

# 747 SUPERTANKER NIGHT OPERATIONS *A new paradigm ?*



# COLORADO SPRINGS



# ***A history of paradigms***



# AIRTANKER PARADIGMS





# **VLAT PARADIGM ESTABLISHED 2006 -2013**



# NIGHT HELI OPS PARADIGM



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# THE FAQ

## WHAT ABOUT NIGHT OPS?





# GSTS QUESTIONS

- ✓ Is the technology there?
- ✓ Can it be done safely?
- ✓ What are the advantages?
- ✓ Can it be done as safely, or more safely and effectively than day ops?
- ✓ Do benefits outweigh risks?
- ✓ Is it cost effective compared to day ops?
- ✓ **What are the prerequisites for “tactical operations?”**

# GSTS PERSPECTIVE

✓ Challenging environment – Risk Assessment



# GSTS PERSPECTIVE

- ✓ Challenging environment-Risk Assessment
- ✓ Requires higher drop AGL



# **“...the right tanker”**



**Volume (19,400 GL)**



**Drop system - to 65psi**

**Drop AGL**

**Footprint**

**Speed and range**

# DROP STATS

## EFFECTIVE DROPS/CL

400-? ft. AGL

+300 ft. footprint

.6 – 2 mi. length

CL 2-8



# GSTS PERSPECTIVE

- ✓ Challenging environment - RiskAssessment
- ✓ Higher drop AGL required
- ✓ Must be “fire specific”
- ✓ **Has potential – fire WX modification and direct attack**



# THE NIGHT OPS OBJECTIVE

- ✓ Reduce fire behavior indices for day operations
- ✓ Support safer ground operations fire behavior
- ✓ **Provide tactical support from 2000 hrs.- 1000 hrs. next AM**

# CRITICAL BURNING PERIOD



1000

1800

# TYPICAL TACTICAL OPS

## Ground Ops



0900-----

1900



# AIR OPS



1000

2000

# AERIAL SUPPORT 2000 – 1000

## MAXIMIZING AERIAL EFFECTIVENESS



# NIGHT DIURNAL CHANGES

TEMP

RH

WIND





# NIGHT OPS STRATEGIES

## Fire Behavior Modification





# Direct/Indirect Attack

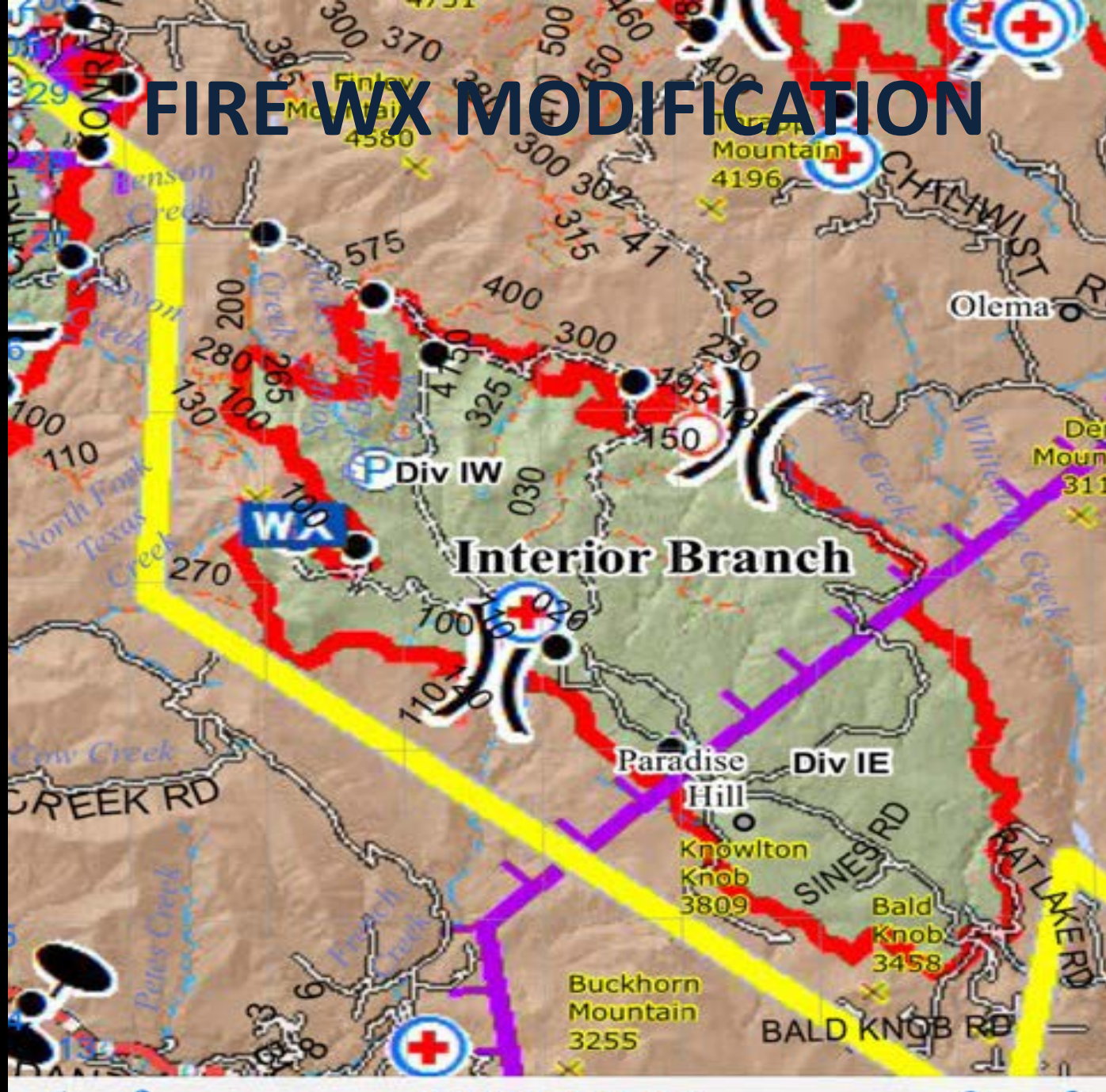


TO PREVENT THIS !





# FIRE WX MODIFICATION



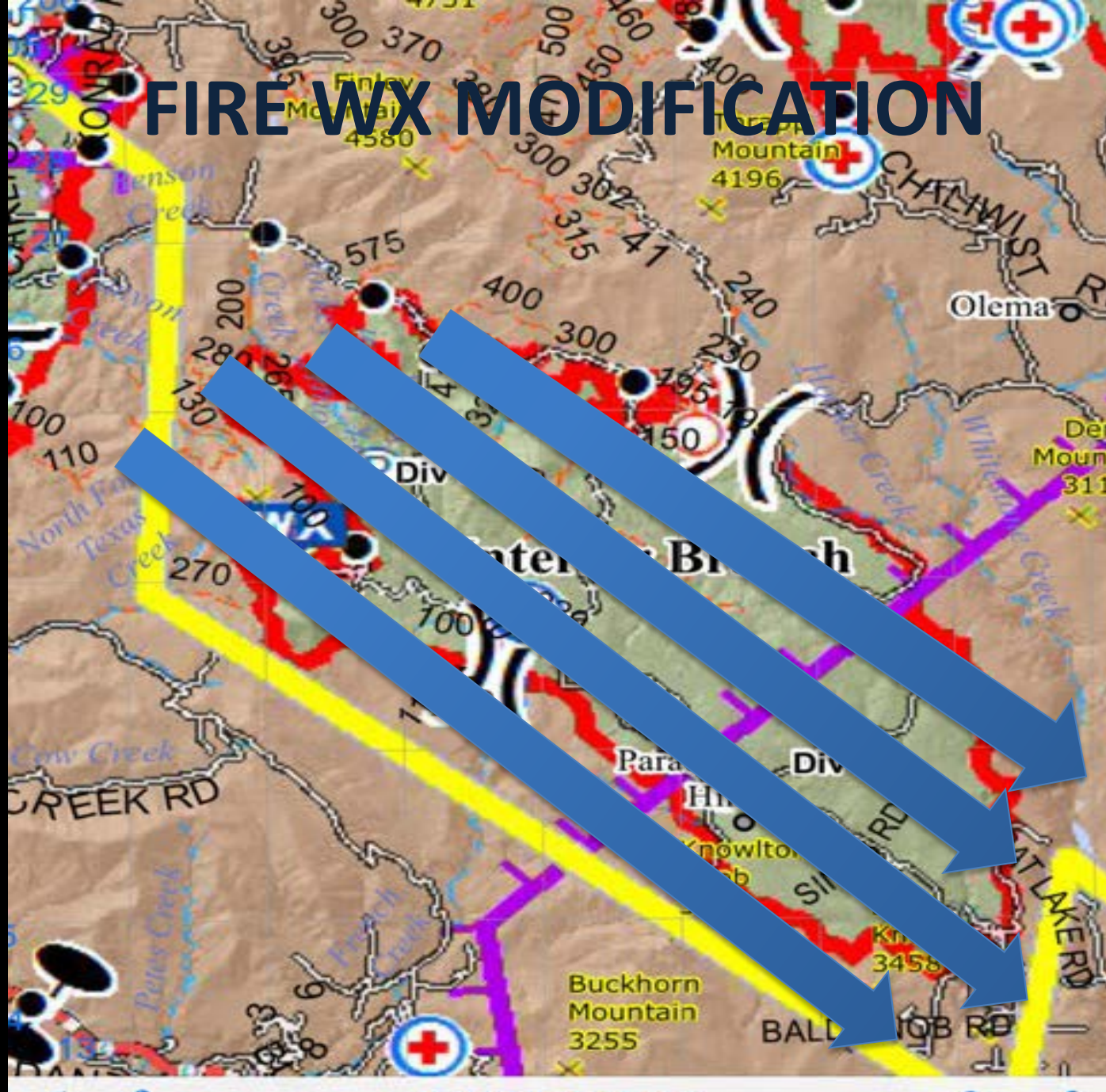


# CRITICAL "HOLD" PRIORITY





# FIRE WX MODIFICATION



# FB MOD #1





# GSTS PERSPECTIVE

- ✓ Challenging environment
- ✓ Higher drop AGL required
- ✓ Must be “fire specific” Not all fires
- ✓ Has potential – fire WX modification and direct/indirect attack
- ✓ **Supertanker is viable candidate**

# CLIFF'S THOUGHTS





# DESIGNED FOR NIGHT DROPS



# PREP FOR NIGHT DROPS

- ✓ Seek best night ops related input
- ✓ Modify cabin lighting
- ✓ NVG
- ✓ Incorporate ATGS IR target intel
- ✓ Develop night ops SOPs
- ✓ **R and D Project/Test Plan**

# R and D

- ◆ Safest drop altitudes (400 ft. +)
- ◆ Coverage levels at various drop altitudes
- ◆ Footprint at various drop altitudes
- ◆ **Operational protocols**

# ***BOEING 747 SUPERTANKER NIGHT OPERATIONS***

## ***RESEARCH and DEVELOPMENT PROJECT***

### ***RESEARCH and DEVELOPMENT PHASES***

***Phase 1 – Project Planning***

***Phase 2- Pre-Flight Operations***

***Phase 3- Initial Day Flight Operations***

***Phase 4- Initial Night Flight Operations***

***Phase 5- Min/Max AGL Operations***

***Phase 6- Initial Night Fire Operations***

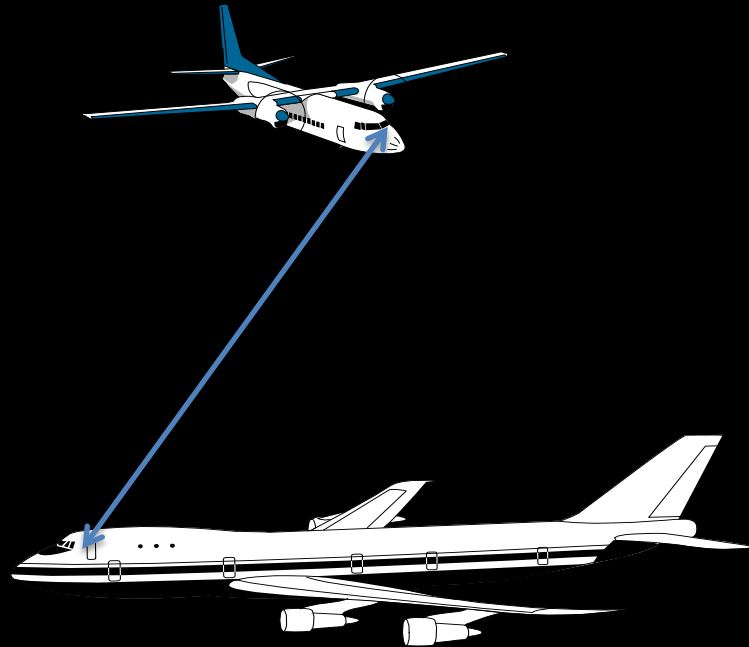
***Phase 7- Project Final Evaluation***



# THE MISSION



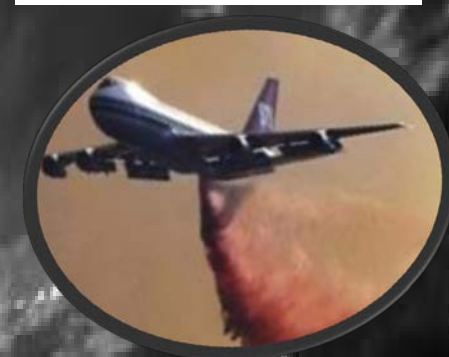
# MISSION COORDINATION



- Courtesy of Colorado DFP&C



The image is a composite of three elements. The background is a night vision image of a mountain range, with the text 'NVG' in yellow in the upper left. In the upper right, there is a close-up of a night vision helmet with three lenses. In the lower right, there is a circular inset showing a military aircraft in flight.

**NVG**

NEWPD1 TGT  
40 18 11N



# TO BE SUCCESSFUL

- ✓ A solid R & D Project Test Plan
- ✓ Agency sponsor joint venture
- ✓ Involvement – fire, technology, mgt. expertise
- ✓ **Commitment – IMT (IC, Ops, AOBD, ATGS)**

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