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RUSSIAN FEDERATION FIRE 2002 SPECIAL

PART II

The Fire Season 2002 in Russia
Report of the Aerial Forest Fire Service *Avialesookhrana*

The Aerial Forest Fire Service of Russia *Avialesookhrana* includes 24 regional airbases across the Russian Federation and a fleet of 102 aircraft. The total area under protection comprises 690 million hectares (ha) including 12,9 million ha of reserved forests. There are about 270 subdivisions in the structure of *Avialesookhrana* that are responsible for organization of reconnaissance, combat and monitoring wildland fires. Before the start of the 2002 fire season contracts were signed to lease 257 airplanes and helicopters out of which 120 are small planes with a capacity of carrying 6 smokejumpers, four planes with a payload capacity of 5000 kg of cargo or 20 firefighters, 40 light helicopters and 93 helicopters Mi-8 to carry up to 4000 kg of cargo, or to operate helibuckets for aerial fire suppression including the use of retardants. The size of this mixed fleet of leased aircraft was calculated based on an expectation of a level of low fire danger in 2002. More than 3800 firefighters (smokejumpers and helirappellers) were trained to be ready for fire suppression in 2002.

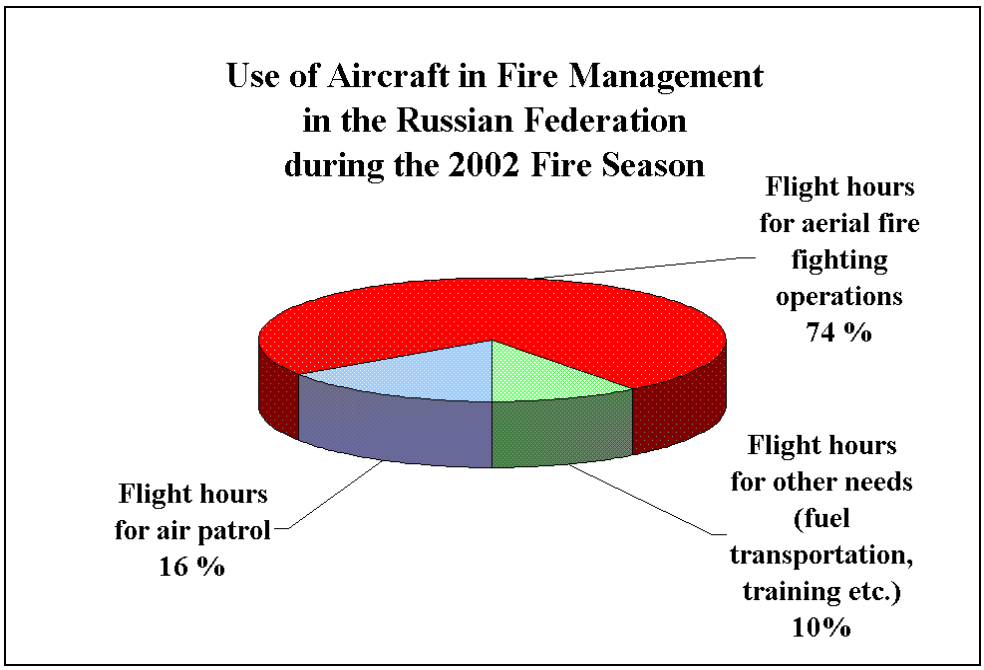

Figure 1. Use of aircraft in fire management in the Russian Federation during the 2002 fire season.

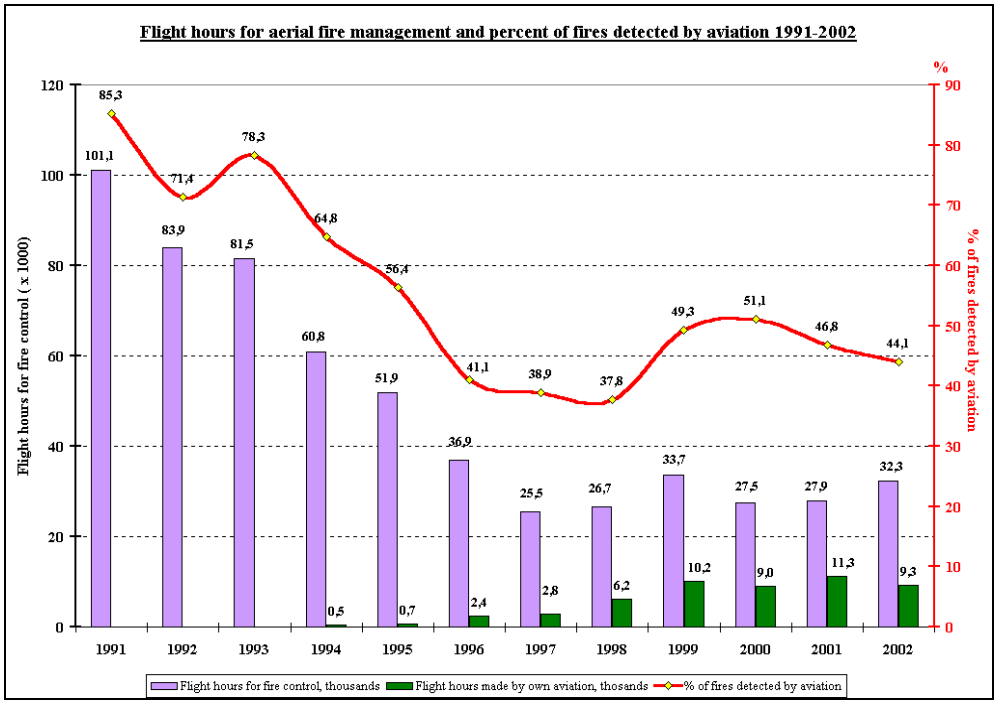

Figure 2. Flight hours for aerial fire management and percent of fires detected by aviation 1991-2002.

The 2002 fire season in Russia, however, turned out to be extremely severe. During the period between April and October 35,800 fires were recorded on the territory under the jurisdiction of *Avialesookhrana*. According to the survey reports of the local branches (subdivisions) of *Avialesookhrana* the area affected by fire was 1.2 million ha forest land and 0.634 million ha non-forest land. To remind at this stage: The record of the number of fires registered in the recent past was 36,500 in 1998. The main causes of fires in 2002 were:

- Local population – 58 %
- Lightning – 12 %
- The rest – 30 % were from power lines, real routes, and unknowns.

About 44 % of the fires that occurred in forests under the jurisdiction of the Ministry of Natural Resources were detected by patrolling aircraft. For comparison, in the 1980s the percentage of fires detected by aerial patrols was about 80%.

In the 2002 fire season 995 fires were designated as large fires (size >200 ha).

The outbreak of extended fires started in April - May on the territory of the Far East region, mainly affecting the Republic of Yakutia, and Khabarovsk and Chita Regions. On some days the fire authorities of Khabarovsk Region alone had to respond to 255 fires daily. Special attention was paid to protection of towns and villages to prevent homes and populations from fires. Hundreds of firefighters from various different airbases were sent to assist fire battles in Yakutia, Chita and Khabarovsk. For example, about 600 smokejumpers and helirappellers were ferried to Yakutia's hot spots. Two amphibian scoopers Beriev-12 (capacity: 6000 litres) were deployed to help the Yakutian firefighting forces to attack fires from the air. Nearly 350 drops of water (2100 tons) helped to stop 21 km of fire edges. Weather conditions in Yakutia were extremely unfavourable to get fires under control. As a consequence 151 fires spread to the size of the large category. The main reason of flames were agriculture burns in spring (May) and lightning in summer (July, August).

According of satellite data fires in Yakutia have passed nearly 5 million. ha (source: satellite data from the Institute of Forest, Krasnoyarsk, 2002).

At the same time dry and hot weather conditions resulted in large amounts of forest fires in Tuva Republic. The main reason of fires were escaped prescribed fires set by local people on the mountain slopes to collect wild deer antlers for selling them to the Asian market, mainly to China, and to manage pasture lands. Out of the total of 481 wildfires 129 large fires burned about 1 million ha (source: satellite data from the Institute of Forest, Krasnoyarsk, 2002).

In the second part of the summer (July, August) and beginning of fall (September) high the European area of the Russian Federation experienced high fire danger, notably in around Sankt Peterburg (Leningrad Oblast), Novgorod, Vologda, Tver, and Moscow Regions. Fires were mainly caused by visitors to forests who collected berries and mushrooms, and hunted wild game. In August alone about 11,300 fires (31 % of the annual total) were registered. Moscow Region suffered 1900 wildfires in forests and in bog lands. The smoke of peat fires disturbed millions of people. Many people suffered respiratory infections, asthma attacks and had to be taken to hospitals. There are no exact data available on chronic obstructive pulmonary diseases and cardiovascular diseases.

In addition to their fire management tasks the regional airbases were involved in pest and disease control. For these purposes more than 500 million ha of forests were covered by aerial observation during the 2002 fire season. That helped to discover the serious insect infestation spots in the beginning of their activity and to provide required response in due time. Over 50 special expeditions, including specialists of *Avialesookhrana* and Forestry Departments, were dispatched by aircraft to explore surveillance spots. Many regions have extreme pest and disease problems that requires special attention of the State Forestry Service and affiliated Institutions.

A total of 32,200 flight hours were flown during the season by *Avialesookhrana*'s own and leased aircraft for fire management and pest and disease control. This number corresponds to just 30 % of the annual flight hours in the early 1990s. Thanks to own aviation over 2000 fire fighters were sent from base to base to assist on fire fighting. But there still were unresolved problems of financing aerial operations that would ensure the timely, early detection of wildfires instead of delayed detection that resulted in delay of response.

During the fire season of 2002 new fire fighting equipment has been tested and used in wildfire suppression, e.g. pumps, drip torches, fire engines and the foam injection system SPS-1 used in the VSU-5. Two Hot Shot Crews that had been trained by U.S. Forest Service instructors worked across Siberian fires. A new type of parachute *Lesnik*-3 (Arbalet) was tested and approved for future development and use in aerial operations under a joint interagency programme with the Ministry of Emergency Situations (EMERCOM).

International exchange programmes with the U.S. Forest Service and the U.S. Bureau of Land Management (BLM), the Forest Services of Canada and China, and the Global Fire Monitoring Center (GFMC) helped to share information and modern technologies to address wildland fires as a global problem.

For the future an effective fire management in Russia and a functioning modern aerial forest fire service there is a need of:

- Definition of priority zones in the protected territory;
- Timely provision of finances *Avialesookhrana* before the start of the fire season (for training, maintenance, and other preparatory activities);
- Signing fire management agreements with other landowners that have wildland fire problems;
- Creation of a special programme for the management of large fires;
- Creation of a National Wildland Fire Management Training Centre.

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