Test Hazard Analysis Worksheet

Test Title:
Helicopter Stability and Control Demonstration

Aircraft/System:
All *NTPS* Helicopters

Subjective Probability of Occurrence

Hazard Category	high	probable	uncertain	remote	improbable
catastrophic					
critical	High				
marginal			Medium	Low	
negligible					

Hazard:
Exceeding helicopter sideslip limits in cruise flight

Cause:
Excessive yaw control input during lateral-directional flight test procedures.

Effect:
Tail rotor or tail boom structural damage

Minimizing Procedures:
1. Review aircraft sideslip limits prior to flight and establish a 5 deg or greater pad
2. Confirm proper functioning of sideslip indicator (if installed) prior to flight
3. At cruise speed, limit control input to reach no greater than 12 degrees of sideslip on the sideslip indicator or 2 ball widths of the trim ball (whichever is smaller)

Emergency Procedures:
1. Return to base immediately and inspect aircraft
2. If abnormal sounds or responses are present, land immediately

Risk Level (after minimizing procedures taken into account):

High ____ Medium ____ Low __X__ Hazard Category- Marginal Probability of Occurrence- Remote

Test Hazard Analysis Worksheet

Test Title:
Helicopter Stability and Control Demonstration

Aircraft/System:
All *NTPS* Aircraft

Subjective Probability of Occurrence

Hazard Category	high	probable	uncertain	remote	improbable
catastrophic					
critical	High		Medium		
marginal				Low	
negligible					

Hazard:
Exceeding V_{ne} during longitudinal dynamic stability flight test procedures

Cause:
Inattention to airspeed increase during nose down pitch response

Effect:
Aircraft structural damage

Minimizing Procedures:
1. Determine V_{ne} at test altitude based on pressure altitude and free air temperature
2. Instructor monitor airspeed following longitudinal dynamic response control input
3. Initiate recovery from nose down conditions such that recovery is complete by V_{ne} -5 kts

Emergency Procedures:
1. Return to base immediately and inspect aircraft
2. If abnormal sounds or responses are present, land immediately

Risk Level (after minimizing procedures taken into account):

High ____ Medium ____ Low __X__ Hazard Category - Marginal
Probability of Occurrence- Remote

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All NTPS Helicopters

Subjective Probability of Occurrence

Hazard Category	high	probable	uncertain	remote	improbable
catastrophic					
critical	High		Medium		
marginal				Low	
negligible					

Hazard:
Exceeding takeoff power limits during hover and low speed test procedures

Cause:
Insufficient power available for maneuver and conditions
Maintaining takeoff power levels in excess of imposed time limitations

Effect:
Engine damage

Minimizing Procedures:
1. Review pertinent limitations prior to flight
2. Impose a reduced power buffer on takeoff power limits based on specific aircraft being used
3. Use small power control inputs when operating near limiting conditions
4. Monitor time power is within the takeoff range
5. Reduce gross weight if required

Example of reduced power buffer for H-500
Actual takeoff power limits: 80.3 psi torque 749°C TOT
Reduced power buffer: 78 psi torque 730°C TOT

Emergency Procedures:
1. Land and shut down

Risk Level (after minimizing procedures taken into account):
High ____ Medium ____ Low __X__
Hazard Category- Marginal
Probability of Occurrence- Remote

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All *NTPS* Helicopters

Hazard	Subjective Probability of Occurrence				
	high	probable	uncertain	remote	improbable
catastrophic					
critical	High		Medium		
marginal				Low	
negligible					

Hazard:

Inadvertent ground contact during low speed flight

Cause:

Failure to maintain adequate ground clearance during flight or during recovery
Loss of power
Loss of tail rotor thrust

Effect:

Damage to aircraft due to tipping or rollover if contact occurs in other than forward flight
Injury to flight crew

Minimizing Procedures:

1. Brief height control prior to flight
2. Brief recovery procedures prior to flight
3. Brief emergency procedures prior to flight
4. Apply smooth decelerating control inputs during recovery and do not use abrupt or excessive nose down inputs
5. Instructor assure adequate height is maintained during lowspeed flight
6. When using a van, van observer can call abort

Emergency Procedures:

1. Maintain level attitude of aircraft

Risk Level (after minimizing procedures taken into account):

High ____ Medium ____ Low __X__ Hazard Category- Marginal
Probability of Occurrence- Remote

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Aircraft/System:

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Subjective Probability of Occurrence

Hazard	high	probable	uncertain	remote	improbable
catastrophic					
critical	High		Medium		
marginal					
negligible				Low	

Hazard:

Inadvertent contact with pace vehicle during lowspeed flight

Cause:

Failure to maintain adequate clearance from the pace vehicle

Effect:

Damage to aircraft and pace vehicle

Injury to crew

Minimizing Procedures:

1. Maintain two rotor disk separation from pace vehicle at all times
2. Remain aware of relative position in relation to vehicle at all times
3. Make smooth, small control inputs to adjust relative position
4. Instructor remain alert to need for correcting position
5. Vehicle stays on straight course adequately clear of runway being used and makes all turns away from aircraft
6. Vehicle driver or crew person maintain visual contact with aircraft and take evasive action when required

Emergency Procedures:

1. Maintain level attitude and land immediately

Risk Level (after minimizing procedures taken into account):

High ____ Medium ____ Low _X_ Hazard Category- Marginal Probability of Occurrence- Remote