CG Aviation Risk Management

Review of Current CG Aviation Risk Management Programs

Flight Safety Officer Training Course

Homeland Security

Risk Management in Aviation

Programs established in policy

- Crew Resource Management- M3710.1, M5100.47
- Maintenance Resource Management- M13020.1, M5100.47
- Operational Risk Management- I3500.3, M5100.47
- Crew Endurance Management- I3500.2

Crew Resource Management

CG Policy

- COMDTINST M3710.1F changed initial & refresher training requirements
- Change 1 aligned requirements across crew positions
- Initial = within 1 year of assignment to pilot / aircrew status; completed at ATTC, ATC or C-130 Stan Team
- Refresher
  - Pilots = scheduled annually, completed within 15 months (to allow for p-course movement)
  - Aircrew & AMS = required annually

Maintenance Resource Management

CG Policy

- Established in COMSTINST M13020.1
- Initial = before performing/ ordering work on CG aircraft
- Refresher = biennial (every 2 years) vice biannual (twice a year)
- Initial at ATTC, Refresher at unit
- Unit Refresher Instructor qual good for 2 years
  - Unit Refresher Instructors not qual'd for MRM Initial
- HIGHLY recommended for contract & civilian personnel

Maintenance Resource Management

CG Policy- pending changes

- CGTO PG-85-00-110
  - Define jewelry to include watches, bracelets and rings.
  - Will also address use of personal electronic devices (to include cell phones) while engaged in maintenance functions
  - Revision to section regarding MPC use to explicitly state using one is mandatory if one exists for task being performed

Operational Risk Management

CG Policy

- Established in COMSTINST I3500.3
  - Requires units to include ORM process information in “all operational briefs, e.g. pre- and post-flight”
  - Directs ORM process information be added during normal revision process to “appropriate written operational notices and plans, e.g. helicopter operations.”
  - Promulgated standardized Aviation Risk Assessment
- Further developed in CRM courseware

Operational Risk Management

CG Policy

- MISLE entry requirement
  - ALCOAST 042/08 from CG-53 (Director for Response Policy)
  - Results of the asset's ORM shall be entered
  - Any specific risk mitigation strategies taken shall be noted in comments
  - Enter results from model used (color and/or number)
- CG Standard?

Operational Risk Management

Date: _____ Mission: _____

Step 1. Risk Assessment

Review questions and circle the score according to currently available information. Score items according to the examples given and instincts. Absence of data automatically sets the score to maximum point value.

Planning: Thoroughness of pre-mission planning. Factors which increase risk, B-0 response assets, in-flight divert of asset.

Adequate — Minimal — None
1 2 3 4 5

Event: Refers to mission complexity and guidance or doctrine available. Factors which may increase risk: sketchy details or non-standard mission profile.

Clear Guidance — Complex/ Innovation Required
1 2 3 4 5

Asset: Selection of appropriate resources. Factors that effect risk: time at unit, unfamiliar w/OP area, fatigue, flight time (total time & time in type), crew rest, 5181's, requestor's knowledge of asset capabilities.

A. Pilots

Excellent — Adequate — Marginal
1 2 3 4 5

B. Aircrew

Excellent — Adequate — Marginal
1 2 3 4 5

C. Airframe/Resources

Fully Mission Capable — Partially Mission Capable
1 2 3 4 5

Communications: Ability to maintain comms throughout mission. Factors: internal w/command and external w/customer.

Adequate — Marginal — None
1 2 3 4 5

Environment: External condition surrounding mission: Weather, night, illumination, mountainous sea state, terrain, cutter based, alternate airfields, water temp, on-scene cover.

Benign — Marginal — Hazardous
2 4 6 8 10

Add the values for each Risk Assessment and plot the final Risk Assessment on graph below (include re-assessment from Step 2).

Step 2. Risk Management

Risk Management is the decision to control or reduce hazards. Below are *Control Options* to assist in risk control or reduction. Review the options and reassess the risks as appropriate.

Spread-out – Disperse the risk by launching additional air/surface assets.

Transfer – If practical, locate a better suited asset to conduct the mission i.e. different airframe, surface asset, or crew.

Avoid – Circumvent hazard: Wait for risk to subside i.e. wait until daylight or weather passes.

Accept – In some cases the benefit might justify the assumption of risk. In these cases a decision to accept risk may be made with the stipulation that risk is reevaluated as the mission progress. (No adjustment to Risk Assessment)

Reduce – Reduce or limit risk exposure: Additional PRECOM/EXCOM, bring in fresh or more experienced crew.

Re-assess Step 1 Values

Step 3 Risk vs. Gain

Low **G**ain – Situation with intangible benefits or a low probability for providing concrete results. Examples include passenger transport, non-critical logistics missions, PAO demonstration flight, etc.

Medium **G**ain – Situation that provides immediate, tangible benefits. Examples include saving property, protecting the environment, deterring illegal operations.

High **G**ain– Situation that provides immediate, tangible benefits that if ignored could result in loss of life. Examples include Urgent SAR and MEDEVACs.

Given the mission description above, what is the "Gain" for this mission?

[ ] Vs. [ ]

Risk Assessment (Hi/Med/Lo) — **Gain** (Hi/Med/Lo)

Use the Risk vs. Gain Chart on the next page for a recommendation on how to proceed with the mission.

8 Low — 6 — 24 Medium — 32 — 40 High

Homeland Security

Operational Risk Management

	High Gain	Medium Gain	Low Gain
Low Risk	Accept the Mission. Continue to monitor Risk Factors, if conditions or mission changes.	Accept the Mission. Continue to monitor Risk Factors, if conditions or mission changes.	Accept the Mission. Re-evaluate Risk vs. Gain, should Risk Factors change.
Medium Risk	Accept the Mission. Continue to monitor Risk Factors and employ Control Options when available.	Accept the Mission. Continue to monitor Risk Factors and employ Control Options when available.	Accept the Mission. Continue to monitor Risk Factors and actively pursue Control Options to reduce Risk.
High Risk	Accept the Mission only with Command endorsement. Communicate Risk vs. Gain to Chain of Command. Actively pursue Control Options to reduce Risk.	Accept the Mission only with Command endorsement. Communicate Risk vs. Gain to Chain of Command. Actively pursue Control Options to reduce Risk.	Do not Accept the Mission. Communicate to Chain of Command. Wait until Risk Factors change or Control Options warrant.

Operational Risk Management

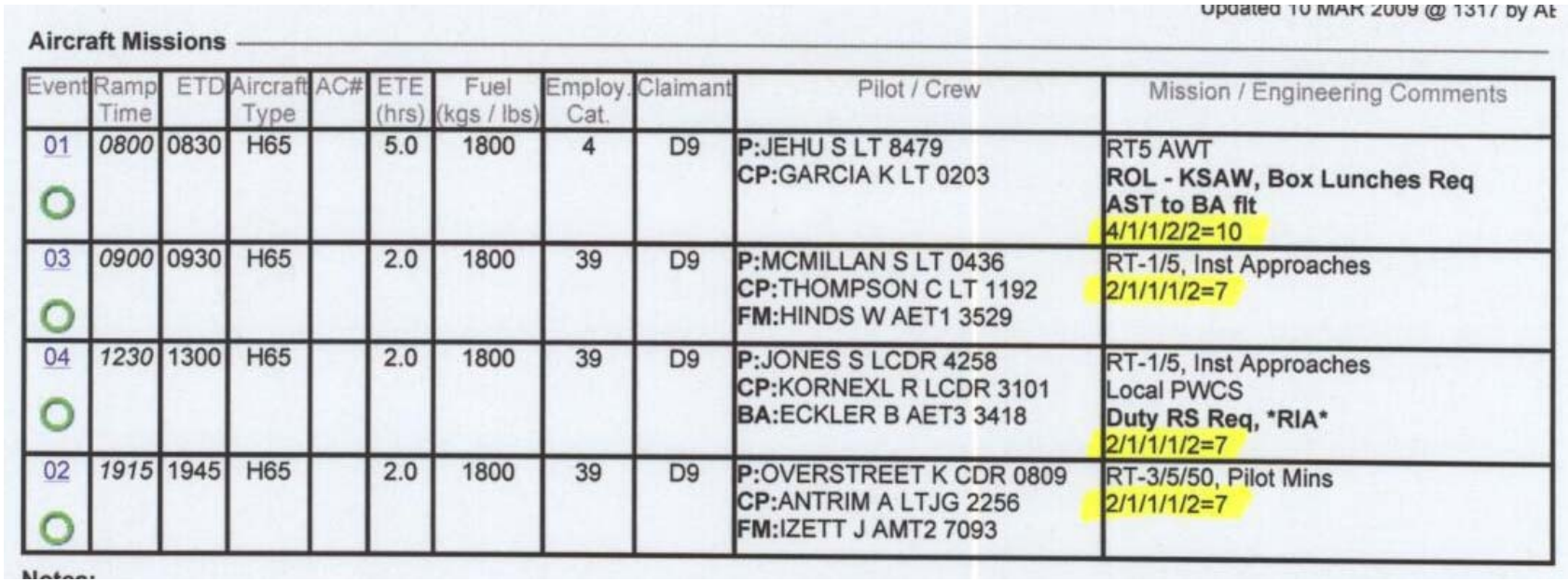
When Does ORM Start?

- When the mission is scheduled?
- When the crew meets during duty relief?
- When the mission is planned?
- When the mission is briefed?
- Who does the initial ORM assessment?
- How is the command informed of the ORM assessment and Risk vs Gain analysis?

How does your unit do it? Do you do it at all?

Operational Risk Management

ORM in the Mission Scheduling Phase- Planning/ Event/ Asset/ Communications/ Environment



Updated 10 MAR 2009 @ 1317 by AE

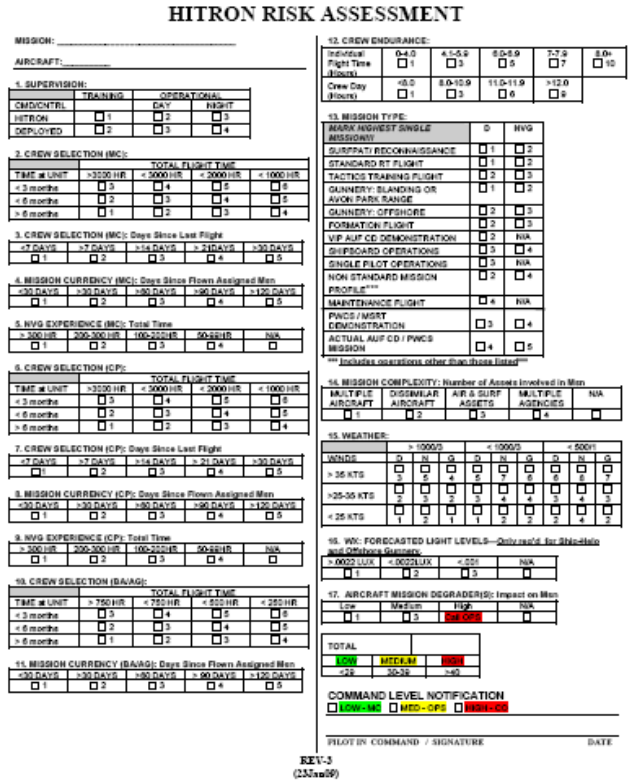
Aircraft Missions

Event	Ramp Time	ETD	Aircraft Type	AC#	ETE (hrs)	Fuel (kgs / lbs)	Employ. Cat.	Claimant	Pilot / Crew	Mission / Engineering Comments
01	*0800*	0830	H65		5.0	1800	4	D9	**P:**JEHU S LT 8479 **CP:**GARCIA K LT 0203	RT5 AWT **ROL - KSAW, Box Lunches Req** **AST to BA flt** 4/1/1/2/2=10
03	*0900*	0930	H65		2.0	1800	39	D9	**P:**MCMILLAN S LT 0436 **CP:**THOMPSON C LT 1192 **FM:**HINDS W AET1 3529	RT-1/5, Inst Approaches 2/1/1/1/2=7
04	*1230*	1300	H65		2.0	1800	39	D9	**P:**JONES S LCDR 4258 **CP:**KORNEXL R LCDR 3101 **BA:**ECKLER B AET3 3418	RT-1/5, Inst Approaches Local PWCS **Duty RS Req, *RIA*** 2/1/1/1/2=7
02	*1915*	1945	H65		2.0	1800	39	D9	**P:**OVERSTREET K CDR 0809 **CP:**ANTRIM A LTJG 2256 **FM:**IZETT J AMT2 7093	RT-3/5/50, Pilot Mins 2/1/1/1/2=7

Notes:

Operational Risk Management

ORM- Mission Planning Phase



HITRON RISK ASSESSMENT

MISSION: _____

AIRCRAFT: _____

1. SUPERVISION:

	TRAINING	OPERATIONAL	
		DAY	NIGHT
CMD/CNTRL			
HITRON	☐ 1	☐ 2	☐ 3
DEPLOYED	☐ 2	☐ 3	☐ 4

2. CREW SELECTION (MC):

	TOTAL FLIGHT TIME			
TIME at UNIT	>3000 HR	< 3000 HR	< 2000 HR	< 1000 HR
< 3 months	☐ 3	☐ 4	☐ 5	☐ 6
< 6 months	☐ 2	☐ 3	☐ 4	☐ 5
> 6 months	☐ 1	☐ 2	☐ 3	☐ 4

3. CREW SELECTION (MC): Days Since Last Flight

<7 DAYS	>7 DAYS	>14 DAYS	> 21DAYS	>30 DAYS
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

4. MISSION CURRENCY (MC): Days Since Flown Assigned Msn

<30 DAYS	>30 DAYS	>60 DAYS	>90 DAYS	>120 DAYS
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

5. NVG EXPERIENCE (MC): Total Time

> 300 HR	200-300 HR	100-200HR	50-99HR	N/A
☐ 1	☐ 2	☐ 3	☐ 4	☐

6. CREW SELECTION (CP):

	TOTAL FLIGHT TIME			
TIME at UNIT	>3000 HR	< 3000 HR	< 2000 HR	< 1000 HR
< 3 months	☐ 3	☐ 4	☐ 5	☐ 6
< 6 months	☐ 2	☐ 3	☐ 4	☐ 5
> 6 months	☐ 1	☐ 2	☐ 3	☐ 4

7. CREW SELECTION (CP): Days Since Last Flight

<7 DAYS	>7 DAYS	>14 DAYS	> 21 DAYS	>30 DAYS
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

8. MISSION CURRENCY (CP): Days Since Flown Assigned Msn

<30 DAYS	>30 DAYS	>60 DAYS	>90 DAYS	>120 DAYS
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

9. NVG EXPERIENCE (CP): Total Time

> 300 HR	200-300 HR	100-200HR	50-99HR	N/A
☐ 1	☐ 2	☐ 3	☐ 4	☐

10. CREW SELECTION (BA/AG):

	TOTAL FLIGHT TIME			
TIME at UNIT	> 750 HR	< 750 HR	< 500 HR	< 250 HR
< 3 months	☐ 3	☐ 4	☐ 5	☐ 6
< 6 months	☐ 2	☐ 3	☐ 4	☐ 5
> 6 months	☐ 1	☐ 2	☐ 3	☐ 4

11. MISSION CURRENCY (BA/AG): Days Since Flown Assigned Msn

<30 DAYS	>30 DAYS	>60 DAYS	> 90 DAYS	>120 DAYS
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

12. CREW ENDURANCE:

Individual Flight Time (Hours)	0-4.0 ☐ 1	4.1-5.9 ☐ 3	6.0-6.9 ☐ 5	7-7.9 ☐ 7	8.0+ ☐ 10
Crew Day (Hours)	<8.0 ☐ 1	8.0-10.9 ☐ 3	11.0-11.9 ☐ 6	>12.0 ☐ 9	

13. MISSION TYPE:

MARK I/II/WEST SINGLE MISSION///	D	NVG
SURFPATI RECON/HAISSANCE	☐ 1	☐ 2
STANDARD RT FLIGHT	☐ 1	☐ 2
TACTICS TRAINING FLIGHT	☐ 2	☐ 3
GUNNERY: BLANDING OR AVON PARK RANGE	☐ 1	☐ 2
GUNNERY: OFFSHORE	☐ 2	☐ 3
FORMATION FLIGHT	☐ 2	☐ 3
VIP AUF CD DEMONSTRATION	☐ 2	N/A
SHIPBOARD OPERATIONS	☐ 3	☐ 4
SINGLE PILOT OPERATIONS	☐ 3	N/A
NON STANDARD MISSION PROFILE***	☐ 2	☐ 4
MAINTENANCE FLIGHT	☐ 4	N/A
PWCS / MGST DEMONSTRATION	☐ 3	☐ 4
ACTUAL AUF CD / PWCS MISSION	☐ 4	☐ 5

*** Includes operations other than those listed***

14. MISSION COMPLEXITY: Number of Assets Involved in Msn

MULTIPLE AIRCRAFT	DISSIMILAR AIRCRAFT	AIR & SURF ASSETS	MULTIPLE AGENCIES	N/A
☐ 1	☐ 2	☐ 3	☐ 4	☐

15. WEATHER:

	> 1000/3			< 1000/3			< 500/1		
WINDS	D	N	G	D	N	G	D	N	G
> 35 KTS	☐ 3	☐ 5	☐ 4	☐ 5	☐ 7	☐ 6	☐ 6	☐ 8	☐ 7
>25-35 KTS	☐ 2	☐ 3	☐ 2	☐ 3	☐ 4	☐ 4	☐ 3	☐ 4	☐ 3
< 25 KTS	☐ 1	☐ 1	☐ 1	☐ 2	☐ 2	☐ 2	☐ 2	☐ 3	☐ 2

16. WX: FORECASTED LIGHT LEVELS—Only req'd for Ship-Helo and Offshore Surveys

> .0022 LUX	< .0022LUX	< .001	N/A
☐ 1	☐ 2	☐ 3	☐

17. AIRCRAFT MISSION DEGRADER(S): Impact on Msn

LOW	Medium	High	N/A
☐ 1	☐ 3	☐ 6	☐

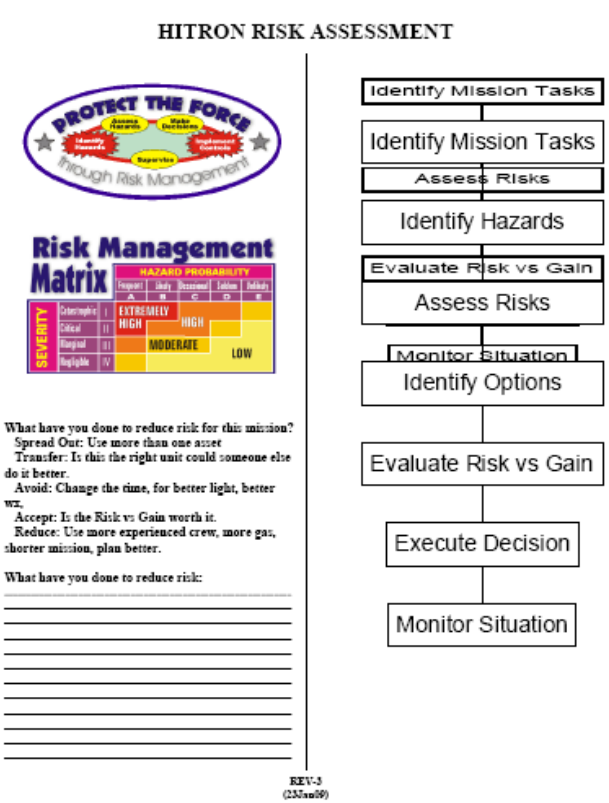
TOTAL		
LOW	MEDIUM	HIGH
<26	26-39	>40

COMMAND LEVEL NOTIFICATION

☐ LOW - MC ☐ MED - OPS ☐ HIGH - CC

PILOT IN COMMAND / SIGNATURE DATE

REV-3 (23Jan09)



HITRON RISK ASSESSMENT

PROTECT THE FORCE through Risk Management

Risk Management Matrix

SEVERITY	HAZARD PROBABILITY				
	Frequent A	Likely B	Occasional C	Seldom D	Unlikely E
Catastrophic I	EXTREMELY HIGH				
Critical II		HIGH			
Marginal III			MODERATE		LOW
Negligible IV					

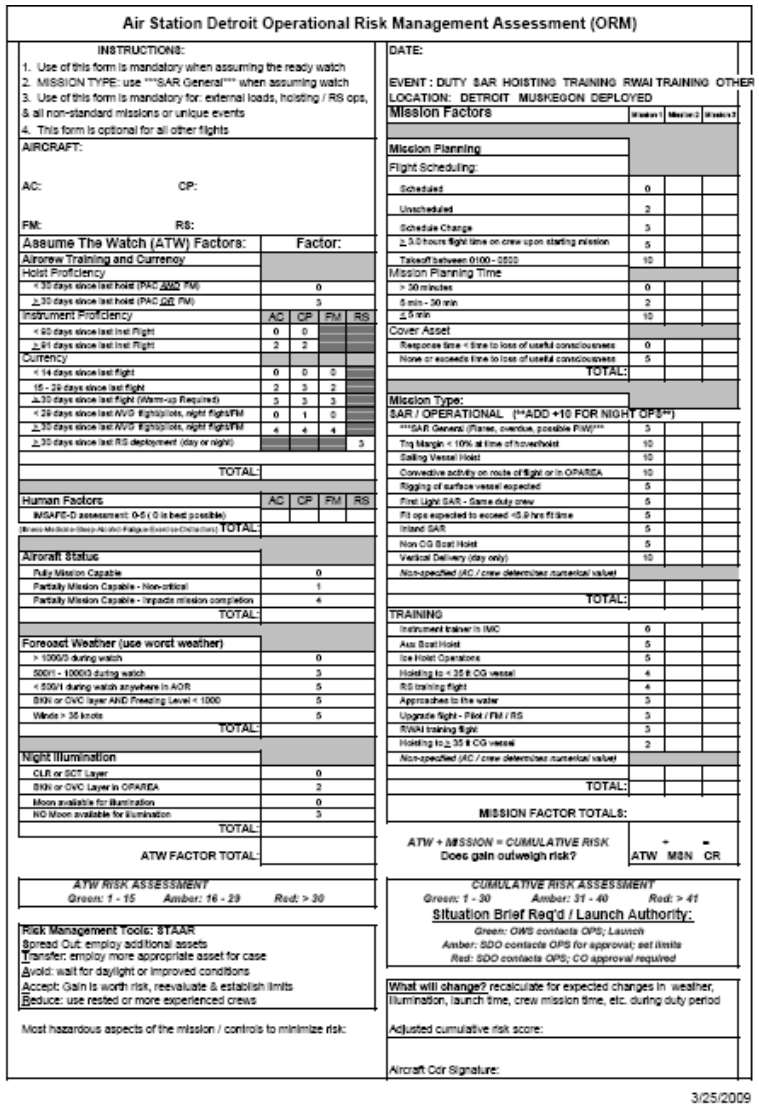
What have you done to reduce risk for this mission?
Spread Out: Use more than one asset
Transfer: Is this the right unit could someone else do it better.
Avoid: Change the time, for better light, better wx,
Accept: Is the Risk vs Gain worth it.
Reduce: Use more experienced crew, more gas, shorter mission, plan better.

What have you done to reduce risk:

REV-3 (23Jan09)

Operational Risk Management

ORM- Mission Planning Phase



Air Station Detroit Operational Risk Management Assessment (ORM)

INSTRUCTIONS:

1. Use of this form is mandatory when assuming the ready watch
2. MISSION TYPE: use ***SAR General*** when assuming watch
3. Use of this form is mandatory for: external loads, hoisting / RS ops, & all non-standard missions or unique events
4. This form is optional for all other flights

AIRCRAFT:

AC: CP:

FM: RS:

Assume The Watch (ATW) Factors:	Factor:
Aircrew Training and Currency	
Hoist Proficiency	
< 30 days since last hoist (PAC AMH FM)	0
≥ 30 days since last hoist (PAC OR FM)	3

Instrument Proficiency	AC	CP	FM	RS
< 90 days since last Inst Flight	0	0		
≥ 91 days since last Inst Flight	2	2		
Currency				
< 14 days since last flight	0	0	0	
15 - 29 days since last flight	2	3	2	
≥ 30 days since last flight (Warm-up Required)	3	3	3	
< 29 days since last AVO flights/pilot, night flight/FM	0	1	0	
≥ 30 days since last AVO flights/pilot, night flight/FM	4	4	4	
≥ 30 days since last RS deployment (day or night)				3
TOTAL:				

Human Factors	AC	CP	FM	RS
IMSAFE-D assessment: 0-5 (0 is best possible)				
(Illness-Medication-Stress-Alcohol-Fatigue-Exercise-Dehydration) TOTAL:				

Aircraft Status	
Fully Mission Capable	0
Partially Mission Capable - Non-critical	1
Partially Mission Capable - Impacts mission completion	4
TOTAL:	

Forecast Weather (use worst weather)	
> 1000/3 during watch	0
500/1 - 1000/3 during watch	3
< 500/1 during watch anywhere in AOR	5
BKN or OVC layer AND Freezing Level < 1000	5
Winds > 35 knots	5
TOTAL:	

Night Illumination	
CLR or SCT Layer	0
BKN or OVC Layer in OPAREA	2
Moon available for illumination	0
NO Moon available for illumination	3
TOTAL:	

ATW FACTOR TOTAL:

ATW RISK ASSESSMENT
Green: 1 - 15 Amber: 16 - 29 Red: > 30

Risk Management Tools: 8TAAR
Spread Out: employ additional assets
Transfer: employ more appropriate asset for case
Avoid: wait for daylight or improved conditions
Accept: Gain is worth risk, reevaluate & establish limits
Reduce: use rested or more experienced crews

Most hazardous aspects of the mission / controls to minimize risk:

DATE:

EVENT : DUTY SAR HOISTING TRAINING RWAI TRAINING OTHER
LOCATION: DETROIT MUSKEGON DEPLOYED

Mission Factors		Mission 1	Mission 2	Mission 3
Mission Planning				
Flight Scheduling:				
Scheduled	0			
Unscheduled	2			
Schedule Change	3			
≥ 5.0 hours flight time on crew upon starting mission	5			
Takeoff between 0100 - 0500	10			
Mission Planning Time				
> 30 minutes	0			
5 min - 30 min	2			
≤ 5 min	10			
Cover Asset				
Response time < time to loss of useful consciousness	0			
None or exceeds time to loss of useful consciousness	5			
TOTAL:				
Mission Type:				
SAR / OPERATIONAL (**ADD +10 FOR NIGHT OPS**)				
SAR General (Plane, overdue, possible FM)	3			
Trg Margin < 10% at time of hoist/hoist	10			
Sailing Vessel Hoist	10			
Convective activity on route of flight or in OPAREA	10			
Rigging of surface vessel expected	5			
First Light SAR - Same duty crew	5			
Flt ops expected to exceed <5.0 hrs flt time	5			
Inland SAR	5			
Non CG Boat Hoist	5			
Vertical Delivery (day only)	10			
Non-specified IAC / crew determines numerical value				
TOTAL:				
TRAINING				
Instrument trainer in IMC	6			
Ass Boat Hoist	5			
Ice Hoist Operations	5			
Hoisting to < 35 ft CG vessel	4			
RS training flight	4			
Approaches to the water	3			
Upgrade flight - Pilot / FM / RS	3			
RWAI training flight	3			
Hoisting to ≥ 35 ft CG vessel	2			
Non-specified IAC / crew determines numerical value				
TOTAL:				

MISSION FACTOR TOTALS:

ATW + MISSION = CUMULATIVE RISK
Does gain outweigh risk?

+	=
ATW	MSN CR

CUMULATIVE RISK ASSESSMENT
Green: 1 - 30 Amber: 31 - 40 Red: > 41

Situation Brief Req'd / Launch Authority:
Green: CWS contacts OPS; Launch
Amber: SDO contacts OPS for approval; set limits
Red: SDO contacts OPS; CO approval required

What will change? recalculate for expected changes in weather, illumination, launch time, crew mission time, etc. during duty period

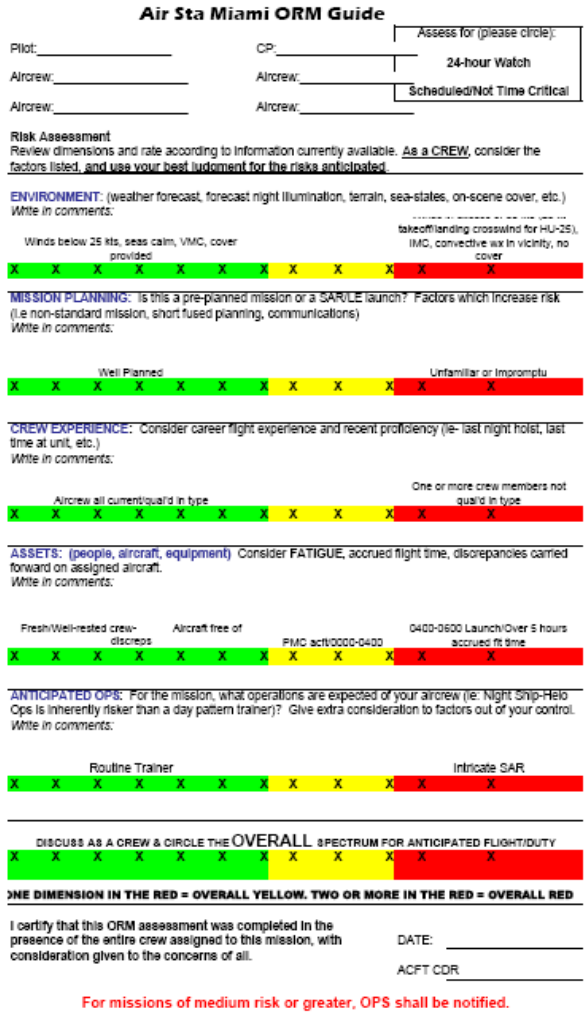
Adjusted cumulative risk score:

Aircraft Cdr Signature:

3/25/2009

Operational Risk Management

ORM- Mission Planning Phase



Air Sta Miami ORM Guide

Pilot:_____ CP:_____ Assess for (please circle): 24-hour Watch / Scheduled/Not Time Critical

Aircrew:_____ Aircrew:_____

Aircrew:_____ Aircrew:_____

Risk Assessment

Review dimensions and rate according to information currently available. As a CREW, consider the factors listed, and use your best judgment for the risks anticipated.

ENVIRONMENT: (weather forecast, forecast night illumination, terrain, sea-states, on-scene cover, etc.)
Write in comments:

Winds below 25 kts, seas calm, VMC, cover provided — takeoff/landing crosswind for HU-25), IMC, convective wx in vicinity, no cover

MISSION PLANNING: Is this a pre-planned mission or a SAR/LE launch? Factors which increase risk (i.e non-standard mission, short fused planning, communications)
Write in comments:

Well Planned — Unfamiliar or Impromptu

CREW EXPERIENCE: Consider career flight experience and recent proficiency (ie- last night hoist, last time at unit, etc.)
Write in comments:

Aircrew all current/qual'd in type — One or more crew members not qual'd in type

ASSETS: (people, aircraft, equipment) Consider FATIGUE, accrued flight time, discrepancies carried forward on assigned aircraft.
Write in comments:

Fresh/Well-rested crew- discreps — Aircraft free of PMC acft/0000-0400 — 0400-0600 Launch/Over 5 hours accrued flt time

ANTICIPATED OPS: For the mission, what operations are expected of your aircrew (ie: Night Ship-Helo Ops is inherently risker than a day pattern trainer)? Give extra consideration to factors out of your control.
Write in comments:

Routine Trainer — Intricate SAR

DISCUSS AS A CREW & CIRCLE THE OVERALL SPECTRUM FOR ANTICIPATED FLIGHT/DUTY

ONE DIMENSION IN THE RED = OVERALL YELLOW. TWO OR MORE IN THE RED = OVERALL RED

I certify that this ORM assessment was completed in the presence of the entire crew assigned to this mission, with consideration given to the concerns of all.

DATE:_____

ACFT CDR_____

For missions of medium risk or greater, OPS shall be notified.

Homeland Security

Operational Risk Management

ORM- Mission Briefing Phase

CREW BRIEF

1. Planning/Event (1-5)
   a. Define Mission
   b. Complexity
   c. Flight plan
   d. Emergency/Emergency Egress
2. Asset
   a. Crew (1-5)
      i. I'M SAFE
      ii. Last flight/hoist?
   b. Aircraft (1-5)
      i. Fuel load
      ii. Maintenance Checks
      iii. Special/survival equipment (NVG's, pumps, SLDMB, etc)
3. Communications (1-5)
   a. Radio guard
   b. Crew duties
   c. CRM (wave-off authority, sterile cockpit, two challenge rule, set limits, etc.)
4. Environment (1-5)
   a. Weather (take off, enroute, destination)
   b. Time of day
   c. Sunrise/set / Moon rise/set/%illum
   d. Water temps (RS ops/ADC/escort requirements)

Control options

1. Spread out – additional assets/cover
2. Transfer – is there a different/ better asset
3. Avoid – Circumvent hazard (wait for daylight or improvement in weather)
4. Accept – Assume the risk if the gain outweighs the risk
5. Reduce – Reduce or limit risk (fresh crew, more precomms)

Risk vs Gain

Low gain: Situations with intangible benefits or a low probability for providing concrete results. Examples include non-operational passenger transport, non-critical logistics missions, PAO demonstrations.
Medium gain: Situations that provide immediate, tangible benefits. Examples include saving property, protecting the environment, deterring illegal operations.
High gain: Situations that provide immediate tangible benefits that if ignored could result in loss of life. Examples include SAR, MEDEVAC's, anti-terrorism, National Defense, Training, Operational transport (POTUS, NEST).

	High Gain	Medium Gain	Low Gain
Low Risk	Accept the mission. Continue to monitor risk factors, if conditions or mission changes.	Accept the mission. Continue to monitor risk factors, if conditions or mission changes.	Accept the mission. Continue to monitor risk factors, if conditions or mission changes.
Medium Risk	For unscheduled launches; SDO notify OPS Officer of launch. Accept the mission. Continue to monitor risks associated with mission changes.	For unscheduled launches; SDO notify OPS Officer of launch. Accept the mission. Continue to monitor risks associated with mission changes.	Contact OPS Officer for permission to proceed. If unable to contact OPS, contact CO for permission. If neither CO nor OPS is available refer to SDO/A-OPS.
High Risk	Contact OPS Officer for permission to proceed. If unable to contact OPS, contact CO for permission. If neither CO or OPS available refer to SDO/A-OPS.	Contact OPS Officer for permission to proceed/continue with mission. OPS must discuss with CO and gain CO approval prior to aircraft proceeding on mission. Actively pursue control options to reduce risk.	Do not accept mission. Wait until risk factors change. Contact OPS Officer to discuss details of the mission.

Aircrew Debriefing Guide

1. Self Assessment
   (Each Crewmember, External Players)
2. Mission Analysis
   (Were mission goals met? No; Why?)
3. CRM Assessment (Situational Awareness, Communications, Assertiveness, Risk Assessment, Leadership & Decision Making)
4. ORM Evaluations
   (Hazards & Risk Mitigation Effectiveness)
5. Areas of Improvement
6. Aircraft: Maintenance Write-ups/Concerns

Operational Risk Management

ORM- Mission Execution Phase

Operational Risk Management

ORM- Mission Debriefing Phase

CREW BRIEF

1. Planning/Event (1-5)
   a. Define Mission
   b. Complexity
   c. Flight plan
   d. Emergency/Emergency Egress
2. Asset
   a. Crew (1-5)
      i. I'M SAFE
      ii. Last flight/hoist?
   b. Aircraft (1-5)
      i. Fuel load
      ii. Maintenance Checks
      iii. Special/survival equipment (NVG's, pumps, SLDMB, etc)
3. Communications (1-5)
   a. Radio guard
   b. Crew duties
   c. CRM (wave-off authority, sterile cockpit, two challenge rule, set limits, etc.)
4. Environment (1-5)
   a. Weather (take off, enroute, destination)
   b. Time of day
   c. Sunrise/set / Moon rise/set/%illum
   d. Water temps (RS ops/ADC/escort requirements)

Control options

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3. Avoid – Circumvent hazard (wait for daylight or improvement in weather)
4. Accept – Assume the risk if the gain outweighs the risk
5. Reduce – Reduce or limit risk (fresh crew, more precomms)

Risk vs Gain

Low gain: Situations with intangible benefits or a low probability for providing concrete results. Examples include non-operational passenger transport, non-critical logistics missions, PAO demonstrations.
Medium gain: Situations that provide immediate, tangible benefits. Examples include saving property, protecting the environment, deterring illegal operations.
High gain: Situations that provide immediate tangible benefit that if ignored could result in loss of life. Examples include SAR, MEDEVAC's, anti-terrorism, National Defense, Training, Operational transport (POTUS, NEST).

	High Gain	Medium Gain	Low Gain
Low Risk	Accept the mission. Continue to monitor risk factors, if conditions or mission changes.	Accept the mission. Continue to monitor risk factors, if conditions or mission changes.	Accept the mission. Continue to monitor risk factors, if conditions or mission changes.
Medium Risk	For unscheduled launches; SDO notify OPS Officer of launch. Accept the mission. Continue to monitor risks associated with mission changes.	For unscheduled launches; SDO notify OPS Officer of launch. Accept the mission. Continue to monitor risks associated with mission changes.	Contact OPS Officer for permission to proceed. If unable to contact OPS, contact CO for permission. If neither CO nor OPS is available refer to SDO/A-OPS.
High Risk	Contact OPS Officer for permission to proceed. If unable to contact OPS, contact CO for permission. If neither CO or OPS available refer to SDO/A-OPS.	Contact OPS Officer for permission to proceed/continue with mission. OPS must discuss with CO and gain CO approval prior to aircraft proceeding on mission. Actively pursue control options to reduce risk.	Do not accept mission. Wait until risk factors change. Contact OPS Officer to discuss details of the mission.

Aircrew Debriefing Guide

1. Self Assessment
   (Each Crewmember, External Players)
2. Mission Analysis
   (Were mission goals met? No; Why?)
3. CRM Assessment (Situational Awareness, Communications, Assertiveness, Risk Assessment, Leadership & Decision Making)
4. ORM Evaluations
   (Hazards & Risk Mitigation Effectiveness)
5. Areas of Improvement
6. Aircraft: Maintenance Write-ups/Concerns

Crew Endurance Management

CG Policy

- Established in COMSTINST I3500.2
- Detailed Process Guide for conducting required Risk Factor Assessment (RFA)
  - Required annually or when appropriate (OPTEMPO or mission change)
  - Dr. Tony Carvalhais is CG-1133 SME

Homeland Security