

Aviation Operations Systems (AOS)

CLOSING REMARKS

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<http://www.aos.nasa.gov>



Program Assessment

	3Q98	4Q98	1Q99	Remarks
Program Overall Assessment	G	G	G	
Technical Performance	G	G	G	
Cost	G	G	G	
Schedule	G	G	G	

Guidance:

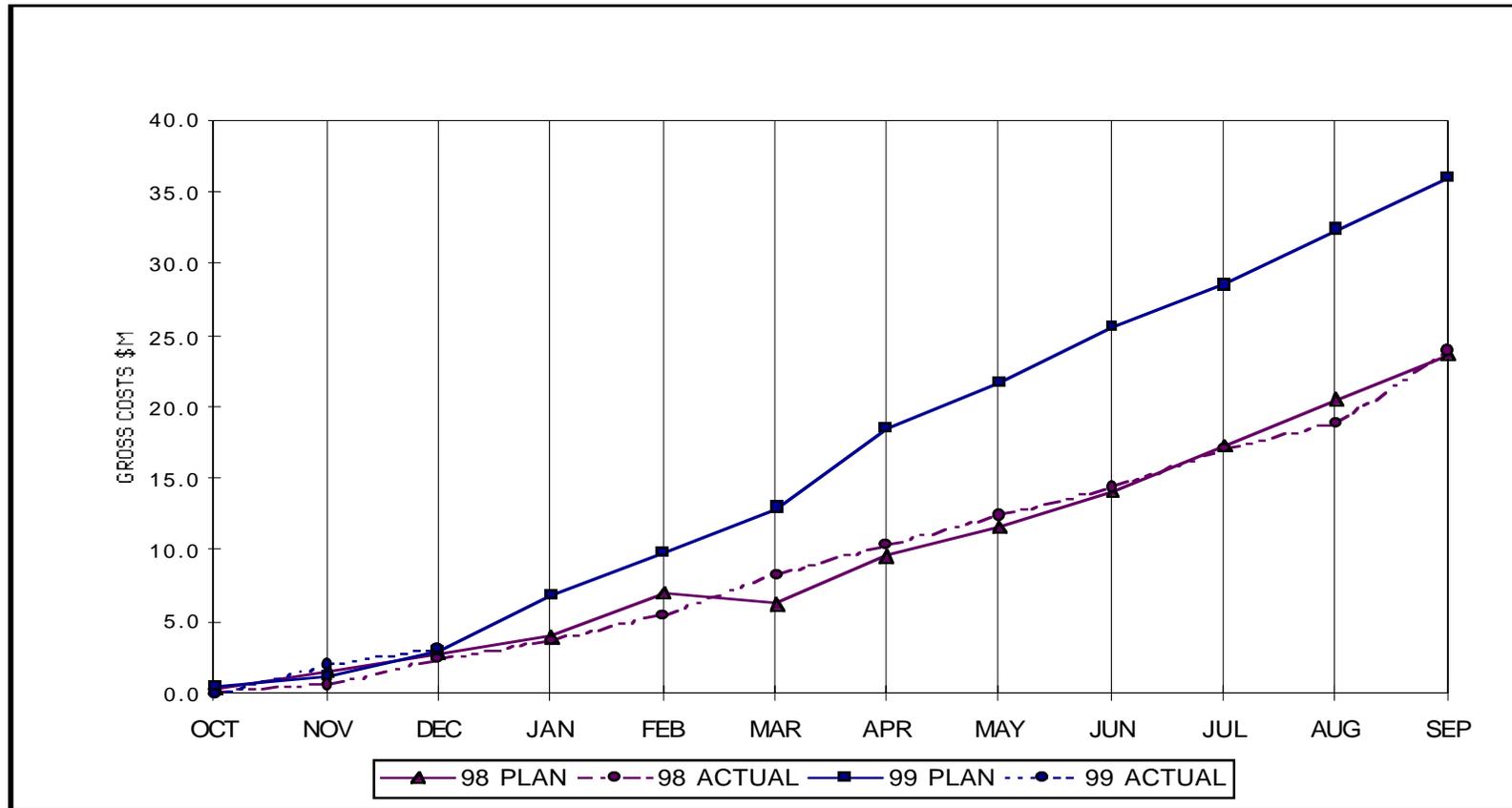
Assessment & Performance	L1 Judgement
Cost	-5% Yellow -15% Red
Schedule	-1Q Yellow -2Q Red

Financial Performance

AOS

Aviation Operations Systems Base R&T Program

AVIATION OPERATIONS SYSTEM



All Centers	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
98 PLAN	0.5	1.7	2.8	3.9	7.1	6.3	9.6	11.7	14.2	17.4	20.6	23.6
98 ACTUAL	0.3	0.7	2.4	3.7	5.5	8.4	10.4	12.5	14.4	17.1	18.9	24.0
COST VARIANCE	-0.1	-1.0	-0.4	-0.2	-1.5	2.1	0.8	0.8	0.2	-0.3	-1.8	0.4
99 PLAN	0.5	1.3	2.9	7.0	9.9	13.0	18.5	21.7	25.6	28.6	32.4	36.0
99 ACTUAL	0.0	2.0	3.2									
COST VARIANCE	-0.5	0.8	0.2									



Issues / Challenges

- Code R assessment of \$4.0M/yr cut against “Old Safety Money” in the Aviation Operations Systems Program conducted at Ames, beginning in FY00

Example Impact (FY 00)

	<u>Total</u>	<u>Human Factors</u>	<u>HF after \$4.0</u>
AOS Base	\$21.3	\$14.1	\$10.1
“New Safety”	\$14.1	\$ 8.8	\$ 8.8
“Old Safety”	\$ 7.2	\$ 5.3	\$ 1.3 (74% reduction)

“New Safety” consists of training, systems development, and displays applications, and is direct support for the Aviation Safety Program and its milestones.

“Old Safety” consists of fatigue , automation, and cognition/perceptual theory, and is an assumed baseline by the Aviation Safety Program

IMPACT: Elimination of world-class fundamental human factors core competency

AOS Base Cut Impacts

System Design, Assessment and Reliability

- L1 Milestone: Develop model-based display guidelines (FY 02): **Eliminated**
- L2 Work Area: Research areas in air-ground integration technologies and low visibility displays: **Eliminated**

Human Performance and Countermeasures

- L1 Milestone (FY 01): Develop perceptually matched 3-D auditory displays: **Delayed 1 Year**
- L2 Work Area: Fatigue countermeasures: **Eliminated**
- L2 Work Areas: Human modeling and perceptual monitoring for complex cognitive tasks: **Reduced by 50 %. Base Technology feed to AvSP.**

AOS Summary

- Base R&T has 10-year investment in:
 - Basic research in human performance
 - Air Traffic Management concepts/tools (CTAS, basis for AATT)
 - Icing research
 - Weather products (sensors, communication & display)
- Provides critical support for Capacity and Safety programs and roadmaps
- New investment strategy required to seed new generation focus (support roadmaps):
 - Human-automated agent Integration
 - Airspace modeling techniques
 - Automation theory for new control paradigm
- \$4.0M reduction eliminates long-term human factors work

A Final Note

*The Aviation Operations Systems Program Director
and the Level 2 Project Managers*

*wish to acknowledge the many contributions to this program
and to NASA human factors research by*

Dr. Kevin Corker

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