953 by 10 jumps.

This record number appeared to result from frequent thunderstorms and fairly active seasons at all bases, rather than from unusually critical conditions in any area.

1958

Region 3 employed a yearlong foreman and increased their jumper crew to 24, made up of an eight-man squad from Region 4 and the balance from Region 1. While based at Silver City, these men made 270 jumps to 96 fires. This operation, mostly on the Gila National Forest, appears to be well established.



This is a Forest Service smokejumper descending toward a forest fire in Montana. Note steering slots at back of parachute canopy. Air escaping from the slots and three lobes or "tails"

gives the jumper an 8 mi/h forward speed. He can make a 360° turn in about 8 seconds by pulling down on one of the guidelines (see two dark-colored shroud lines).

The other jumper units experienced rather average-type seasons, but each one did have occasion to bring in outside jumpers during peaks of activity. This fact emphasizes the exceptional mobility and wide range of the smoke-jumper - in both initial attack and reinforcement.

Officers of the Province of Saskatchewan's Department of Natural Resources report that they still maintain and rely heavily upon the smoke-jumper unit initiated in 1947. This crew, now numbering 16, is trained and normally headquartered at Prince Albert Airport, moving to a base at Lac LaRonge for critical periods. This is a unique outfit. They take action upon an average of 20 fires a year on which jumping is unnecessary, usually landing on a nearby lake. But the unit is trained to jump when necessary and takes action upon an average of five jump fires a year. They use the Noorduy-Norseman as a jump plane,

exiting through a hole in the belly because of the floats. Jump gear is patterned after the equipment developed by the U.S. Forest Service smoke-jumpers.

1959

The U.S. Bureau of Land Management activated a 17-man smokejumper unit at Fairbanks, Alaska, in May 1959. The men were all experienced smokejumpers, recruited from the various Forest Service units and given refresher training at Missoula. Assuming continuation of all units on the 1959 scale, the roster of smokejumper crews will shape up about as follows for the summer of 1960:

Agency	Base	Number	Remarks
Forest Service			
Region 1	Missoula, Montana	129	Four financed by
	Grangeville, Idaho	16	Glacier Park Subbased from Missoula
Region 3	Silver City, New Mexico	(24)	Early season - detailed from other units
Region 4	McCall, Idaho	70	
	Idaho City, Idaho	20	
Region 5	Redding, California	26	
Region 6	Winthrop, Washington	40	
	Cave Junction, Oregon	30	
Yellowstone Park	West Yellowstone	5	Train at Missoula
Bureau of Land Mgmt. U.S. Dept. of Interior	Fairbanks, Alaska	17	Train at Missoula
Saskatchewan	Lac LaRonge	<u>16</u>	Headquarters at Prince Albert
Total		369	

1960

A career development program was adopted for forestry students who desired field training. They were given refresher training and then assigned to a Forest subject to recall for emergency fire duty. The fire season was difficult and these men were called in for smokejumping along with men from other Regions. For years Region 1 had loaned jumpers where critical fire conditions warranted and, for the first time, in 1960 it was necessary to call for help from other Regions.

This year all smokejumpers were equipped with the newly approved and tested white nylon jump suits.

The television program, "You Asked For It," produced a short picture on smokejumping, in which the highlights were given on training and the actual jumper attack with the Ford tri-motor.

One hundred 32-foot (FS-5) parachutes were purchased and later overhauled to meet the FS-5A specification.

Walt Disney produced a television picture, "A Fire Called Jeremiah," on smokejumping and firefighting at Missoula. The Johnson Flying Service furnished a C-46 aircraft for smokejumping and cargo dropping. The ship hauls 24 smokejumpers and their firefighting equipment.

Twenty smokejumpers were detailed in June to Fairbanks, Alaska, to supplement the Bureau of Land Management 24-man jumper base on a recall basis for Region 1, beginning July 1.

A crew of six smokejumpers jumped on the Crooked Creek fire with four of the one-man flail trenchers and gave them a thorough shakedown on a going fire.

1961

A total of 150 FS-5A parachutes were purchased as replacements for chutes destroyed or seriously damaged on fires. A higher percentage of personnel parachutes were damaged this year due to the severe fire season, and a record was established with a total of 1,938 jumps; 1,446 were jumps made in Region 1 and 492 were out of the Region. The previous high was 1,131 jumps in 1953.

The fireproof orange-colored shirts were adopted by Region 1 as standard equipment for all smokejumpers and special 25-man inter-Regional crews.

Region 1 increased the smokejumper organization to 171 men.

A 25-man fire suppression crew was established and set up at Ninemile for inter-Regional use. This crew was well trained and was successful in firefighting. It was used in several Regions.

1962

The Yellowstone National Park organization was increased from five to nine men. The additional jumpers were to cover parts of Regions 2 and 4.

A second inter-Regional, 25-man fire suppression crew was established and based at Adams Ranger Station on the Nezperce Forest.

The first jump on a forest fire in Colorado was accomplished by two men from Missoula in September.

Twenty smokejumpers were detailed to Fairbanks, Alaska, to supplement the Bureau of Land Management 24-man jumper base.

L. M. (Locke) Stewart, Air Operations Officer for Region 1 for the past 12 years, died on December 8, 1962, from a cerebral hemorrhage.

Eleven smokejumpers were detailed to other Regions, and 20 men to the Bureau of Land Management in Alaska.

Henry J. Viche was named Air Operations Officer.

1964

1963

On August 4, the Region set a new record for total jumps in 1 day: 105 jumps to 34 fires.

On September 28, due to unseasonably warm and dry weather, a late fire season period developed. The number of jumpers remaining in the organization was not sufficient to handle the fire requests. A call was made to colleges and universities in Montana, Idaho, and Washington, requesting smokejumpers return to Missoula to assist in the fire situation. The men and the schools were very cooperative. The following morning 86 jumpers were available at the Missoula base. From September 20 to October 4, smokejumpers made 130 jumps to 24 fires. The last jump of the 1963 season was on October 11.

The 1963 season saw the adoption of the "D-Bag" as a standard type parachute deployment. Plastic water containers, battery-operated cargo locaters, and fiberboard containers were all new equipment items adopted for use.

A third inter-Regional 25-man fire suppression crew was organized. It was based at Trapper Creek, in the Bitterroot National Forest.

Heavy June rains caused extensive flood damage in the Lewis & Clark and Flathead National Forests. Rains continued through August; below normal temperatures prevailed until October. Smokejumper activity was the lightest since 1954: 348 jumps on 68 fires. The first jumper fire of the season was on July 3; the last jumper fire was October 25.

The largest single action of the year involved 60 jumpers on the Parsnip Mountain fire in the Kootenai National Forest. The effectiveness of smokejumpers as a mobile, initial attack force was demonstrated August 9 when a fire in the Gallatin National Forest (250 air miles from Missoula) was manned by 12 jumpers 2 hours and 15 minutes after the call was received at the Aerial Fire Depot in Missoula.

Five jumpers were dropped on a fire in the Shoshone National Forest. This was the second Region 2 fire manned by smokejumpers from the Missoula base.

Due to the light fire season, smokejumpers were used extensively as project crews for over 44,000 man-hours of work on the various Districts.

Air Force personnel, connected with the X-15 Rocket Recovery program, attended a 2-week training session at the Missoula base. The course was designed to qualify men to parachute in rough terrain and timber on rescue missions.

Fifteen Federal Aviation Agency District Safety Inspectors completed an 80-hour course in parachute rigging at the Missoula Aerial Fire Depot.

Smokeyjumpers from Region 1 and Region 4 were detailed to Region 3, as in former years. A 20-man contingent was assigned to the Bureau of Land Management in Alaska for 1 month.

1965

Heavy rains throughout the summer resulted in a very light fire season. The lowest number (322) of fire jumps since 1955 were made in Region 1. The most active period was July 21-31, with 126 jumps to 40 fires. Only 666 acres were burned within the Region. This is the lowest burned acreage ever recorded in this Region.

Region 1 operated the Inter-agency base at West Yellowstone. Previously, the base was operated by Yellowstone National Park. Eight smokejumpers were assigned to the base with headquarters in the Airport Terminal Building. Only one fire was manned. In December, a contract was awarded for construction of the center. Facilities will include loft-warehouse office, 16-man dormitory, retardant plant, paved access road, taxiway, and parking area. Cooperating in financing the base are: U.S. Forest Service - Region 1; U.S. Forest Service - Region 2; U.S. Forest Service - Region 4; Yellowstone National Park; Grand Teton National Park; Bureau of Land Management; Bureau of Indian Affairs; Bureau of Sport Fisheries.

Twelve jumpers were detailed to Region 3 for the period May 15-August 1. A 20-man crew was assigned to the Bureau of Land

Management, Alaska, for the period May 29-July 28. Missoula-based jumpers were dispatched several times during the season to assist Region 6.

Personnel trained two groups of Federal Aviation Agency Inspectors for FAA Senior Parachute Rigger certificates.

Personnel from the U.S. Air Force X-15 Rocket Recovery program were trained in the fundamentals of spotting, cargo dropping, parachute retrieving, and jumping into rough mountainous terrain.

The activity of the Grangeville subbase was near normal with 95 jumps to 35 fires.

1966

It was a long, steady fire season. Smokejumpers made 1,564 jumps to 355 fires throughout the West, including Alaska.

First action of the season was May 7 and continued until October 4. The Region had 185 smokejumpers. This included eight stationed at the West Yellowstone (Montana) Interagency base. This small unit of smokejumpers made 91 jumps to 42 fires. In addition to fire jumps, 34 fires were manned by 268 men who reached the fires by ground transportation. Smokejumpers performed an alltime high 70,000 man-hours of fire suppression work.

Out-of-Region details consisted of 12 men to Region 3 for the period of May 12 through July 15 and 20 men to the Bureau of Land Management at Fairbanks, Alaska, May 28 to the last of July.

Special spotting and timber jumping technique training sessions were conducted at the Missoula Aerial Fire

Depot for U.S. Air Force rescue personnel assigned to the X-15 Rocket Recovery program. The fourth class of Federal Aviation Agency personnel was given 2 weeks of training in parachute rigging.

Producers of the "Lassie" television program used local facilities for many of the sets in a fire control episode.

Vice President Humphrey, Senator Lee Metcalf, and Representative Arnold Olsen were given a personal tour of the smokejumper base.

Construction was started on operating facilities at the West Yellowstone Interagency base.

1967

The 1,687 jumps to 371 fires set a new record for the use of smokejumpers within the Region's area of responsibility. The demand for smokejumpers was so great that personnel from Regions 4, 5, and 6 were detailed to assist the Region. For the first time in history, smokejumpers from the Bureau of Land Management base at Fairbanks, Alaska, were used.

The Region's total number of smokejumpers was increased to 188 in order to have a full complement of 13 smokejumpers stationed in the new facilities at the Interagency Fire Control Center at West Yellowstone, Montana. The largest class of new recruits (92) started training on June 5. Seventy-four completed the course.

Records were established in the total use of Region 1 jumpers throughout the West. They worked over 90,000 man-hours on fire suppression, made 2,220 jumps to 527 fires. The complement of 17 smokejumpers stationed at the

satellite base at Grangeville, Idaho, made 257 jumps to 80 fires.

As in the past, special training sessions were conducted for the U.S. Air Force rescue personnel and parachute riggers of the Federal Aviation Agency.

Chief Pilot Floyd O. Bowman, who had worked in Region 1 for over 20 years, died in August after a short illness. Frank A. Borgeson was appointed as replacement.

1968

The late spring and heavy summer rains that began August 14 kept the Region's fire danger at a low level. Out-of-Region activity in Regions 3, 6, and Bureau of Land Management-Alaska accounted for 67 percent of the unit's jumping activity. Records were established with 57 smokejumpers at one time in Region 3. A record of 107 smokejumpers on assignment to BLM-Alaska was also established.

Turbo-Porter and Twin Otter airplanes were used by this unit for jumping for the first time.

Frank Deery, the original developer of smokejumping methods and parachute equipment, inventor of the Deery slots for steering parachutes, died at Big Fork, Montana, on August 2, 1968.

The palletized roller system was adopted as standard equipment for DC-3-cargo-dropping missions.

Turbine-powered helicopters became a part of the Region's contract air fleet.

1969

The fire season was more severe than 1968, had some of the characteristics of the 1967 season, but there were few August and September thunderstorms on west side National Forests. There were few simultaneous lightning fire starts. This resulted in low smokejumper activity in the Northern Region.

Out-of-Region activity was above average. Crews were again assigned to Region 3 (Southwest) and the Bureau of Land Management in Alaska. The Flathead Indian Agency discontinued the financing of four smokejumpers, previously recruited, trained, and stationed at the Missoula Aerial Fire Depot for use by the Indian Agency.

E. R. DeSilvia, Chief of the Division of Fire Control; John E. Nash, equipment specialist; and Harry D. Shryock, project clerk, completed long Forest Service tours of duty and retired during the year. William R. (Bud) Moore replaced DeSilvia as Chief of the Division of Fire Control.

The Ford Tri-Motor and Travelair airplanes were retired from use. The Twin Otter, Beechcraft E-18's, B-17 Flying Fortress, and PB4Y2 air tankers became a formal part of the Region's air fleet. The T-10 parachute was tested, found satisfactory, and adopted for Service-wide use.

Missoula-based smokejumpers participated in the filming of two "Wild Kingdom" television programs in western Montana.

The first fire jump in the Northern Region was June 6, in the Nezperce National Forest of Idaho. From July 15 on, action was continuous, but no large fire busts occurred until the latter part of August. The last fire jump for the season was October 2 on the Kootenai.

The Grangeville, Idaho, subbase was activated with 17 jumpers the first part of July. The West Yellowstone base, with 12 jumpers, was put in operation in mid-June.

As in previous years, 12 Northern Region jumpers were stationed at Silver City, New Mexico; and 25 jumpers were stationed with the Bureau of Land Management at Fairbanks, Alaska. Additional jumpers were dispatched from Missoula to assist these bases during bust periods.

During the peak of Region 6's extreme fire emergency, 111 Northern Region smokejumpers were on duty in Washington and Oregon. During this period, 397 jumps were made to 137 fires in Region 6. Seventy-eight jumpers were dispatched as organized crews to the Safety Harbor Fire at Wenatchee. Northern Region smokejumpers accumulated 20,832 man-hours in Region 6 during this fire emergency.

The 1970 total for all fire assignments was 1,354 jumps to 439 fires. Ground action consisted of dispatching 324 jumpers to 24 fires. One hundred thirty jumpers were dispatched as organized crews to 7 fires in the Northern Region. On all fire assignments, smokejumpers logged 62,753 man-hours.

The kitchen at the Aerial Fire Depot was changed from contract meals to Government-operated. Large numbers of transient fire crews were fed daily during the going fire season. As many as 800 meals were served in 1 day.

Due to a cut in financing, the number of smokejumpers was cut from a total of 190 to 170 jumpers. Only 20 new smokejumpers were trained. This was an alltime low for new trainees.

1970

Hank Viche retired as Northern Region Air Officer. Bob Robertson, Regional fire coordinator, was promoted to this position. Chuck Kern was transferred from the Gallatin as the new fire coordinator. Dwight Smith, smokejumper foreman, resigned to go into private business.

Additional T-10 parachutes were put into service. The present 5A's may be phased out on a replacement program. The Northern Region will continue evaluation of the T-10 during the 1971 season. The "French Cross" cargo chute was used on an experimental basis with good results, and it was proposed to build additional chutes in the loft during the winter months.

The jumper base in Region 5, at Redding, California, experienced a fatality during a fire jump. This was the first fatality in actual jumping in smokejumping history.

The Washington office produced a training film in Regions 1 and 6 entitled "Crew Boss." Len Krout, supervisory fire technician from the Northern Region Parachute Project, was the star.

At the Missoula Aerial Fire Depot, 1970 was a big year for visitors. Approximately 5,000 visitors toured the facilities.

Another first occurred when the smokejumpers formed a union under the auspices of the American Federation of Government Employees. Contract negotiations were carried out in the spring. Smokejumpers up to GS-10 were eligible to join. Much interest was portrayed in the movement.

The smokejumpers, for the first time since 1951, received time and a half for overtime.

Northern Region smokejumper made 1,094 jumps to 302 fires on all fire assignments and from all bases during the 1971 season. This accounted for 38,659 man-hours on jumper-type fires. Smokejumpers from other Regions made an additional 89 jumps while on detail to the Northern Region or to the Southwestern Region subbase at Silver City, New Mexico.

Use of smokejumpers as organized ground crews accelerated--690 smokejumpers were dispatched to 63 fires, both in and out of the Region, as ground-attack personnel for 22,413 man-hours on fire suppression work. The total man-hours charged to fire suppression was 62,072.

A temporary subbase was established at Lewistown, Montana, to aid the Bureau of Land Management during a rash of fires in that area. Smokejumpers were dispatched by parachute and as ground crews. A large volume of fire equipment and supplies was delivered by air. This new, cooperative interagency fire-suppression venture proved satisfactory.

Steve Clairmont and Bill Hicks served as crew bosses for the Northern Region's first all-girl fire suppression crew. The crew was used primarily for mopup work on the Bull River fire in the Kaniksu National Forest.

An infrared "mini-scanner" was installed on both Twin Beech aircraft at the Aerial Fire Depot. The scanner was used in locating small fires not smoking enough for visual detection. Two fires located by the scanner were manned by smokejumpers. A special wilderness fire pack of freeze-dried foods was designed to reduce the pack-out weight load in these roadless areas.

The Forest Service's Washington Office designated the T-10 parachute--the official parachute for smokejumping. The present stock of FS-5A's will be phased out.

Johnson Flying Service of Missoula,

1971

Montana, purchased a Lockheed Electra. It has 93 seats and cruises at 350 miles an hour. With the increased inter-Regional exchange of crews, this aircraft should prove very useful.

Earl Cooley, who made the first fire jump in July of 1940 with Rufus Robinson, transferred from the parachute project superintendent position to the Division of Fire Control as an equipment specialist. Leonard Krout was appointed acting superintendent until the position is filled. Harold Roberts, veteran smokejumper foreman, transferred to the Kootenai National Forest as forest dispatcher. Smokejumper Clifford Johnson drowned in the Bitterroot River while swimming during off-duty hours. Russell Kregar, smokejumper dormitory maintenance man, retired in March.

The King Aircraft was transferred, with its infrared equipment, to the Northern Region Aerial Fire Depot from the Northern Forest Fire Laboratory and was used in fire detecting in the western United States.

1972

Emphasis on reducing the size of the Northern Region headquarters staff resulted in the Grangeville, Idaho, base being placed under the administration of the Nezperce National Forest and the West Yellowstone, Montana, base under the administration of the Gallatin National Forest. The Grangeville base was staffed with 17 smokejumpers, and West Yellowstone had 13 jumpers. The Missoula Aerial Fire Depot base was reduced to 125 active smokejumpers. Neil Walstad, Foreman, and Phil Pittman, Squadleader, were transferred to Grangeville. Barry Hicks, Foreman, and Bill Werhane, Squadleader, were transferred to West Yellowstone.

Reorganization of the Division of Fire Management resulted in other changes in the Parachute Project. Richard Baldwin was transferred to the Aerial Fire Depot as Complex Manager, with the Parachute Project, Air Operations, Fire Warehouse, and Regional Fire Coordinator under his jurisdiction. Len Krout was named Parachute Project Superintendent.

Northern Region smokejumpers made a total of 1,397 jumps on more than 400 fires in the five-State Region. Missoula-based jumpers made 1,222 jumps on 403 fires and worked a total of 39,244 fire suppression hours. Jumpers, assigned to the Missoula base from West Yellowstone and other bases in the Region, made an additional 39 jumps. From the Grangeville, Idaho, base, jumpers made 130 jumps on 63 fires, involving a total of 6,180 fire suppression hours. From West Yellowstone, jumpers made 33 jumps on 13 fires.

Ron Curtiss, Smokejumper Foreman, was transferred to the Canoe Gulch Ranger Station, Kootenai National Forest, as Fire Control Officer. Larry Nelsen was promoted to Chief Foreman at the Aerial Fire Depot, with responsibility for training and loft operations. Larry Eisenman was promoted to Training Officer. Foreman Frank Sanders headed up the annual detail to Silver City, New Mexico, in Region 3 and took a jump detail to Region 5 (California) in the fall. The crew detailed to Region 3 was in Silver City approximately 3 months, and the assignment in California lasted 2 months. Northern Region jumpers made 250 jumps in Region 3, 82 jumps in Region 5, and 139 jumps in Region 6 (Oregon and Washington). A total of 441 jumps were made in Alaska, for the Bureau of Land Management, by backup crews from Missoula. The Northern Region assigned 75 smokejumpers to Fairbanks, Alaska. Some of the jumpers were in Fairbanks as long as 38 days.

A total of 919 refresher and training jumps were made from the Missoula base.

The Missoula base added a DeHaviland Caribou plane under contract. With a 20-jumper capacity and tailgate dropping ability, the DeHaviland Caribou proved very satisfactory. Grangeville had a Twin Otter, and West Yellowstone a DC-3. Fixed-wing aircraft flew 9,669 hours, and helicopters 1,533 hours in all activities.

1973

The Northern Region experienced one of the driest seasons on record, with 1,806 fires consuming approximately 30,000 acres at a cost of approximately \$16 million. The first jumper action was May 16 on the Bitterroot National Forest. The fire season grew in intensity, reaching its peak in mid-August. It didn't subside until early September. Missoula's 125 smokejumpers proved their merit through this difficult period with an all-out response, attested to by an unprecedented number of complimentary letters from Forest Supervisors.

Missoula-based smokejumpers made a total of 1,386 jumps to 272 fires. Jumpers from outside the Region, including a contingent from the Bureau of Land Management in Alaska, made 111 of these jumps. The Aerial Fire Depot base in Missoula was out of jumpers on several occasions due to the heavy demand. Additional fires could have been manned had jumpers been available.

Practice jumps totaled 878 at Missoula; 19 new smokejumpers were trained at the Aerial Fire Depot.

Ground activity included 729 jumpers dispatched to 47 fires as organized crews and overhead. This was an alltime record. Smokejumpers worked a total of 60,481 fire suppression hours on all fire assignments. Len Krout,

Aerial Fire Depot Project Superintendent, served on a Regional I top overhead team on three campaign fires, once as a fire boss.

Temporary subbases at Libby and Kalispell were highly successful. More temporary subbases are planned for the future. Grangeville-based jumpers made 119 jumps to 50 fires. Jumpers from the West Yellowstone base made 100 jumps to 39 fires. The Aerial Fire Depot was the hub of fire coordination and supply. The base operated 24 hours a day. The Regional Office Coordinating Organization was put into effect and many fire overhead and crews were recruited from outside the Region. Additional aircraft were called in to ferry crews, air freight, fire overhead, and for use as air tankers. A total of 698,100 gallons of chemical fire retardant was flown out of the Missoula base for use on 139 fires. Approximately 30,000 meals were served by the kitchen at the Aerial Fire Depot. During the emergency period, the kitchen operated on a 24-hour basis.

Richard Baldwin, Aerial Fire Depot Complex Manager, retired; Bob Robertson was transferred to the position. Homer W. "Skip" Stratton, Fire Management Branch Chief in the Division of Fire Management, and former smokejumper retired.

1974

Missoula Aerial Fire Depot smokejumper activity began on June 19 and ended October 31. It was a long season. August was one of the slowest on record with only 33 fire jumps from the Missoula base.

Northern Region jumpers made 303 jumps to 105 fires from the Silver City, New Mexico, base in the Southwestern Region. The Southwestern Region grand

total was 346 jumps to 117 fires, the most active season since 1961. The Northern Region jumpers assigned to Alaska for the Bureau of Land Management had a normal season: 148 jumps to 81 fires. In addition, a crew was sent back to Fairbanks, Alaska, in early August for another 19 jumps to 7 fires.

The West Yellowstone, Montana, center experienced a record year. The Interagency Fire Control Center recorded 225 jumps to 44 fires. Of these jumps, 132 were made by Missoula smokejumpers. Missoula sent a total of 14 booster crews to the West Yellowstone center at critical peak periods. The Grangeville, Idaho, base made 100 jumps to 35 fires.

Missoula-based jumpers made a total of 1,306 jumps to 377 fires on all assignments for an average of 11.3 fire jumps per man. Ground activity involved 335 men on 39 fires. The Northern Region dropped the first fire line blasting team on a going fire this season. Donal "Bud" Clarke, smokejumper squadleader, lead the project on the Outlaw Fire near Roundtop in the St. Joe National Forest. The program was successful, and more fire line explosives action is expected in the future.

Missoula jumpers manned a fire out of a subbase in Vernal, Utah; a first. The Intermountain Region later manned the base for the remainder of the season.

Herb Oertli, Chief Dispatcher, and Al Hammond, both oldtime smokejumpers, retired. William R. "Bud" Moore, Director of Fire & Aviation Management for the Northern Region, retired in June and was replaced by Ed Heilman.

The Northern Region experienced one of the slowest fire seasons of record in 1975. The 577 fires consumed 592 acres.

Missoula smokejumpers made only 244 jumps to 88 fires throughout the West, accumulating 7,288 man-hours on fire. In addition, 294 men were dispatched to 18 ground fires for 15,342 man-hours. Forty-six of the fire jumps were made from the Missoula base to nine fires under the Northern Region protection. West Yellowstone, Montana, center smokejumpers made 47 jumps to 16 fires. The Grangeville, Idaho, jumpers made 54 jumps to 23 fires. The Northern Region crew, Silver City, New Mexico, made 68 jumps to 24 fires. A late crew dispatched there in August made an additional 45 jumps to 17 fires.

For the first time since 1959, the Missoula Aerial Fire Depot did not furnish a smokejumper contingent to the Bureau of Land Management in Alaska. This assignment was jointly filled by Intermountain and California Region jumpers.

Twenty jumpers from the Missoula base were stationed in McCloud, Calif., from late August through October. They functioned as an interregional fire crew. They made 43 jumps to 17 fires from the smokejumper base at Redding, California. From the subbase established at Ashland, Montana, for the Custer National Forest, no jump action was taken, but two fires were manned, one by helicopter and the other by ground vehicle.

Because of the slow fire season, smokejumpers accomplished approximately 32,000 man-hours of project work for Northern Region National Forests.

A training cadre of smokejumper personnel was established at the Missoula Aerial Fire Depot to provide training courses and expertise to the Region's Forests and cooperation in fire and aviation management.

Earl Cooley, who made the first actual fire jump with Rufus Robinson in 1940,

1975

retired from the Regional Office, Fire and Aviation Management, in June.

1976

The Northern Region experienced another slow fire season: 818 fires burned 2,526 acres. The season was well below the Regional average of 1,225 fires burning 5,500 acres.

Missoula-based smokejumpers made 518 jumps to 122 fires throughout the West. Much of 16,000 man-hours of ground action was from the Bureau of Land Management helitack subbase in Grand Junction, Colorado.

Jumpers from the Grangeville, Idaho, base made 40 jumps to 16 fires. Interagency Fire Control Center jumpers, West Yellowstone, Montana, made 132 jumps to 24 fires and participated in 1 rescue mission. The crew based in Silver City, New Mexico, made 172 jumps to 64 fires.

The fire season began early. Twelve jumpers were dispatched April 24, as a backup crew, to the smokejumper base at Tri-Cities, Tennessee. Due to a relatively light Northern Region fire season, much of the fire activity was out-of-Region. For the first time in history, Northern Region smokejumper ground crews were sent to Minnesota and Michigan.

The last fire of the season was November 12 in the Lolo National Forest.

Len Krout, veteran smokejumper and the Parachute Project Superintendent, retired in August.

Emphasis in training was directed to "the man in the smoke." The Regional Training Cadre, composed of some of the

Aerial Fire Depot personnel, made a major contribution to the National training effort in preparation of the Service, Plans, Basic and Intermediate Air Operations, and Air Service Officer Training package.

The Regional Training Cadre, headed by Larry Eisenman, conducted 16 training courses (involving 507 participants) in fire behavior, sector boss, crew boss, basic air operations, helicopter manager, and Forest Air Officer. The Cadre also assisted in Guard School training and conducted individualized helitack and helicopter management courses so that Forest firemen could put on high-quality courses on their units.

Late in 1976, Larry Eisenman was selected as the Region's Parachute Project Superintendent.

1977

The West experienced a severe drought in 1977. Most of the severe fire activity was in Oregon and California. Missoula dispatched backup crews to McCall, Idaho; Boise, Idaho; Redding, California; Cave Junction, Oregon; LaGrande, Oregon; Winthrop, Washington; Redmond, Oregon; Fairbanks, Alaska; West Yellowstone, Montana; and Grangeville, Idaho. Missoula jumpers established a subbase at Fresno, California. No fire action was taken; the crew later moved to Redding, California, for the severe fire period.

Northern Reigon jumpers made a total of 1,236 fire jumps to 371 fires for 34,000 man-hours on all assignments. Ground action was taken on 18 fires: 317 men; 10,000 man-hours. West Yellowstone jumpers made 71 jumps to 19 fires and participated in 6 rescue operations. Grangeville jumpers made

106 jumps to 41 fires. Northern Region smokejumpers at Silver City, New Mexico, made 148 jumps to 50 fires. Fire activity was about average in the Region. A total of 1,107 fires burned 7,880 acres. Dry lightning storms were few; smokejumper action was slow. The first fire action was April 25; the last fire was manned September 13.

The smokejumper training staff conducted 22 Fire and Aviation Management courses for 691 students. New firsts this year included courses for the Intermountain Region, Bureau of Land Management, Alaska, and the State of Minnesota. The training staff assisted with development of Sector Boss, Intermediate Air Operations, Camp Officer, Basic Business Management, and Ground Tanker Dispatcher courses.

Lowell Hanson was promoted to Training Officer, Bill Meadows to Air Operation Training Specialist, and Ron Pierce to Fire Training Specialist.

Fire and Aviation Management established a new Business Management organization at the Aerial Fire Depot. Bill Ward was named Administrative Officer.

1978

Region 1 experienced a very light fire year in 1978 with 688 fires burning a total of 1,707 acres. Missoula-based smokejumpers made 262 jumps to 52 fires. West Yellowstone jumpers made 89 jumps to 22 fires, and Grangeville jumpers made 80 jumps to 28 fires. The Northern Region smokejumpers on detail to Region 3 in Silver City, New Mexico, made 130 jumps to 47 fires. A total of 28,500 hours accrued in all fire suppression activities.

The training cadre at the Aerial Fire

Depot conducted 35 training sessions with 914 students in attendance.

In conjunction with the Missoula Equipment Development Center, Region 1 tested, evaluated, and approved the Beech King Aircraft for smokejumper and paracargo use.

Also, testing was done on the XP-5 parachute. This new canopy, designed by smokejumpers, reduces the rate of descent and increases maneuverability. Hopefully, the XP-5 will lower the frequency of smokejumper accidents.

1979

Region 1 smokejumpers were very active in 1979. The Region had a total of 1,784 fires which burned 12,663 acres. Missoula-based smokejumpers made 1,031 jumps to 147 fires. West Yellowstone jumpers made 122 jumps to 38 fires. Grangeville jumpers had their most active season on record, making 282 jumps to 106 fires. The Silver City, New Mexico, crew made 87 jumps to 27 fires. Over 65,000 hours accrued in fire suppression activities.

Development continued on the XP-5 parachute. It was tested 464 times (379 training and 85 fire). This parachute has proven to be an effective tool in reducing landing injuries through a reduced rate of descent. Expanded use is planned for the 1980 season.

The Aerial Fire Depot worked with the Missoula Equipment Development Center to evaluate a high-level paracargo delivery system. This system shows promising results and should be operational at least on a limited basis for 1980.

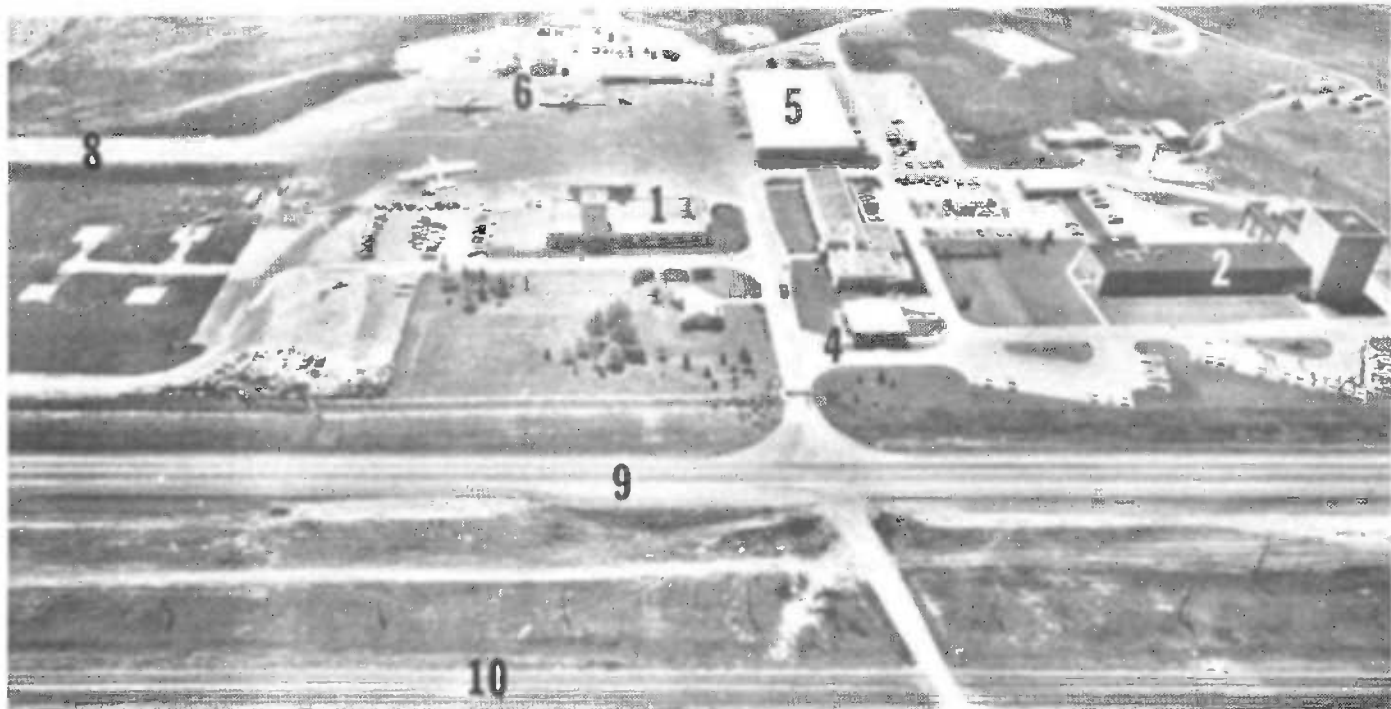
The training cadre at the Aerial Fire Depot trained 590 students in aviation and fire courses.

The following tabulation is based on recorded official jumps (training, fire, rescue) by the Forest Service smokejumpers throughout the United States.

<u>Year</u>	<u>Number of Jumpers</u>	<u>Number of Jumps</u>	<u>Cumulative</u>
1940	12	99	99
1941	26	193	292
1942	42	331	623
1943	76	960	1,583
1944	129	1,246	2,829
1945	220	2,741	5,570
1946	232	2,276	7,846
1947	250	2,124	9,970
1948	267	1,662	11,632
1949	266	2,264	13,896
1950	250	1,465	15,361
1951	276	2,528	17,889
1952	267	2,060	19,949
1953	275	3,143	23,092
1954	284	1,956	25,048
1955	307	2,430	27,478
1956	290	2,816	30,294
1957	339	3,153	33,447
1958	345	3,475	36,922
1959	315	3,128	40,050
1960	321	3,779	43,829
1961	349	4,956	48,785
1962	350	3,582	52,367
1963	353	4,319	56,686
1964	351	3,283	59,969
1965	389	3,767	63,736
1966	396	5,966	69,702
1967	425	7,358	77,060
1968	427	5,785	82,845
1969	419	5,663	88,508
1970	446	6,188	94,696
1971	446	6,214	100,910
1972	403	6,419	107,329
1973	403	6,599	114,928
1974	420	7,248	122,176
1975	441	6,604	128,776
1976	438	6,619	135,395
1977	441	7,198	142,593
1978	415	4,704	147,297
1979	380	6,690	153,987

Year of most jumps. 1967
 Number of jumps. 7,358

Year with most smokejumpers . 1970
 Number of smokejumpers . . 446



Forest Service Aerial Fire Depot (1), 7 miles west of Missoula; Northern Forest Fire Laboratory (2); Smokejumper Dormitory (3); Visitor Center (4); Fire Depot warehouse (5); chemical fire retardant mixing plant (6); smoke jumper training area (7); airplane taxi strip connecting to Missoula County Airport to left of picture (8); highway to Missoula (9); Burlington Northern mainline tracks (10).