



Forest fires during summer 2010 affected more than a billion acres of land, with dozens of people being killed by the flames and even more by the smoke. **Alexey Korolev** examines the aerial response to the crisis

RUSSIA BURNING





Russia has more forests than any other country – 22 per cent of the global total. They are one of the most valuable assets of the state and are of international importance. The forestland is also a vulnerable asset, not least because of its enormous area – it is no easy task to set up and run an effective fire management system across almost 1.14 billion hectares. Every year, there are forest fires in Russia in the spring and again later in summer and autumn. And in times of extreme heat and drought, such as the summer of 2010, local fires turn into a natural disaster. The peat bogs abundant in Russia make the situation even more serious, since the peat fires that usually accompany forest fires in the country are extremely hard to extinguish.

Red heat

There hasn't been a hotter summer in the 130 years that meteorological observations have been carried out in Russia, while some scientists claim that soil deposits point to it being a 1,000-year record. The extremely high temperature, reaching 43°C in some regions, and a lack of significant rainfall, led to extensive fires in the European part of the country, in Siberia and in the Far East. Over 32,000 fire spots over a total area of five to six

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million hectares were registered in the period from May to early August 2010 according to remote sensing data and, according to official data, 2.3 million hectares was in protected territories. The number of people killed directly by the fires was reported as 62, and thousands were left without a roof over their head – more than 30 villages and a total of more than 2,000 houses had been destroyed by the wildfires. Crisis struck the capital, as Moscow was covered in smog due to fires in the suburbs and nearby regions. The concentration of harmful substances was many times above normal, and low visibility made ground transport and aviation operations difficult. The number of deaths in Moscow in July and August was more than 50,000 higher than the average in previous years, which has been attributed to the air pollution. The city's suburbs

A view from above the burning forest



EMERCOM

One of the ground vehicles used



EMERCOM

were also hit by smog, alongside such major central Russian cities as Nizhniy Novgorod, Ryazan, Saratov, Tambov, Cheboksary and many others.

Fighting the flames

With the enormous task at hand, it is understandable that the main state service responsible for tackling natural and man-made disasters, the Ministry of the Russian Federation for Affairs for Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM) had to mobilise all its resources. This included the aviation group, totalling 20 fixed-wing aircraft (with models including Ilyushin 62s and 76s, Yakovlev 42s and amphibious Be-200s) and over 50 helicopters (a number of Mi-26s, 40 Mi-8s, six Ka-32s and four Eurocopters). Some of the planes were engaged in transporting fire-fighting teams

to various regions, while others (Il-76, Be-200, and helicopters equipped with necessary systems) were dumping water over fire spots. The EMERCOM aviation effort was aided by aircraft from the Aerial Forest Protection Service (Avialesookhrana) and amateur volunteer pilots, engaged in patrolling and identifying fire spots. Over 500 smokejumpers were transferred into Central Russia from various regions in Siberia. For instance, about 130 of these specially trained aerial firefighters were putting out fires in the Nizhniy Novgorod region. In spite of all efforts, internal resources were insufficient and in early August 2010, Russia had to look abroad for help. Two Italian Canadair CL-415 amphibious aircraft equipped for fire fighting were the first to come. Two Ukrainian An-32 planes were active in >> the Voronezh region. Armenia sent two Il-76



aircraft, while Azerbaijan sent Mi-17 and Ka-32 helicopters. Belarus sent a fire-fighting group on an Mi-8 helicopter. Citizens of Turkey, Bulgaria, France, Poland, Kazakhstan and other countries were among the combatants. According to some commentators, however, co-ordination and communication with the foreign aerial resources was hindered by an absence of international standard operating procedures or aerial fire fighting guidelines and protocols.

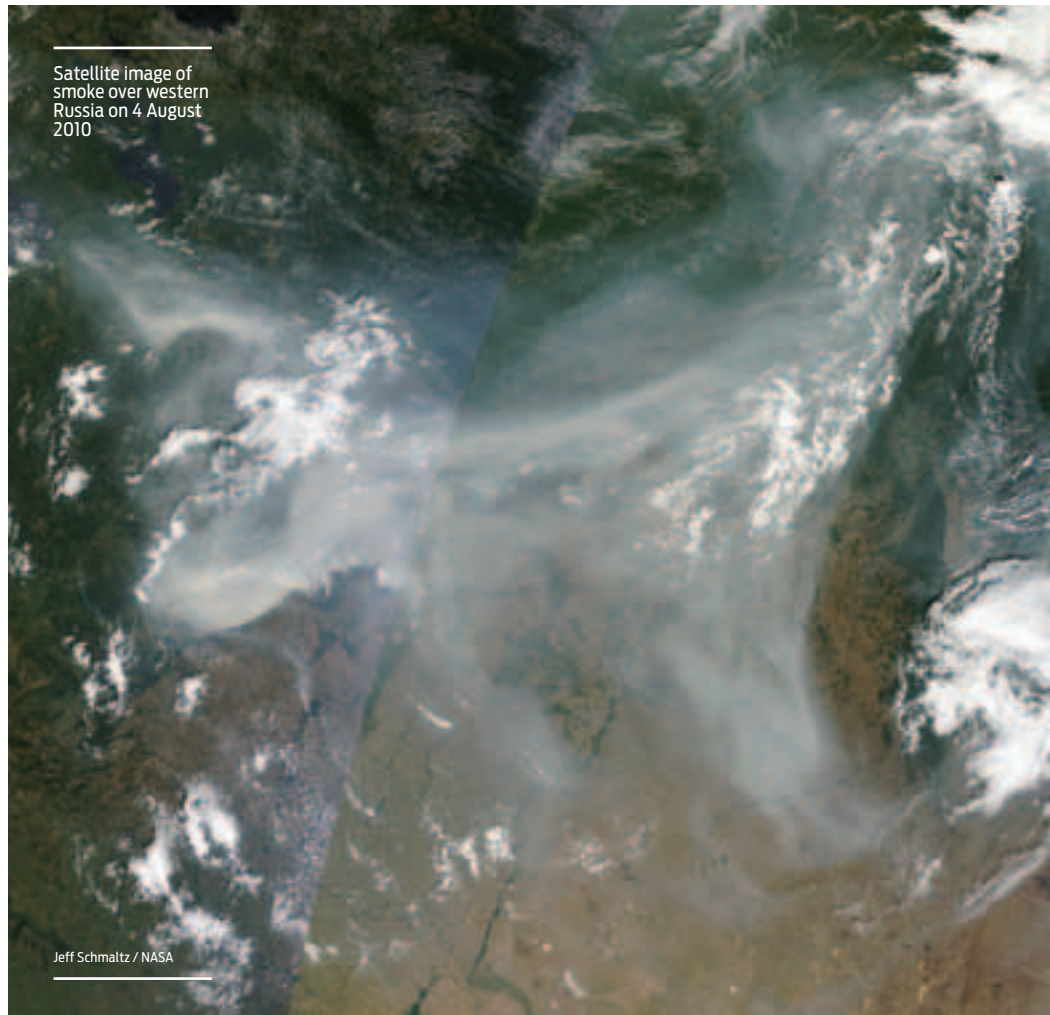
The air crews had to operate in extremely difficult conditions. Valery Gerasimov, captain of a Ka-32 engaged in fire-fighting operations, commented at the time: "The fires in the Moscow suburbs are extremely complex. We've worked several seasons in Turkey and Montenegro and have a lot of fire-fighting experience, but we've never seen anything

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like the fires raging around Moscow. Burning peat bogs have added to the poor visibility, but all crews did everything they could to perform their tasks." In total, EMERCOM aircraft made about 2,000 flights and dumped 73,000 tons of fire-extinguishing fluid on the fires. However, Sergey Shoygu, head of EMERCOM, estimates that about 12 billion roubles will be needed to overcome the consequences of these fires.

High flying

Famously, Russian Premier Vladimir Putin took part in fighting the fires personally. On 10 August 2010, he sat in the cockpit of one of two Be-200 aircraft, performing a 1.5-hour flight in the Ryazan region. According to reports in the press, Putin controlled water intake from the Oka River and later operated its dumping on burning forests. About 12 tons of water was dumped in a single drop. The amphibious Be-200 that the premier flew is a part of the EMERCOM fire-fighting group and is based at an airfield near Ryazan. The flight was received with mixed emotions – for instance, Putin was accused of being in the cockpit



Satellite image of smoke over western Russia on 4 August 2010

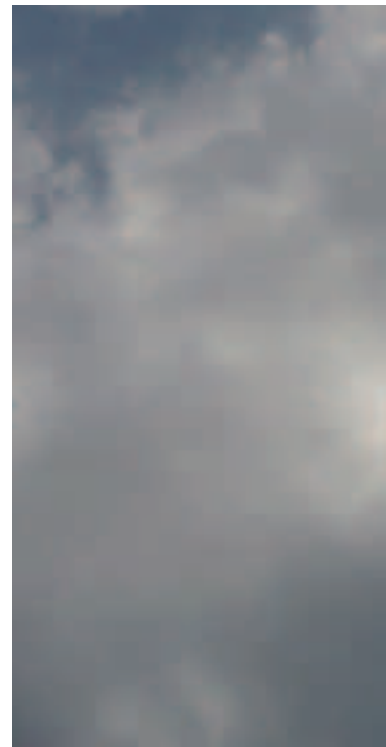
Jeff Schmaltz / NASA

without having received special training and in violation of current legislation. However, this was one of the ways that the authorities demonstrated their concern and attention to the serious problem, which by that point had become national.

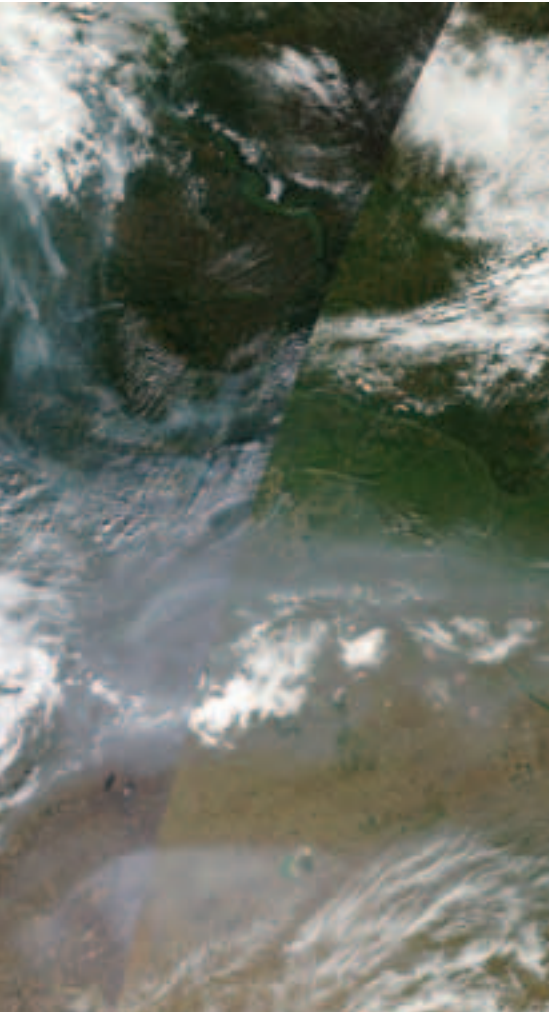
The blame game

Extreme heat was the main reason for the disastrous aftermath of summer 2010, but the Russian forest protection system revealed many weaknesses that affected the efficiency of the fight against the fire and the total damage caused. Greenpeace gave its view: "The Forest Code signed off by Mr Putin in 2007 has abolished the centralised forest protection and fire control system that used to give the alert when fires broke out and helped to fight them at an early stage. Instead of 70,000 forest guards, Russia now has around 12,000 forest bureaucrats who mainly do the paperwork." The same goes for the aerial forest protection service that was decentralised. Forest management, including harvesting trees for timber, is now given over to private enterprises. Forest protection tasks remain with the regional forestry branches – but staffing levels have been

A helicopter fighting the fires



EMERCOM



“we’ve never seen anything like the fires raging around Moscow”



capable of fighting fires as opposed to just scouting will exceed 136' this year. The expansion will be achieved both through acquisition of new aircraft (Il-76s and the unique jet-powered amphibious Be-200) and by the installation of fire-fighting systems on the existing EMERCOM fleet, as well as on police and border security helicopters. These measures will certainly have an impact, but besides expansion, perhaps it's time for Russian forest protection authorities to introduce deeper changes to the system, and make the fight for this valuable national asset more effective.

The Germany-based Global Fire Monitoring Center (GFMC), which is working under the auspices of the United Nations International Strategy for Disaster Reduction (UNISDR), the United Nations Economic Commission for Europe (UNECE) and the Council of Europe, confirms the need for strengthening

dozens of smokejumpers were transferred into Central Russia



criticised as being inadequate. Many leading voices consider the changes to have had a negative effect on the safety of forests. Specialists of the Institute of Applied Mathematics of the Russian Academy of Sciences said as far back as 2008 that results of their research had shown that EMERCOM employees did not have experience in fighting large-scale forest fires – those that until 2007 had mostly been tackled by the state forest protection service.

Lessons learned

To avoid the same situation in the future, conclusions must be made and measures taken – this has been said on many occasions by both the head of the EMERCOM and by the president himself. However, the changes the authorities are making in this direction today look more like an expansion rather than an update of the system. For instance, EMERCOM has prepared a bill 'on voluntary fire protection' that is targeted at attracting volunteers, offering them various privileges. The agency's aircraft fleet is expected to grow substantially – Sergey Shoygu stated that 'the total number of aircraft

fire management capacity at both federal and regional levels of the Russian Federation. Johann G. Goldammer, GFMC director, stated that the escalating impact of regional climate change and land-use change require increasing vigilance and capability to protect forest and terrestrial carbon pools from destruction by wildfires – potentially boosting greenhouse gas emissions and accelerating climate change. With concern to the increase of efficiency and interoperability of international aerial fire-fighting missions, the GFMC stressed the need for the development of international voluntary protocols for deployment of foreign aerial forces and the obligations of host nations to use incident control systems that are understood by all and ensure aerial fire fighting safety and efficiency. In this regard, the recently established International Fire Aviation Working Group (IFAWG) will become instrumental, said Goldammer. ▲

With thanks to:
GFMC (www.fire.uni-freiburg.de)
IFAWG (www.ifawg.org)