

		ASN	2009-WSA-60-COA	
		Case Status	EXP RED	
		Date Created	04/21/2009	
		Date Submitted	04/26/2009	
Proponent Organization		Sponsor	NOAA Unmanned Aircraft Systems Working Group	
		Attn Of	(b) (6)	
		Address	P.O. Box 273, Mail Stop 4830A	
		Address2	NASA Dryden Flight Research Center	
		City	Edwards	
		State	CA	
		Postal Code	93523	
		Telephone	(661) 276-7421	
Declaration		Email	(b) (6)	
		Declaration(a)	Yes	
		Declaration(b)	Yes	
Point of Contact		Representative	(b) (6)	
		Address	P.O. Box 273, Mail Stop 4830A	
		Address2	NASA Dryden Flight Research Center	
		City	Edwards	
		State	CA	
		Postal Code	93523	
		Telephone	(661) 276-7421	
		Email	(b) (6)	
Operational Description	Requested Effective Period	Beginning		
		End		
			Light out operation	No
			VFR operation	Yes
			IFR operation	No
			Day operation	Yes
			Night operation	No
		Program Executive Summary	<p>Program Executive Summary</p> <p>We intend to evaluate the Insight A-20 for surveying off of the NOAA Ship McArthur II in the Bering Sea pack ice. Digital and infrared cameras mounted on the UAS will record geo-referenced images of the sea ice and seals below. These images will be analyzed for seals and relevant measures of sea ice. Concurrently, the flight characteristics (e.g. stability, speed, duration, payload, effects of icing, communications, telemetry, tasking) of the UAS will be evaluated for use in the Arctic and sub-arctic environments.</p>	
		Operational Summary	<p>Surveys will be flown at a constant altitude (between 300 and 1000 ft.) along a transect line while a downward facing digital camera collects geo-referenced images at set intervals (2-4 seconds).</p> <p>The NOAA Ship McArthur II will not traverse deep into the pack ice and will remain at or near the ice edge. The location of the ice edge is variable from year to year and impossible to predict with certainty. We have defined our potential area of operations as all ice covered U.S. waters in the eastern and central Bering Sea that are greater than 2 Nmi from the coasts. Our actual area of operations in 2009 will be restricted to the airspace within a circle of radius less than 50 Nmi (i.e., the range of the UAS radio control system) centered on the McArthur II at the southern edge of the pack ice.</p> <p>Survey flights will involve multiple long parallel transects flown perpendicular to gradients of local bathymetry and ice conditions. Images will be collected at set intervals and analyzed for the presence of seals and species identification. These flights may be as far as 50 Nmi from the ship and are expected to last approximately 10 hours.</p>	
Location		State	AK	
		County	Nome	
		Nearest Airport	NOME	
		AOR	Alaska	
Class Of Airspace		Class-A		
		Class-B		
		Class-C		
		Class-D		
		Class-E		
		Class-G	Yes	
System Description		Aircraft Type	102154766 - Scan Eagle	
		Aircraft Type And Model Description Attachment	0	
		Control Station Attachment	1	
		Communications System Attachment	1	
		List Certified Components (TSO) Attachment	1	
		Other Attachment	0	

Performance Characteristics		Climb Rate (feet/Minute)	400
		Descent Rate (feet/Minute)	400
		Turn Rate (Degrees/Second)	6
	Cruise Speed	Maximum	70
		Minimum	41
		Approach Speed	50
	Operating Attributes	Maximum MSL	20000
		Minimum MSL	300
		Gross Takeoff Wt	40.0
		Launch/Recovery Attachment	1
Airworthiness	FAA Type Certificate		
	If No FAA Certificate (Public Aircraft Only) Attachment	1	
Procedures	Lost Link/Mission Procedures Attachment	1	
	Lost Communications Procedures Attachment	1	
	Emergency Procedures Attachment	1	
Avionics/Equipment	Equipment Suffix Type	G	
	GPS	Yes	
	Moving map indicator (Command Station)	Yes	
	Tracking capability	Yes	
	TCA/MCAS	No	
	ELT	No	
	Transponder	Transponder	Yes
		On	Yes
		Off	Yes
		Standby	Yes
		Ident	Yes
		Mode S	No
		Mode C	Yes
		Transponder Retuneable in Flight	Yes
	Lights	Landing	No
Position/Navigation		No	
Anti-collision		No	
Infrared ( R )		No	
Spectrum Analysis Approval	Data Link	Yes	
	Data Link Attachment	0	
	Control Link(s)	Yes	
	Control Link Attachment	0	
	Operations utilizing Radio Control (R/C) frequencies as described in Title 47 CFR 95	No	
	NTIA/FCC Authorization Attachment	0	
ATC Communications	Transmitter VHF Band	VHF Band	No
		Quantity	
		In-Flight Retunable	No
	Transmitter UHF Band	UHF Band	No
		Quantity	
		In-Flight Retunable	No
	Transmitter HF band	HF Band	No
		Quantity	
		In-Flight Retunable	No
	Receiver VHF Band	VHF Band	No
		Quantity	
		In-Flight Retunable	No
Receiver UHF Band	UHF Band	No	
	Quantity		

		Quantity	
		In-Flight Retunable	No
	Receiver HF band	HF Band	No
		Quantity	
		In-Flight Retunable	No
	Guard (Emergency) Frequencies VHF Band	VHF Band	No
		Quantity	
	Guard (Emergency) Frequencies UHF Band	UHF Band	No
		Quantity	
	Instantaneous Two-Way Voice	Direct to pilot	No
		SATCOM	No
		Relay via aircraft	No
Electronic Surveillance/ Detection Capability		EO/IR	Yes
		Terrain detection	Yes
		Weather/icing detection	Yes
		Radar	No
		Other Attachment	0
		Electronic detection systems	No
		Electronic detection systems attachment	0
		Radar observation	Yes
		NAS Operational Capability Attachment	0
Visual Surveillance/ Detection Capability	Maximum Distance from UA	Vertical	3000 Feet
		Horizontal	1 0 Nautical Miles
		Airborne based (Chase Aircraft)	No
		Ground based	No
		Visual observation from one or more ground sites	No
		Forward or side looking cameras	Yes
		Attachment for All	1
Aircraft Performance Recording		Flight data recording	Yes
		Control station recording	Yes
		Voice Recording	No
Flight Aircrew Qualifications	Pilots	Private (Written)	Yes
		Private (Certified)	No
		Instrument	No
		Commercial	No
		Air Transport	No
		Unique Trained Pilot	Yes
		Unique Trained Pilot Description	See Attachment
		DOD certified/trained	No
		Other Certified Training	No
		Trained on FAR Part 91 Requirement	Yes
		Medical Certification Class (FAA or DOD equivalent)	2
		Currency Status	Pilot in Charge (PIC) is current. In order to maintain currency the Insight A-20 UA PIC must perform a minimum of three qualified proficiency events within the past 90 days with the Insight A-20 or a compatible simulator. A proficiency event will include a takeoff and landing.

			<p>Crewmembers are required to monitor their schedules and raise awareness if they cannot achieve adequate crew rest Standard guidelines for the crew are as follows:</p> <ol style="list-style-type: none"> <li>1. Crew rest time is 8 hours of uninterrupted time where the crewmember does not have tasking to accomplish and is allowed to rest. Should a crewmember change shift from one cycle (day or night or defined shift) to another, 12 hours of rest shall be used instead of 8.</li> <li>2. The duty day is the period of time where a crewmember is present and engaged in system setup, planning, pre-flight briefing, mission flight, post-flight debriefing, and cleanup. Periodic breaks including extended breaks for meals should be afforded the crewmembers to allow them to refresh their efforts and not become task-saturated.</li> <li>3. A duty day less than 10 hours with periodic breaks should not overly fatigue the crew. Such a schedule should allow sufficient time to recover and be sustainable for a 6 day work week.</li> <li>4. A duty day between 10 and 16 hours with periodic breaks should be sustainable so long as 8 hours of crew rest is provided each day.</li> <li>5. A duty day greater than 16 hours will be fatiguing to the crewmember and will also disrupt their sleep cycle, contributing to greater fatigue. Should a duty day greater than 16 hours be necessary, care should be exercise that the crewmember be adequately rested before the day, be afforded periodic breaks and recovery time during the day, and have a minimum of 12 hours of crew rest after the duty day to recover.</li> </ol> <p>Crewmembers shall evaluate their tasking and rest schedule to determine their ability to perform their duties.</p>
		Duty Time Restrictions	
		Single UAS Control	Yes
		UAS Description	n/a
		Total Numbers of UAS Controlled	1
	Observers	Private (Written)	No
		Private (Certified)	No
		Instrument	No
		Commercial	No
		Air Transport	No
		Unique Trained Pilot	Yes
		Unique Trained Pilot Description	See Attachment
		DOD certified/trained	No
		Other Certified Training	No
		Trained on FAR Part 91 Requirement	Yes
		DOD Certified Training Attachment	2
		Medical Certification Class (FAA or DOD equivalent)	2
		Currency Status	Visual Observers (VO). All VO are current. In order to maintain currency a VO must have been a VO for an Insight UA flight operation or participated in VO refresher training within the past 90 days.
			<p>Crewmembers are required to monitor their schedules and raise awareness if they cannot achieve adequate crew rest Standard guidelines for the crew are as follows:</p> <ol style="list-style-type: none"> <li>1. Crew rest time is 8 hours of uninterrupted time where the crewmember does not have tasking to accomplish and is allowed to rest. Should a crewmember change shift from one cycle (day or night or defined shift) to another, 12 hours of rest shall be used instead of 8.</li> <li>2. The duty day is the period of time where a crewmember is present and engaged in system setup, planning, pre-flight briefing, mission flight, post-flight debriefing, and cleanup. Periodic breaks including extended breaks for meals should be afforded the crewmembers to allow them to refresh their efforts and not become task-saturated.</li> <li>3. A duty day less than 10 hours with periodic breaks should not overly fatigue the crew. Such a schedule should allow sufficient time to recover and be sustainable for a 6 day work week.</li> <li>4. A duty day between 10 and 16 hours with periodic breaks should be sustainable so long as 8 hours of crew rest is provided each day.</li> <li>5. A duty day greater than 16 hours will be fatiguing to the crewmember and will also disrupt their sleep cycle, contributing to greater fatigue. Should a duty day greater than 16 hours be necessary, care should be exercise that the crewmember be adequately rested before the day, be afforded periodic breaks and recovery time during the day, and have a minimum of 12 hours of crew rest after the duty day to recover.</li> </ol> <p>Crewmembers shall evaluate their tasking and rest schedule to determine their ability to perform their duties.</p>
		Duty Time Restrictions	
		Single UAS Control	Yes
		UAS Description	n/a
		Total Numbers of UAS Controlled	1
Special Circumstances		Special Circumstances	<p>There are three issues associated with this application:</p> <ol style="list-style-type: none"> <li>1. The area map would not upload without at least one waypoint entered. Disregard the waypoint in the document, the point picked was the closest to land within the desired operating area.</li> <li>2. The airport listed on the Operational Description portion appears to be incorrect. If it's taken from the Operations Area/Plan portion it should show Mekoryuk (MYU) on Nunivak Island.</li> <li>3. The dates requested are incorrect. The system limits this to 60 days from the submission date. Dates requested are May 13 2009 through May 12 2010.</li> </ol>

Flight Operations Area/Plan

Type	User Defin Point	Loc ID	Degree	Distance	Latitude	Longitude	MSL Ceilin
DEPARTURE							

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Total Map Attachment 1

MSL Floor Maximum	Minimum S Radius	SUA Description	
	64-04-54.00N	166-22-51.00W	3000

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300

70

41

100.0