

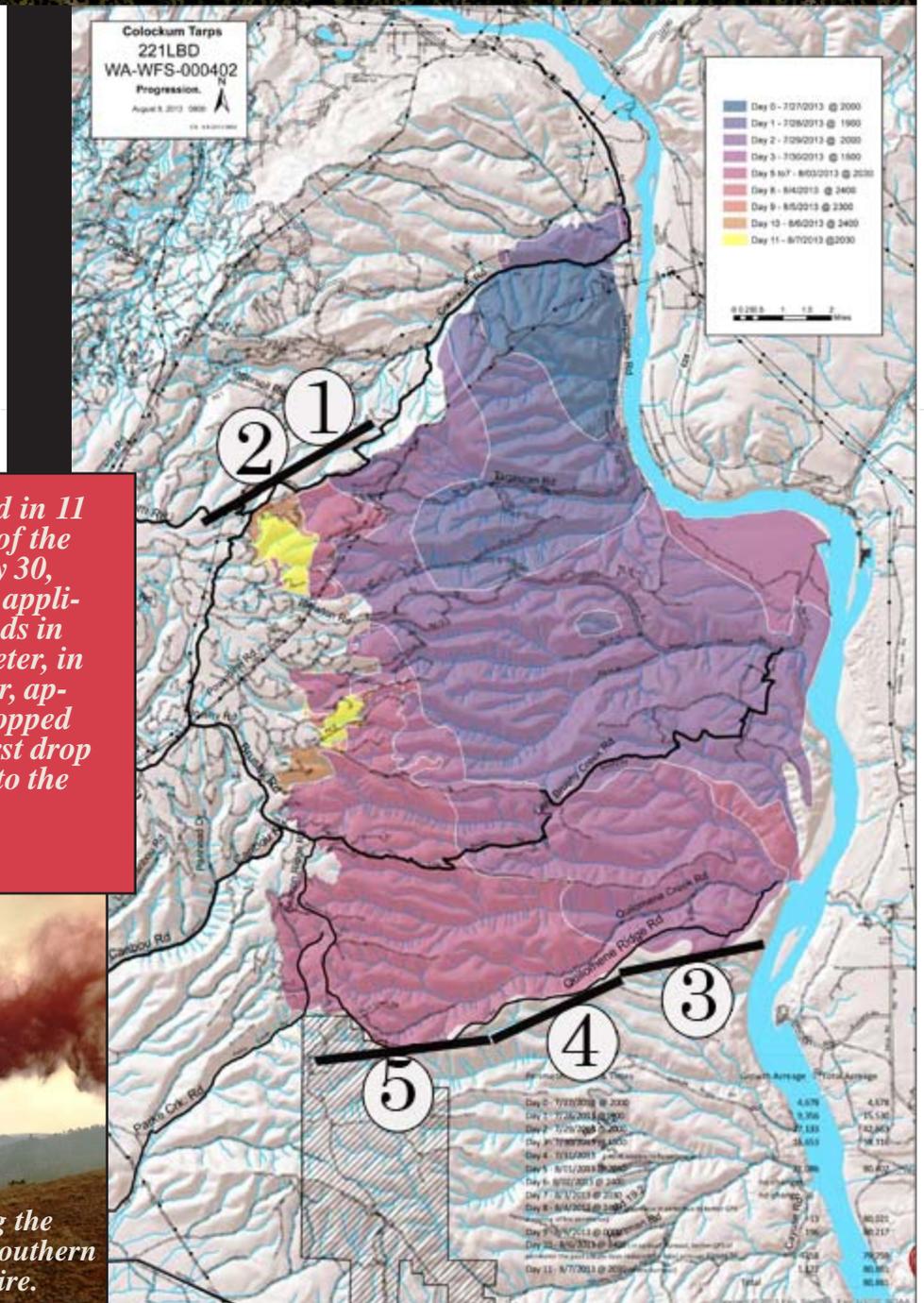


Washington
Interagency
Incident
Management
TEAM #4

On July 30, 2013 a DC 10 Very Large Air Tanker (VLAT) was used to deliver retardant to three divisions of the Colockum Tarps Fire. This report provides background on the capacity of the VLAT, describes the reasons for this decision, and shares the results of that application.



Successful Retardant Drops on the Colockum Tarps Fire by a Very Large Air Tanker



Five loads of retardant were deposited in 11 individual drops along the perimeter of the Colockum Tarps Fire on Tuesday, July 30, 2013. The first load (1) required two applications. The VLAT deposited three loads in eight drops along the southern perimeter, in Division X, west of the Columbia River, approaching from the east. The pilot dropped and then turned back to finish the first drop closer to the River and then returned to the Moses Lake Airtanker Base.



The VLAT delivers retardant along the Quilomene Ridge Road along the southern perimeter of the Colockum Tarps Fire.

VLAT Flight Statistics

Douglas Commercial (DC) 10 Retardant Plane

Call Sign: Tanker 911

3.12 Hours Flight Time

5 Round-Trip Flights

Moses Lake (landing location)

Landing Fees: **\$2,310**

Extended Standby (pilot over-time): **\$720.00**

Flight Cost: **\$33,035**

Cost Per Gallon Retardant: **\$3.76**

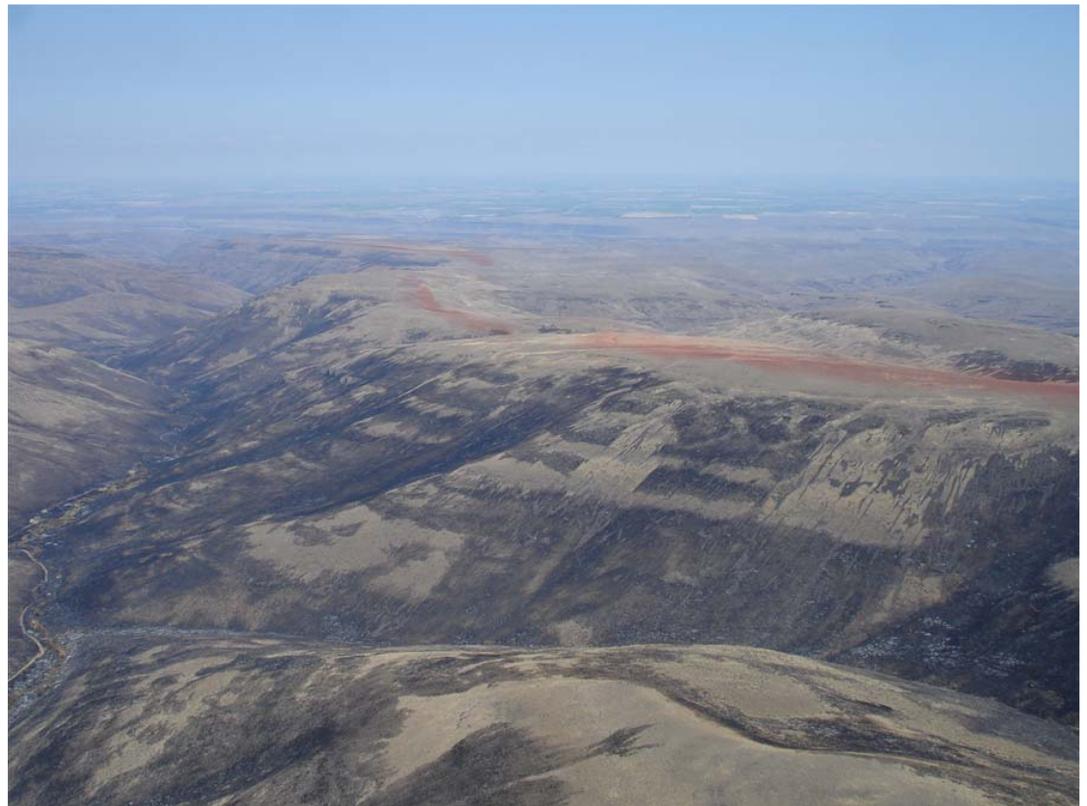
Total Retardant Gallons: **53,712**

Total Retardant Cost: **\$201,957.12**

ASM Lead Plane Cost: **\$6,299.78**

Total Cost:

\$244,322.00
DC10



The VLAT, Tanker T-911

Tanker 911 VLAT is a DC-10 temporarily stationed at Moses Lake (Washington) Airtanker Base. It delivers 11,600 gallons of retardant per load. The more commonly used heavy airtanker is a P2V with 2,100-gallon capability. One DC-10 VLAT load is equal to approximately six to seven P2V loads. One DC-10 VLAT drop line is approximately twice as wide as a P2V line. Also, the series of P2V loads may be less effective if gaps or weak coverage points occur

Use at Colockum Tarps Division C: Loads 1 & 2

Fire Objectives: To stop the spread of fire to the west/southwest toward Tarpiscan Creek

drainage, keep the fire east of Colockum Road; square up, and reduce overall containment line length; reduce resource loss; save regeneration in an old logging unit; and, prevent spread to Coffin Game Reserve and nearby structures.

The drop objective was to make a retardant line from a ridge (Colockum Road) down and through the North Fork of Tarpiscan Creek and terminate on the ridge/bench to the south. The objective was attained. Two loads from the VLAT were applied in three individual drops, under the supervision of an Aerial Supervision Module with Lead Greg House and ATGS "Air Attack" Albert Lynch. The line length for the two drops was .75 miles. A moderately heavy coverage level (6) was selected.



There was overlap in the critical part of the drainage where the fire had a high probability of escape. The drop altitude gave uniform coverage on both the ridge/bench terrain and in the creek 400-500 feet below. The DC-10 drop system's retardant mass produced a uniform line with minimal retardant dispersion, all the way into the dry creek bottom.



As of August 4, the fire had not spread past the retardant drop, but had "eaten" about mid-way through the retardant drop. The section of the drop in the bottom of the drainage was periodically "fortified" with water bucket drops.

William Moody (ATGS, WIIMT#4) said that it would have required 10 - 14 P2V loads (with less effective coverage) to equal this line width and length coverage. "The P2Vs could not have produced nearly as effective a line," he said, "and, in addition to potential gaps, the P2V could not have provided the required coverage level in the bottom of the drainage."

There was no safe exit/escape after dispersing the retardant. The DC-10 could maintain level flight above the ridge tops and exit safely. The mass of

the load remained intact and produced the desired coverage level even in the bottom of the drainage.

Divisions X and W:

During the period July 27-30, the fire moved south, often advancing 2-4 miles overnight. Divisions X and W were unstaffed until mid-day July 30.

July 30 Objectives: To stop the southerly/southwesterly progression of the fire, thus preventing fire spread into the wind power generation farm, Gingko State Park, I-90, and the structures in Parke Creek, Caribou Canyon, etc.

The drop objective was to make a continuous retardant line from the Columbia River west to the Parke Creek/

VLAT vs. P2V (41-load) Mission Cost:			
Four P2Vs -	\$366,400	Two P2Vs-	\$380,900
VLAT/DC-10-	\$244,322	VLAT/DC-10-	\$244,322
Difference -	\$122,078	Difference-	\$136,578
The DC-10 VLAT is cheaper by \$122,078 (using 4 P2Vs)			
The DC-10 VLAT is cheaper by \$136,578 (using 2 P2Vs)			

Caribou Canyon in Division W. This could not be accomplished during the remaining daylight July 30, 2013. Three VLAT loads were made. It would have required 27 P2V loads to accomplish an equivalent mission -- with less line integrity.

The first load (split into two drops) was to serve as an anchor point adjacent to the Columbia River. A coverage level 3 (relatively light) was selected for the grass/brush fuel model. Line length for the one load was 1.25 miles.

P2V Cost Comparison
P2V Tanker costs
derived from P2V records from Tanker 05 and Tanker 45:
41 Round Trip Flights (41 loads)
Tanker 05
Flight Cost: \$6,371.25
Retardant: \$2,633.98
Landing Fee: \$88
Cost: (9,093.23)
x 20 (loads)
TotalCost: \$181,864.60
Tanker 45
Flight Cost: \$5,351.75
Retardant: \$2,645.41
Landing Fee: \$88
Cost: (8,085.16)
x 21 (loads)
TotalCost: \$169,788.36
Total: \$351,652.96
2-P2Vs Operation
ASM Lead Plane Cost: \$29,247.04 +
\$351,652.96 =
\$380,900
4-P2Vs Operation
ASM Lead Plane Cost: \$14,747.04 +
\$351,652.96 =
\$366,400

The last two loads (six drops) were made, at a light coverage level, adjacent to where the fire was moving to the ridge top on the south side of Quilomene Canyon near Quilomene Road. The drops reinforced Quilomene Road. Line length for those two loads was 2.6 miles. Reconnaissance by air the next morning confirmed the success of the drops; the fire had not spread south.

August 31 Objectives: The focus of retardant drops was the wind farm/ Parke Creek/Caribou Canyon area. The DC-10 VLAT was not available due to pilot duty limitations and required days off. Heavy airtankers were deployed from Redmond Air Center (Oregon) to accomplish the aviation tactical objectives in Parke Creek/ Caribou Canyon. The heavy airtankers (P2Vs) in this scenario were the

most appropriate tool considering the locations of numerous structures and need for multiple relatively short drops. Bravo 6 effectively integrated fire helicopters (one heavy and four mediums) into the “tactical mix.” No structures were lost, much to the credit of Bravo 6 and later by Lead 68 Brock Hindman.

Photographs of the VLAT dropping retardant in Division X and returning to the Moses Lake Airtanker Base.



One DC-10 drop equals the drops of six to seven P2Vs.

General Conclusions

The use of the VLAT was more effective than use of multiple P2Vs. The objective for Divisions C and X/W could not have been accomplished in the desired time frame without use of the DC-10 VLAT.

- The VLAT was the only airtanker available at the Moses Lake Airtanker

Base. P2Vs would have required deployment from Redmond, Oregon, or other location in a different Geographic Area Coordination center (GACC)

- There was competition for airtanker support in the Pacific Northwest (PNW) GACC on July 30. PNW priorities may have precluded deployment of heavy airtankers for the

Colockum Tarps Fire.

- The VLAT was able to accomplish the tactical objective in Division C in a relatively short time and move on to a second objective, whereas the number of drops required from a P2V would have precluded drops on Division X/W, depending on the number of P2Vs available for the Colockum Tarps Fire.

- The VLAT was able to provide the desired coverage level in steep and dissected terrain of Division C; it is doubtful that the P2V could have done as effectively or safely.
- The VLAT produced a wide footprint of uniform, continuous line with no gaps or weak coverage areas, lines that have held for at least six days (as of August 7).

P2V (right) is often used to deliver retardant in areas of rough or steep terrain where drops by the VLAT may not be feasible.



Conclusion:

The use of the VLAT was more cost effective than use of multiple P2Vs.