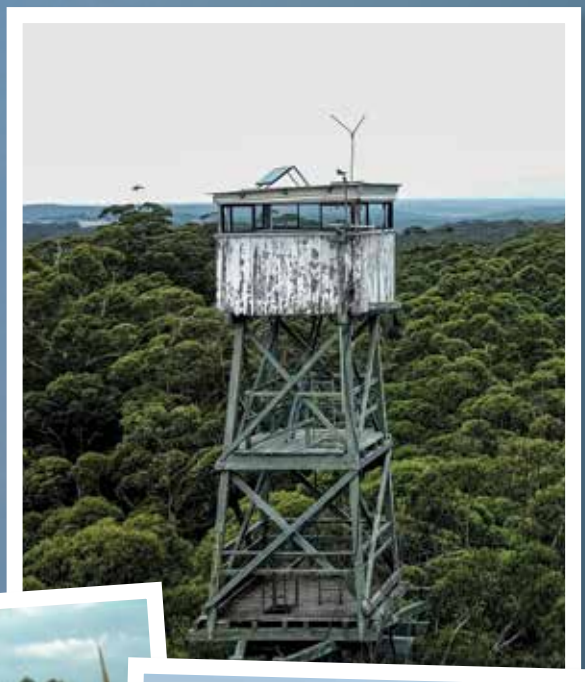
From towers to the skies

50 years of the aerial spotter fleet



From the mid-1930s to the 1970s, fire lookout towers played a vital role in protecting Western Australia's south-west from bushfire devastation. However, as aviation technology became more accessible and affordable, the then Forests Department decided to take fire spotting one step higher—to the skies. The so-called 'spotter squadron' came to be in 1972 and this year celebrates 50 years of aerial bushfire detection operations.

by Alex Gore

"Cessna 150s were designed as flight trainer aircraft with two seats side by side. They were relatively inexpensive and reliable second-hand rented planes."

For more than half a century, a group of dedicated pilots and technicians have been working daylight hours through the bushfire season to perform a vital, and often lifesaving, role.

The Department of Biodiversity, Conservation and Attractions' (DBCA) bushfire aerial detection fleet—also known as the aerial spotter fleet or the 'spotter squadron'—is celebrating 50 years of continuous and invaluable service to Western Australia. It has exceeded a combined total of 200,000 flying hours—that's 22 years—and flown an estimated 7.5 million kilometres, or the equivalent of ten trips to the moon and back.

DBCA's aerial spotter fleet contributes to the broader Western Australian aerial fleet that includes water bombing, aerial ignition and air intelligence fixed-wing aircraft and helicopters managed jointly by DBCA and the Department of Fire and Emergency Services (DFES). The spotter fleet also provides search and rescue support to the community and is used in scientific work like radio tracking for fauna projects.

Currently consisting of ten American Champion Scout aircraft, the spotter fleet operates out of four main bases across the State's south-west—Jandakot, Bunbury, Manjimup and Albany. The planes are flown by three full-time pilots and a number of seasonal pilots, performing district patrols according to weather conditions. The pilots are constantly looking out for signs of bushfire and reporting back to on-ground fire managers with critical intelligence about prescribed burns in a dynamic operational environment.

IT STARTS WITH ONE

The current resourcing is in stark contrast to the service's humble beginnings with a single Cessna 150 being the first aircraft assigned to aerial detection at Pemberton in 1972. The service was trialled in the surrounding district and its success led to a second plane the following year. By 1975 the 'spotter squadron' had grown to nine planes.

It was shortly after this time that a young pilot joined the team. Greg Simpson would become the aerial spotter fleet's longest-serving pilot to date, clocking up 16,000 hours of flying time, including 15 years as chief pilot, before retiring in 2020.

Cessna 150s were designed as flight trainer aircraft with two seats side by side. They were relatively inexpensive and reliable second-hand rented planes.

"Once the Cessna was flying you had to manage it," Greg said. "It required constant attention as it often struggled with the high temperatures. But it did the job and was a good introductory plane for the service."

Previous page
Main The final Piper Super Cub obtained by the Forests Department in 1982.
Photo – Jiri Lochman
Main below Parkerville fire, Perth 2014.
Photo – Jayson Omodei
Inset top Diamond Tree fire lookout tower near Manjimup.
Photo – Peter Nicholas/DBCA
Inset middle Five Manjimup-based pilots circa 1981.
Inset below ACA Scout at Manjimup 2017.
Photos – Jayson Omodei/DBCA

This page
Above Cessna 150 KXE and PQX at Manjimup 1978.
Photo – Greg Simpson

Opposite page
Top left Sunrise viewed from Scout.
Far right Pink Lake fire, near Esperance 2021.
Photos – Jayson Omodei
Above left Eagle XTS with Greg Simpson, test pilot and chief engineer.
Photo – DBCA

Discover more about the aerial spotter fleet

Scan this QR code or visit Parks and Wildlife Service's *'LANDSCOPE'* playlist on YouTube.

1972

1972 Forests Department starts flying aerial detection patrols using locally hired Cessna 150 aircraft over what is now the Donnelly circuit in the Warren region.

1970s Cessna 150 planes operate out of airstrips at Jandakot, Yarloop, Collie, Nannup, Manjimup and Walpole.

By **1976**, with the concept proven, more detection circuits are flown over the Dwellingup area, Harvey, Collie, Blackwood and Busselton areas, Pemberton and Manjimup and Walpole.

1977/1978
Forests Department starts purchasing and operating the Piper Super Cub aircraft.

1980s Up to nine planes operate daily circuits around smaller districts through bushfire season.

1993/1994
The locally conceived and manufactured Eagle 150 aircraft are introduced but ultimately deemed not appropriate for the operation.

Mid-1990s
Aerial suppression operations start out of Jandakot.

1997 American Champion Scout aircraft are purchased.

2001 Aerial suppression operations expanded to include Bunbury and Manjimup in 2003 and Albany by 2004.

2003 The last Piper Super Cub aircraft is used.

2004 The Department of Conservation and Land Management switches exclusively to American Champion Scout.

Today The fleet has grown to ten aircraft, as the aerial suppression side of the operation has developed. In 2020–21 the fleet flew more than 4100 hours of aerial surveillance in pre-determined circuits and a further 278 hours in support of bushfire suppression operations.

2022

Top left Banjup fire, near Perth 2014.

Top right Piper Super Cub.

Above Cowalla Road fire, Badgingarra 2014.
Photos – Jayson Omodei

In the late 1970s, the Forests Department began to replace the Cessna 150s with the Piper Super Cub aircraft.

"This plane had higher performance, more power and could take off almost anywhere," Greg said. "With tandem seats, you could see better out of both sides of the plane, so it did the job very well.

"Nowadays there are five detection aircraft flying each day across the five districts—Perth Hills, Wellington, Blackwood, Donnelly and Frankland. But through the 1980s, there were up to nine planes up every day, when the districts were smaller and the aircraft were slower."

In the early 1990s, the locally-manufactured Eagle XTS aircraft was trialled but ultimately these planes were deemed unsuitable for the role. So, in 1997, the first American Champion Scout aircraft were purchased and by 2004 they made up the entire fleet—the last Piper Super Cubs were in use until 2003.

"The Scout was another step up again," Greg said. "It's a faster aircraft, more comfortable to fly and probably one of the best utility platforms you can buy. The evolution of the fleet was very satisfying to experience over my 42 years with the department."

TWOFOLD ROLE

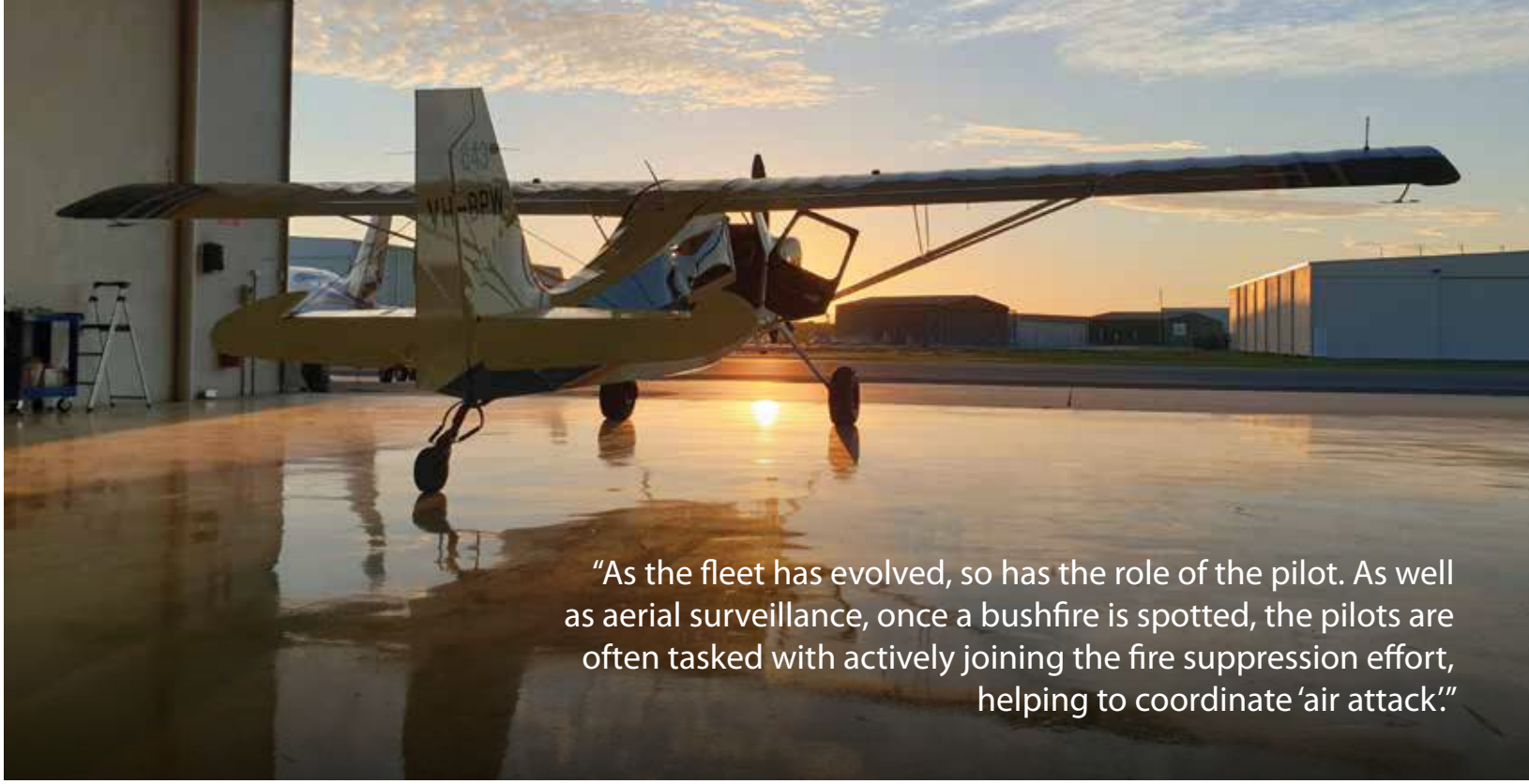
The team's current chief pilot Brad Hemsley believes that, as the fleet has evolved, so has the role of the pilot. As well as aerial surveillance, once a bushfire is spotted, the pilots are often tasked with actively joining the fire suppression effort, helping to coordinate 'air attack'.

"The role of the pilot is twofold," Brad said. "During the spring and autumn months, the department conducts its prescribed burn program. We fly overhead to report on how the burn is looking, if the burn is remaining within the pre-determined boundaries and provide any other intel that might be useful to the ground crews.

"We also map out the burn area so the duty officer can determine how effective the burn was for their planning.

"During the months of December to mid-April, we monitor these burnt-out areas to make sure there are no flare-ups. Peak summertime, with extended dry spells, creates bushfire danger risk throughout WA. Thunderstorms with associated lightning strikes create the biggest risk, as the bushland can be very dry and ripe for an ignition source like a lightning strike.

"The role also involves the aerial suppression part of the bushfire season,



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where we can be tasked with coordinating requested water bombing missions. This entails flying directly over an active bushfire at 1500 feet, with an Air Attack Supervisor also on board helping to guide the water bombers onto parts of the fireground as required by the ground controller."

Simple jobs can be managed by as few as two water bombers, while a very complex bushfire can involve up to 15 aircraft including helicopters and Large Aerial Tankers (LATs).

The intelligence provided by the aerial spotter fleet helps ensure the safety of firefighters and resources on the ground, and helps fire controllers put strategies in place to protect the community.

ON A MISSION

While the fleet detects and reports on an average of around 350 fires each year, the range of missions has also expanded outside of bushfire season. Pilots have assisted in police searches and animal rescues, as well as landing in isolated places like Dirk Hartog Island to help reset remote cameras used to help detect bushfire and wildlife.

In 2021–22, the fleet's fixed wing water bombers also support the DFES-led Grain Harvest Strategy aimed at

Top Scout VH-BPW Jandakot hangar 2021.

Above Mundaring prescribed burn, near Perth 2014.

Right Yarloop fire, near Dwellingup 2016.
Photos – Jayson Omodei

4500 to 5000 hours are flown per season, totalling an estimated **200,000 flying hours since 1972.**

Five detection circuits each cover **110 nautical miles** (about 215 kilometres) and can be flown multiple times a day.

A conservative estimate of **7.5 million kilometres** have been covered over 50 years (ten return trips to the moon).

8 Piper Super Cubs were used, 8 Eagle XTS and at least **29 Scouts** have been bought and sold.

Several hundred pilots have flown with the department. Some only do one season, some come back for more, many have achieved **10+ seasons**.

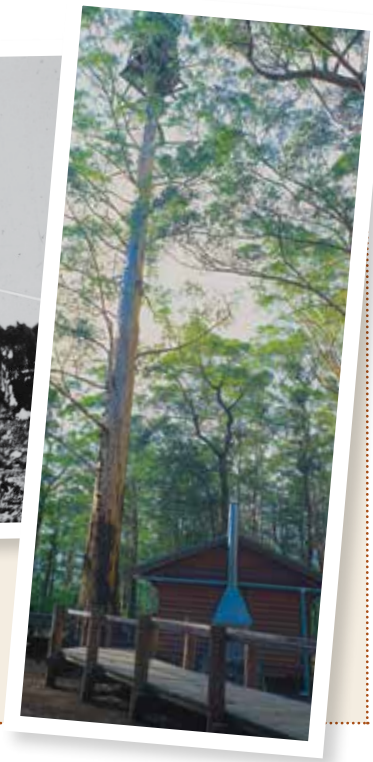
Fire lookout towers

Before the aerial spotter fleet, fire lookout towers were used atop some of the tallest trees in the State's forests and on purpose-built lookout towers.

Lookouts would live on-site in huts and watch the forests for 12 to 14 hours a day. In the days before mobile phones, or two-way radio, single telephone wires were strung between the trees to connect lookouts with forest gangs and district headquarters.

There are still nine active fire lookout towers strategically located between Mt Frankland in the Walpole Wilderness Area to Pinjar just north of Yanchep. Satellite technology is used to detect and monitor fires in the State's more remote regions.

The Gloucester Tree on the outskirts of Pemberton is one of the region's most famous fire lookout tower landmarks. For those brave enough, the tree can still be climbed today—the lookout cabin is at a height of 53 metres affording spectacular views. Find out more at exploreparks.dbca.wa.gov.au



protecting WA's highly-valued grain harvest from the impact of bushfire.

"We have roamed over large portions of WA, with operations as far north as Carnarvon this year, and as far east as Kalgoorlie several times in recent years," Brad said.

"We go to the Esperance coast multiple times a year, with the occasional foray further along the coast to Caiguna and even Forrest."

Another long-serving pilot, Jayson Omodei, has been with the fleet for 13 years based at Manjimup, Bunbury and Jandakot, clocking up 5000 flying hours. He is now passing on tips to the next generation of pilots and still enjoys flying the American Champion Scout.

"It's a tailwheel aircraft, which can be challenging at times, but therein lies the fun," Jayson said.

"In recent years I've been training the new pilots in our bushfire detection methods. It is very rewarding seeing someone come to us with no understanding of bushfire and at the end they can pinpoint a bushfire to within 80 metres and provide vital information."

Jayson says his most memorable flight is unfortunately a tragic one, as he was on duty the day the 2016 Yarloop bushfires started.

"I felt something was going to happen that day, so I got to work early and called the duty officer and said I was ready to go. I launched and headed straight for Dwellingup to find the two lightning strikes from the previous night. As the day progressed the bushfire got bigger and more active.

"The next day, seeing how large the bushfire was and hearing that two people had sadly lost their lives, took its toll on me. It's probably the worst part of the job, seeing it happen and not being able to do anything about it."

The flow of information from the air to the ground makes a significant difference.

"We provide rapid detection and accurate intelligence of bushfires, allowing ground crews and aerial suppression aircraft to attack the bushfire quickly and keep the fires to a minimal size, protecting people's homes and lives as well as the native flora and fauna," Jayson said.

"As well as bushfire detection, we also provide bushfire suppression supervision aircraft coordinating the water bombing activities. Over the years we have also conducted search and rescue operations, assisted in whale strandings, and provided overwatch for the feral animal control in the Pilbara.

"I take pride in the job, knowing we are doing our best to protect the community. The days can be long and being deployed away from home means we sometimes miss those important moments with friends and family, but that is the sacrifice we make."

Above left Mount Gunjin fire lookout tower.
Photo – State Library of WA

Above right Diamond Tree fire lookout tower, near Manjimup.
Photo – Jiri Lochman

Below Yarloop fire, near Dwellingup 2016.
Photo – Jayson Omodei

Alex Gore is a media and communications officer with DBCA's Public Information and Corporate Affairs and an award-winning print journalist. In 2010, he helped launch the ABC News Channel and has led rolling on-air coverage of bushfires, floods and earthquakes. He can be contacted at alex.gore@dbca.wa.gov.au or (08) 9219 9999.