USDA Forest Service
Aviation Strategy Implementation
2018- 2022

EXECUTIVE SUMMARY

The USDA Forest Service (Forest Service) utilizes aviation resources including helicopters, airtankers and other fixed wing assets to support wildland fire response operations across all jurisdictions. The Forest Service has been using aircraft since 1919, nearly 100 years, and continues to evolve the number, type and utilization characteristics of our fleet as conditions and technology change. The existing aviation fleet is composed of primarily contractor-owned and operated aircraft but the Forest Service does own numerous helicopters and fixed wing aircraft.

In 2012, it appeared that private industry might be unable to provide the Next Generation aircraft required to meet the standards for modernization of the fleet. This prompted Congress to provide seven HC-130H's from the Coast Guard through the 2014 National Defense Authorization Act, and $65 million in the FY 2015 Omnibus Appropriations Act for a purpose-built large airtanker (LAT), as a means of transitioning from legacy to modernized large airtankers.

After significant effort over several years, that transition is now complete, and the FY 2018 fire season LAT fleet will be all next-gen aircraft. Private industry has responded by investing in sufficient modernized aircraft to meet the objectives outlined in the 2012 *Large Airtanker Modernization Strategy*. As a result, the 7 HC-130H aircraft and the purpose-built large LAT funded in the FY2015 Appropriations bill are no longer required for the Agency to meet its mission. The Forest Service has determined that a fleet of contractor owned LATs will be the most cost-effective, efficient, and streamlined approach for providing national LAT resources.

Large airtankers are only part of the fleet modernization effort. Helicopters, other fixed wing assets and very large airtankers are complementary, each providing unique mission capabilities during aerial firefighting operations. The Forest Service continues to evaluate the best mix of asset types and ownership models to provide the necessary aviation capability to meet firefighting mission requirements for Federal, state, and local wildland firefighting missions of protecting communities and natural resources from wildfires.

The Forest Service is engaging in a multi-year effort, begun in 2012, to document the operational utilization and tactical contributions of aerial firefighting assets, particularly the use of LATs, in support of incident objectives for protection and suppression. The ultimate objective is to develop and implement performance metrics to evaluate performance, support evidence-based decisions in asset deployment, and inform strategies for future aviation budgeting and contracting.

Operational Plan for Number of Aircraft

Table 1- Planned number of LATs and Helicopters - Based on Congressional Support for discontinuation of the HC-130H program

Aircraft	FY2018	FY2019	FY2020	FY2021	FY2022
LATs	14	18	18	18	18
Next Gen 1.0	6				
Next Gen 2.0	7	7	7	7	7
Next Gen 3.0		11	11	11	11
Agency Owned HC-130Hs	1				
Purpose Built New LAT ($65M)	0				
Helicopters	108	108	108	108	108
Type 1 Helicopters	28	28	28	28	28
Type 2 Helicopters	34	34	34	34	34
Type 3 Helicopters	46	46	46	46	46

Asset Utilization Management

The Forest Service is implementing new policies and structures to ensure the effective and efficient use of aviation resources. The Forest Service contracts for a substantial fleet of Exclusive Use (EU) LATs, which are approximately 50 percent the cost of Call When Needed (CWN) assets. A governance structure will be instituted that maximizes the utilization of EU assets through new ordering and dispatch procedures. Additionally, if it is operationally necessary to create more capacity by using CWN assets, approval will be required by the Washington Office of the Forest Service. This is a substantive change that creates greater accountability and oversight for aircraft. This also allows the Forest Service to remain agile in responding to the aviation resource requirements as dictated by the fire season. The capability to surge aviation resources versus retaining a large fully dedicated fleet is a critical element of managing the rising cost of fires.

Substantial work is also being conducted to determine what conditions will create the highest probability of success in achieving desired objectives for all aviation asset types. This will ensure that we are only using the right asset in the right place, at the right time and for the right duration while creating a demand structure for assets that is appropriate.

These efforts will allow the Forest Service to continually monitor, learn and adapt to changing conditions and adjust aviation capacity as necessary to meet evolving conditions.

HC-130H Large Airtankers

The 2014 NDAA gave the Forest Service seven HC-130Hs from the Coast Guard which were intended to be fitted with gravity retardant delivery systems (RDS). There have been considerable delays in the delivery of both the refurbished aircraft and development and deployment of the RDS. As of October

2017 it is expected that the Forest Service will not receive a completed RDS-fitted HC-130H until the end of calendar year 2019.

The HC-130Hs, with an expected life span of only 6-12 years, were only intended to be a bridge until industry was able to meet the demand for modern LATs. Considerable cost and effort have been, and will continue to be, required to field the HC-130H - including contractor and Coast Guard support as well as additional government employees. To-date, nearly $48 million has been expended by the Forest Service in trying to establish a functional HC-130H program that can only support one aircraft at this time. The continuation of the HC-130H program is economically unsustainable, projected to cost upwards of $10-12 million a year per aircraft to operate which is about 50 percent higher than the cost of a contractor-owned LAT.

Given the short lifespan of the HC-130Hs, spending over $70 million per year for seven HC-130Hs when they will be phased out in 6-12 years is not cost effective. Longer-term sustainment of the aircraft beyond the 6-12 year lifespan, which is a likely outcome once the program is institutionalized, would incur significant costs in replacement parts in out-years. Standing up the HC-130H program will result in significant budget constraints and necessitate tradeoffs not just between other aviation resources, but potentially ground-based resources as well. In addition, given the proportion of the Forest Service's budget dedicated to wildland fire management – potentially 67 percent by FY2021, continued investment in this significant cost center also jeopardizes the Forest Service's ability to deliver its land management mission.

The industry has met the demand for modern LATs and can provide the necessary capability beyond the lifespan of the HC-130H's, which in turn provides the government with contractual solutions that provide the agency the ability to manage costs without sacrificing the ability to surge additional aviation resources when needed.

The Forest Service will seek Congressional support to discontinue the use of all HC-130Hs starting in FY2019. If Congress does not support discontinuation of the HC-130H program, an update to the strategy will be required.

Purpose Built New Large Airtanker (FY2015 Appropriations)

Congress provided $65 million in the FY2015 Appropriations bill for the Forest Service to acquire a new purpose built LAT. The Forest Service put out a Request for Proposals from vendors to supply the LAT. The responses received established that the $65 million was inadequate to fulfill all of the requirements. The FY18 Omnibus Bill repurposes the use of the $65 million to enhance firefighting mobility, effectiveness, efficiency, and safety.

Five-Year Plan for Aviation Funding Needs and Cost Recovery (offset)

Maintaining the planned level of aviation assets within a constrained budget environment will require tradeoffs between asset types and the number of assets, and we must continually evaluate fleet performance to ensure financial viability while maintaining a high degree of operational effectives. In

the table below, we will primarily execute planned aviation expenses in the Preparedness appropriation for daily availability rates and in the Suppression appropriation for hourly flight time rates.

Table 2– LAT and Helicopter Exclusive Use Availability Contracts Costs (Dollars in Millions) - Based on Congressional Support for discontinuation of the HC-130H program

Aircraft	FY2018	FY2019	FY2020	FY2021	FY2022
LATs	**$81**	**$92**	**$102**	**$106**	**$109**
Next Gen 1.0	30				
Next Gen 2.0	35	36	38	40	41
Next Gen 3.0	0	56	64	66	68
Agency Owned HC-130Hs	16				
Purpose Built New LAT ($65M)	0				
Helicopters	**$119**	**$119**	**$121**	**$122**	**$124**
Type 1 Helicopters	70	70	71	72	73
Type 2 Helicopters	33	33	34	34	34
Type 3 Helicopters	16	16	16	16	17
TOTAL	**$200**	**$211**	**$223**	**$228**	**$233**

The Forest Service is the primary provider of LATs and helicopters to the wildland fire community including other federal, state and local municipalities. The current cost recovery policy does not fully account for all associated costs and will be revised to realize full cost recovery. Implementing a full cost recovery plan for both the Department of the Interior (DOI) and State and local entities will allow the Forest Service to offset planned EU availability costs and sustain the necessary aviation capacity for the entire community while living within existing and planned budget constraints. The following table shows the average use of helicopters and LATs by State and other federal entities. It is expected that the Forest Service will recover approximately $39 million per year from DOI and $47 million from the States for daily availability costs.

Table 3- Forest Service LAT and Helicopter use by States and Department of Interior

	Department of Interior	States
Helicopters	13%	14%
Large Airtankers	22%	29%
Total Projected Recovery	$39M	$47M

Aerial Firefighting Use and Effectiveness (AFUE)

The Aerial Firefighting Use and Effectiveness (AFUE) Study was initiated in 2012 to answer a general, but complex question: "What is the most effective use of aviation assets to achieve suppression objectives?" Data collected from this study and other sources will inform future planning decisions about the use of the interagency wildland firefighting aircraft fleet. AFUE collects aircraft drop location and information including the objectives and outcomes for each drop, along with terrain, slope, fuel type, fire behavior, weather conditions and other factors that may influence drop effectiveness. By documenting the objectives, conditions and outcomes of individual drops, AFUE provides a means to identify and track the performance of aircraft, and assess the influence of the operational missions that drops supported and environmental factors that influenced outcomes. The U.S. Forest Service plans to begin releasing annual detailed fire suppression aircraft use summaries for 2015, 2016 and 2017 during 2018/19. Additional use summaries will come out several months after each data collection season. Additional AFUE Study products will become available after several more fire seasons, once the sample size and statistical confidence increases.

Conclusion

The fire season has become a year round event and become the fire year, due to a variety of factors, including, extreme weather conditions, buildup of hazardous fuels, and increasing development in and around the wildland urban interface, which has caused wildfire suppression activities to become more complex and costly. It is expected that the size and intensity of wildfires will continue to rise resulting in ongoing demand for aerial firefighting aircraft.

The Forest Service will continually monitor mission requirements, efficiency, cost-effectiveness and airtanker mission risk. This long-term process will ensure the appropriate mix of aerial firefighting resources can effectively support the wildland firefighting mission into the 21st century