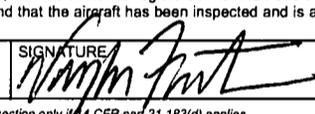
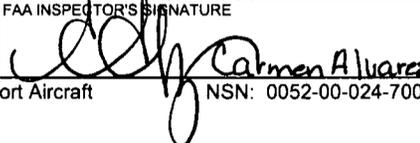
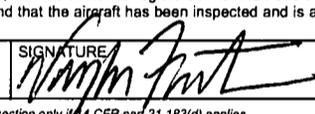
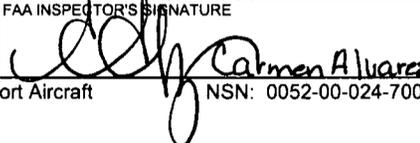
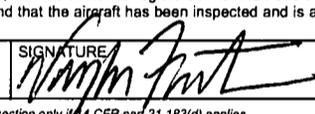
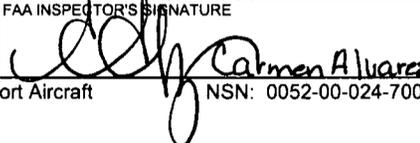
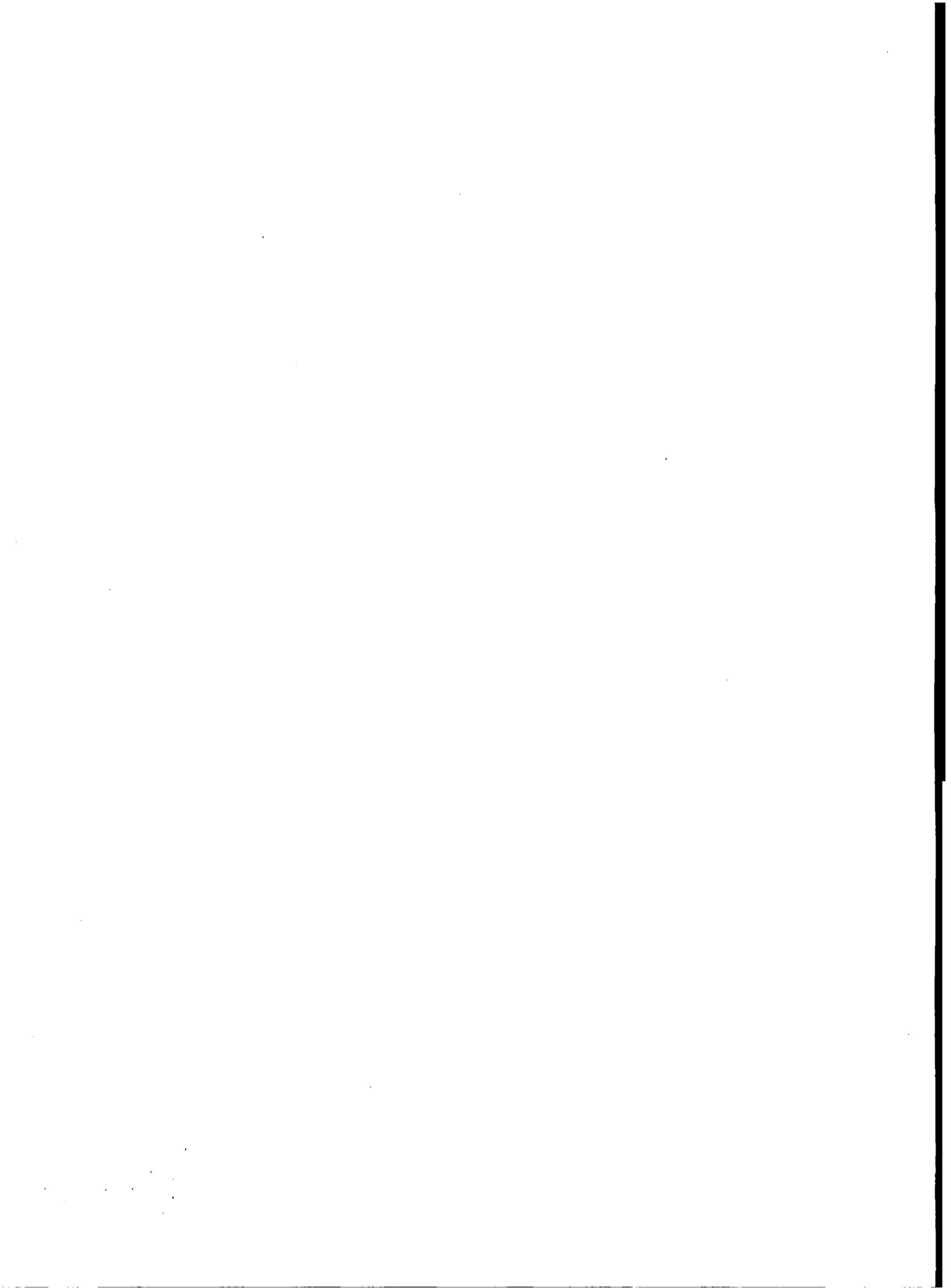


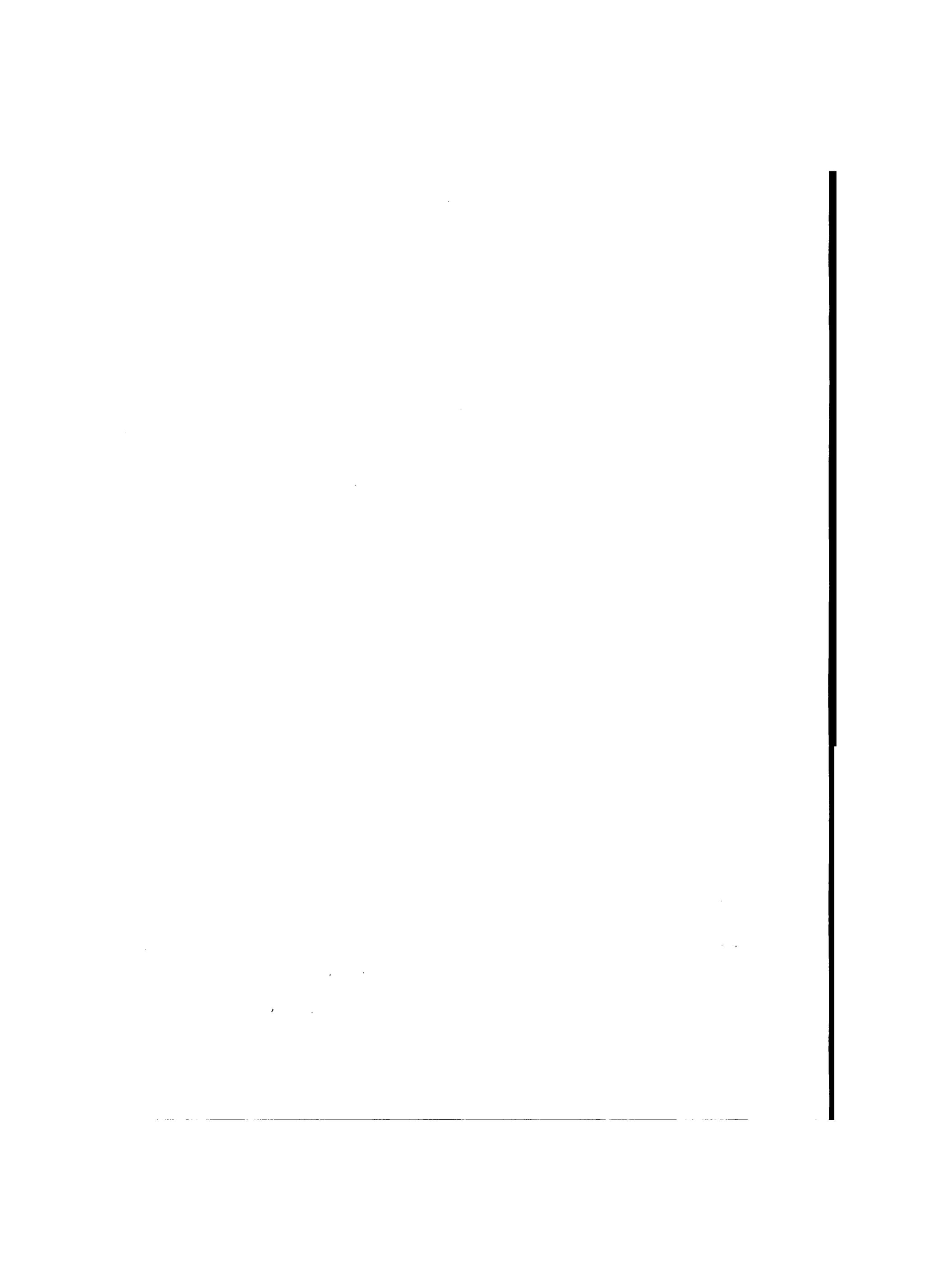
FAA FORM 8130-6, APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE

Form Approved O.M.B. No. 2120-0018  
09/30/2007

 <p>U.S. Department of Transportation Federal Aviation Administration</p>		<p><b>APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE</b></p>		<p><b>INSTRUCTIONS</b> - Print or type. Do not write in shaded areas; these are for FAA use only. Submit original only to an authorized FAA Representative. If additional space is required, use attachment. For special flight permits complete Sections II, VI and VII as applicable.</p>																																																																																																																																																																																																																																																																																																																							
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B. Inspection for a special permit under Section VII was conducted by:				<input type="checkbox"/> AMENDMENT OR MODIFICATION OF CURRENT AIRWORTHINESS CERTIFICATE																																																																																																																																																																																																																																																																																																																							
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<b>VI. PRODUCTION FLIGHT TESTING</b>	A. MANUFACTURER				
	NAME		ADDRESS		
	B. PRODUCTION BASIS <i>(Check applicable item)</i>				
	<input type="checkbox"/> PRODUCTION CERTIFICATE <i>(Give production certificate number)</i>		<input type="checkbox"/> TYPE CERTIFICATE ONLY		
	<input type="checkbox"/> APPROVED PRODUCTION INSPECTION SYSTEM				
C. GIVE QUANTITY OF CERTIFICATES REQUIRED FOR OPERATING NEEDS					
DATE OF APPLICATION		NAME AND TITLE <i>(Print or Type)</i>		SIGNATURE	
<b>VII. SPECIAL FLIGHT PERMIT PURPOSES OTHER THAN PRODUCTION FLIGHT TEST</b>	A. DESCRIPTION OF AIRCRAFT				
	REGISTERED OWNER		ADDRESS		
	BUILDER <i>(Make)</i>		MODEL		
	SERIAL NUMBER		REGISTRATION MARK		
	B. DESCRIPTION OF FLIGHT				
	FROM		TO		
	VIA		DEPARTURE DATE	DURATION	
	C. CREW REQUIRED TO OPERATE THE AIRCRAFT AND ITS EQUIPMENT				
	<input type="checkbox"/> PILOT		<input type="checkbox"/> CO-PILOT	<input type="checkbox"/> FLIGHT ENGINEER	<input type="checkbox"/> OTHER <i>(Specify)</i>
	D. THE AIRCRAFT DOES NOT MEET THE APPLICABLE AIRWORTHINESS REQUIREMENTS AS FOLLOWS:				
	E. THE FOLLOWING RESTRICTIONS ARE CONSIDERED NECESSARY FOR SAFE OPERATION: <i>(Use attachment if necessary)</i>				
	F. CERTIFICATION – I hereby certify that I am the registered owner (or his agent) of the aircraft described above; that the aircraft is registered with the Federal Aviation Administration in accordance with Title 49 of the United States Code 44101 <u>et seq.</u> , and applicable Federal Aviation Regulations; and that the aircraft has been inspected and is safe for the flight described.				
	DATE		NAME AND TITLE <i>(Print or Type)</i>		SIGNATURE
<b>VIII. AIRWORTHINESS DOCUMENTATION (FAA/DESIGNEE use only)</b>	A. Operating Limitations and Markings in Compliance with 14 CFR Section 91.9, as applicable.		G. Statement of Conformity, FAA Form 8130-9 <i>(Attach when required)</i>		
	<input checked="" type="checkbox"/> B. Current Operating Limitations Attached		H. Foreign Airworthiness Certification for Import Aircraft <i>(Attach when required)</i>		
	<input type="checkbox"/> C. Data, Drawings, Photographs, etc. <i>(Attach when required)</i>		<input checked="" type="checkbox"/> I. Previous Airworthiness Certificate Issued in Accordance with 14 CFR Section <u>21.191(g)(e)(f)</u> CAR _____ <i>(Original Attached)</i>		
	<input checked="" type="checkbox"/> D. Current Weight and Balance information Available in Aircraft		<input checked="" type="checkbox"/> J. Current Airworthiness Certificate Issued in Accordance with 14 CFR Section <u>21.191(g)(c)(f)</u> _____ <i>(Copy Attached)</i>		
	<input type="checkbox"/> E. Major Repair and Alteration, FAA Form 337 <i>(Attach when required)</i>		<input checked="" type="checkbox"/> K. Light-Sport Aircraft Statement of Compliance, FAA Form 8130-15 <i>(Attach when required)</i>		
	<input checked="" type="checkbox"/> F. This inspection Recorded in Aircraft Records				



Copy

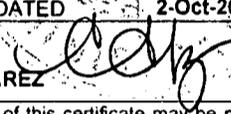
UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION <b>SPECIAL AIRWORTHINESS CERTIFICATE</b>		
<b>A</b>	CATEGORY/DESIGNATION	EXPERIMENTAL (UNMANNED AIRCRAFT)
	PURPOSE	RESEARCH AND DEVELOPMENT OR MARKET SURVEY OR CREW TRAINING
<b>B</b>	MANUFACTURER	NAME N/A
		ADDRESS N/A
<b>C</b>	FLIGHT	FROM N/A
		TO N/A
<b>D</b>	N- 3047W	SERIAL NO. 07010320
	BUILDER HONEYWELL INTERNATIONAL	MODEL gMAV
	DATE OF ISSUANCE 2-Oct-2009	EXPIRY 1-Oct-2010
	OPERATING LIMITATIONS DATED 2-Oct-2009	ARE PART OF THIS CERTIFICATE
<b>E</b>	SIGNATURE OF FAA REPRESENTATIVE	DESIGNATION OR OFFICE NO.
	CARMEN ALVAREZ 	SW MIDO-42

Any alteration, reproduction or misuse of this certificate may be punishable by a fine not exceeding \$1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE TITLE 14, CODE OF FEDERAL REGULATIONS (CFR).

<b>A</b>	This airworthiness certificate is issued under the authority of Public Law 104-6, 49 United States Code (USC) 44704 and Title 14 Code of Federal Regulations (CFR).
<b>B</b>	The airworthiness certificate authorizes the manufacturer named on the reverse side to conduct production flight tests, and only production flight tests, of aircraft registered in his name. No person may conduct production flight tests under this certificate: (1) Carrying persons or property for compensation or hire; and/or (2) Carrying persons not essential to the purpose of the flight.
<b>C</b>	This airworthiness certificate authorizes the flight specified on the reverse side for the purpose shown in Block A.
<b>D</b>	This airworthiness certificate certifies that as of the date of issuance, the aircraft to which issued has been inspected and found to meet the requirements of the applicable CFR. The aircraft does not meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention On International Civil Aviation. No person may operate the aircraft described on the reverse side: (1) except in accordance with the applicable CFR and in accordance with conditions and limitations which may be prescribed by the Administrator as part of this certificate; (2) over any foreign country without the special permission of that country.
<b>E</b>	Unless sooner surrendered, suspended, or revoked, this airworthiness certificate is effective for the duration and under the conditions prescribed in 14 CFR, Part 21, Section 21.181 or 21.217.

UNITED STATES OF AMERICA  
DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

**SPECIAL AIRWORTHINESS CERTIFICATE**

<b>A</b>	CATEGORY/DESIGNATION		EXPERIMENTAL (UNMANNED AIRCRAFT)
	PURPOSE		RESEARCH AND DEVELOPMENT OR MARKET SURVEY OR CREW TRAINING
<b>B</b>	MANU-FACTURER	NAME	N/A
		ADDRESS	N/A
<b>C</b>	FLIGHT	FROM	N/A
		TO	N/A
<b>D</b>	N- 3047W	SERIAL NO.	07010320
	BUILDER	HONEYWELL INTERNATIONAL	MODEL gMAV
<b>E</b>	DATE OF ISSUANCE	2-Oct-2009	EXPIRY 1-Oct-2010
	OPERATING LIMITATIONS DATED 2-Oct-2009 ARE PART OF THIS CERTIFICATE		
<b>E</b>	SIGNATURE OF FAA REPRESENTATIVE		DESIGNATION OR OFFICE NO.
	CARMEN ALVAREZ 		SW MIDO-42

Any alteration, reproduction or misuse of this certificate may be punishable by a fine not exceeding \$1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE TITLE 14, CODE OF FEDERAL REGULATIONS (CFR).



UNITED STATES OF AMERICA  
DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION  
**SPECIAL AIRWORTHINESS CERTIFICATE**

<b>A</b>	CATEGORY/DESIGNATION	Experimental (Unmanned Aircraft)	
	PURPOSE	R&D or Crew Training or Market Survey	
<b>B</b>	MANUFACTURER	NAME	N/A
		ADDRESS	N/A
<b>C</b>	FLIGHT	FROM	N/A
		TO	N/A
<b>D</b>	N- 3047W	SERIAL NO.	07010320
	BUILDER Honeywell International	MODEL	qMAV
<b>E</b>	DATE OF ISSUANCE	7/31/08	EXPIRY 7/30/09
	OPERATING LIMITATIONS DATED 7/31/08		ARE PART OF THIS CERTIFICATE
	SIGNATURE OF FAA REPRESENTATIVE	DESIGNATION OR OFFICE NO.	
	<i>James M. Fote</i> James M. Fote	VISTRA SW-MIDO-43	

Any alteration, reproduction or misuse of this certificate may be punishable by a fine not exceeding \$1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE TITLE 14, CODE OF FEDERAL REGULATIONS (CFR).

<b>A</b>	This airworthiness certificate is issued under the authority of Public Law 104-6, 49 United States Code (USC) 44704 and Title 14 Code of Federal Regulations (CFR).
<b>B</b>	The airworthiness certificate authorizes the manufacturer named on the reverse side to conduct production flight tests, and only production flight tests, of aircraft registered in his name. No person may conduct production flight tests under this certificate: (1) Carrying persons or property for compensation or hire; and/or (2) Carrying persons not essential to the purpose of the flight.
<b>C</b>	This airworthiness certificate authorizes the flight specified on the reverse side for the purpose shown in Block A.
<b>D</b>	This airworthiness certificate certifies that as of the date of issuance, the aircraft to which issued has been inspected and found to meet the requirements of the applicable CFR. The aircraft does not meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention On International Civil Aviation. No person may operate the aircraft described on the reverse side: (1) except in accordance with the applicable CFR and in accordance with conditions and limitations which may be prescribed by the Administrator as part of this certificate; (2) over any foreign country without the special permission of that country.
<b>E</b>	Unless sooner surrendered, suspended, or revoked, this airworthiness certificate is effective for the duration and under the conditions prescribed in 14 CFR, Part 21, Section 21.181 or 21.217.

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Ft. Worth Manufacturing Inspection District Office  
SW MIDO-42  
2601 Meacham Boulevard  
Fort Worth, TX 76137

**Operating Limitations**  
**Experimental: Research and Development, Market Survey,**  
**and/or Crew Training**

<b>Registered Owner Name:</b> Honeywell International	<b>Aircraft Builder:</b> Honeywell International
<b>Registered Owner Address:</b> 9201 San Mateo Blvd., NE Albuquerque, NM 87113-2227	<b>Year Manufactured:</b> 2007
<b>Aircraft Description:</b> Micro Unmanned Air Vehicle	<b>Aircraft Serial Number:</b> 07010320
<b>Aircraft Registration:</b> N3047W	<b>Aircraft Model Designation:</b> gMAV
	<b>Engine Model:</b> 3W56iB2-CS

**The following conditions and limitations apply to all unmanned aircraft system (UAS) flight operations for the Honeywell gMAV while operating in the National Airspace System (NAS).**

**1. General Information.**

**a. Integrated system.** For the purposes of this special airworthiness certificate and operating limitations, the Honeywell gMAV operated by Honeywell International is considered to be an integrated system. The system is composed of the following:

- (1) Honeywell gMAV, S/N 07010320
- (2) UAS control station(s), fixed, mobile, or ground-based.
- (3) Telemetry, launch, and recovery equipment.
- (4) Communications and navigation equipment, including ground and/or airborne equipment used for command and control of the Honeywell gMAV UAS.
- (5) Equipment on the ground and in the air used for communication with other members of the flight crew, observers, air traffic control (ATC), and other users of the NAS.

**b. Compliance with 14 CFR part 61 (Certification: Pilots, Flight Instructors, and Ground Instructors) and part 91 (General Operating and Flight Rules).** Unless



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otherwise specified in this document, the UA pilot-in-command (PIC) and Honeywell International must comply with all applicable sections and parts of 14 CFR including, but not limited to, parts 61 and 91.

**c. Operational requirements.**

(1) No person may operate this UAS for other than the purpose of research and development, market survey, and/or crew training, to accomplish the flight operations outlined in Honeywell International program letter dated 08/18/2009, which describes compliance with § 21.193(d), Experimental certificates: General, and has been made available to the UA PIC.

(2) This UAS must be operated in accordance with applicable air traffic and general operating rules of part 91 and all additional limitations herein prescribed under the provisions of § 91.319(i), Aircraft having experimental certificates: Operating limitations.

(3) Honeywell International must accumulate at least 50 flight hours of flight time before customer crew training is permitted, in accordance with § 21.195(d), Experimental certificates: Aircraft to be used for market surveys, sales demonstrations, and customer crew training.

**d. UA condition.** The UA PIC must determine that the UA is in a condition for safe operation, and in a configuration appropriate for the purpose of the intended flight.

**e. Multiple-purpose operations.** When changing between operating purposes of a multiple purpose certificate, the operator must determine that the aircraft is in a condition for safe operation and appropriate for the purpose intended. A record entry will be made by an appropriately rated person (that is, an individual authorized by the applicant and acceptable to the FAA) to document that finding in the maintenance records.

**f. Operation exceptions.** No person may operate this UA to carry property for compensation or hire (§ 91.319(a)(2)).

**g. UA markings.**

(1) This UA must be marked with its U.S. registration number in accordance with part 45 or alternative marking approval issued by the FAA Production and Airworthiness Division (AIR-200).

(2) This UA must display the word *Experimental* in accordance with § 45.23(b), Display of marks, unless otherwise granted an exemption from this requirement.

**h. Required documentation.** Prior to conducting the initial gMAV flight operations, Honeywell must forward a copy of the gMAV Special Airworthiness Certificate, Operating Limitations and Program Letter to the following FAA personnel:

(1) Mr. Roger Trevino, System Support Specialist, FAA Central Service Area, System Support Group, AJO2-C2, email: [roger.trevino@faa.gov](mailto:roger.trevino@faa.gov), fax: 817-222-5547.

(2) Richard Posey, Aviation Safety Inspector, Production and Airworthiness Division, AIR-200, 950 L'Enfant Plaza SW, 5<sup>th</sup> Floor, Suite 500, Washington, DC 20024, telephone (202) 385-6378, email [richard.posey@faa.gov](mailto:richard.posey@faa.gov).

**i. Change in registrant address.** Section 47.45, Change of address, requires that the FAA Aircraft Registry be notified within 30 days of any change in the aircraft registrant's address. Such notification is to be made by providing AC Form 8050-1, Aircraft



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Registration Application, to the FAA Aircraft Registration Branch (AFS-750) in Oklahoma City, Oklahoma.

**j. Certificate display and manual availability.** The airworthiness and registration certificates must be displayed, and the aircraft flight manual must be available to the pilot, as prescribed by the applicable sections of 14 CFR, or as prescribed by an exemption granted in accordance with 14 CFR part 11, General Rulemaking Procedures, to Honeywell International.

**2. Program Letter.** The Honeywell International gMAV program letter, dated 08/18/09, will be used as a basis for determining the operating limitations prescribed in this document. All flight operations must be conducted in accordance with the provisions of this document.

**3. Initial Flight Testing.**

**a. Requirements.** Flight operations shall be conducted within visual line of sight of the pilot/observer. Initial flight-testing shall be completed when the pilot in command can certify compliance with § 91.319(b). Compliance with § 91.319(b) must be recorded in the aircraft records with the following, or a similarly worded, statement:

“I certify that the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous operating characteristics or design features, and is safe for operation.”

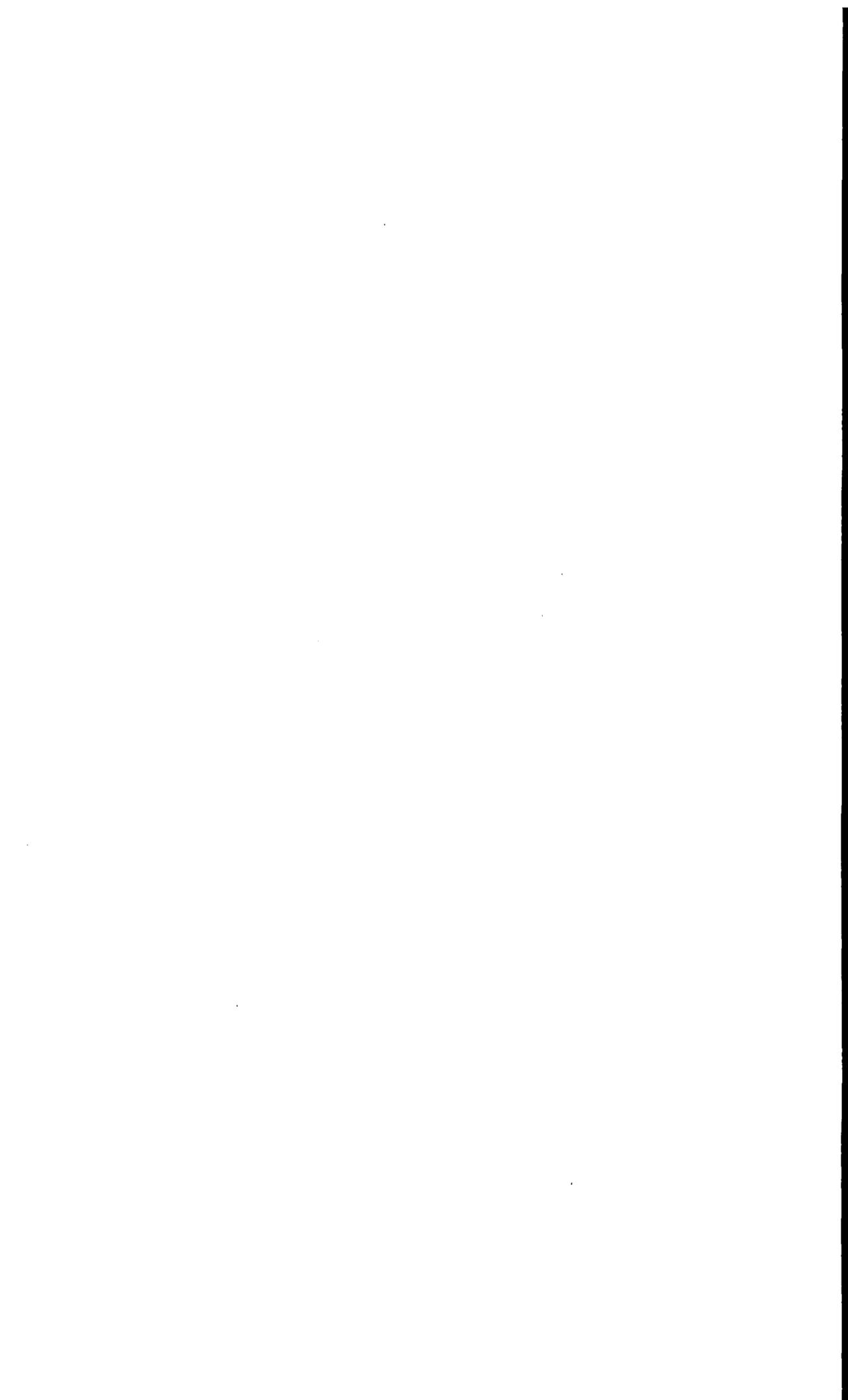
**b. Aircraft operations for the purpose of market surveys, sales demonstrations, and customer crew training.** These operations cannot be performed until 50 flight hours have been accomplished. An entry in the maintenance records is required as evidence of compliance.

**4. Authorized Flight Operations Area.**

**a. Description of the authorized flight operations area.**

1. The primary containment area for flight test will be on the property of the Laguna Pueblo, New Mexico. This area is approximately 60 miles west of the Honeywell facility. It is a remote, desert terrain area with restricted access controlled by the government of the Laguna Pueblo. The attached map shows the layout and the operational area. Population areas near the site are (1) State Hwy 279 which runs through the southwest section, (2) a small housing community approximately 0.5 miles to the northwest, and (3) Interstate 40 approximately 5.5 miles to the south.

2. A second area for flight test is located on the property of the New Mexico Army National Guard (NMARNG). This area is approximately 20 miles from the Honeywell facility. It is a semi-remote, desert terrain area with access controlled by the NMARNG. The attached Google map shows the layout and the operational area.



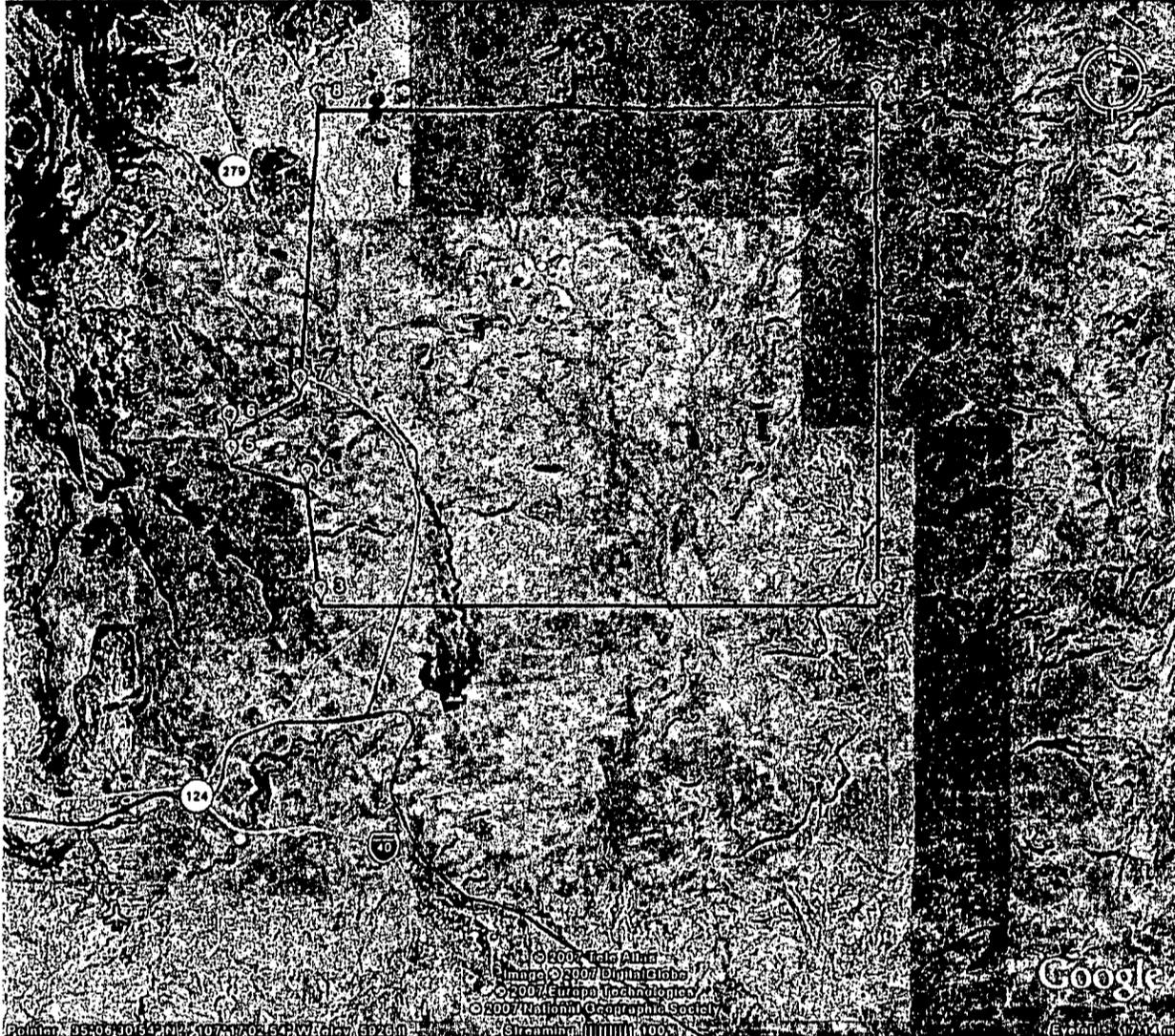
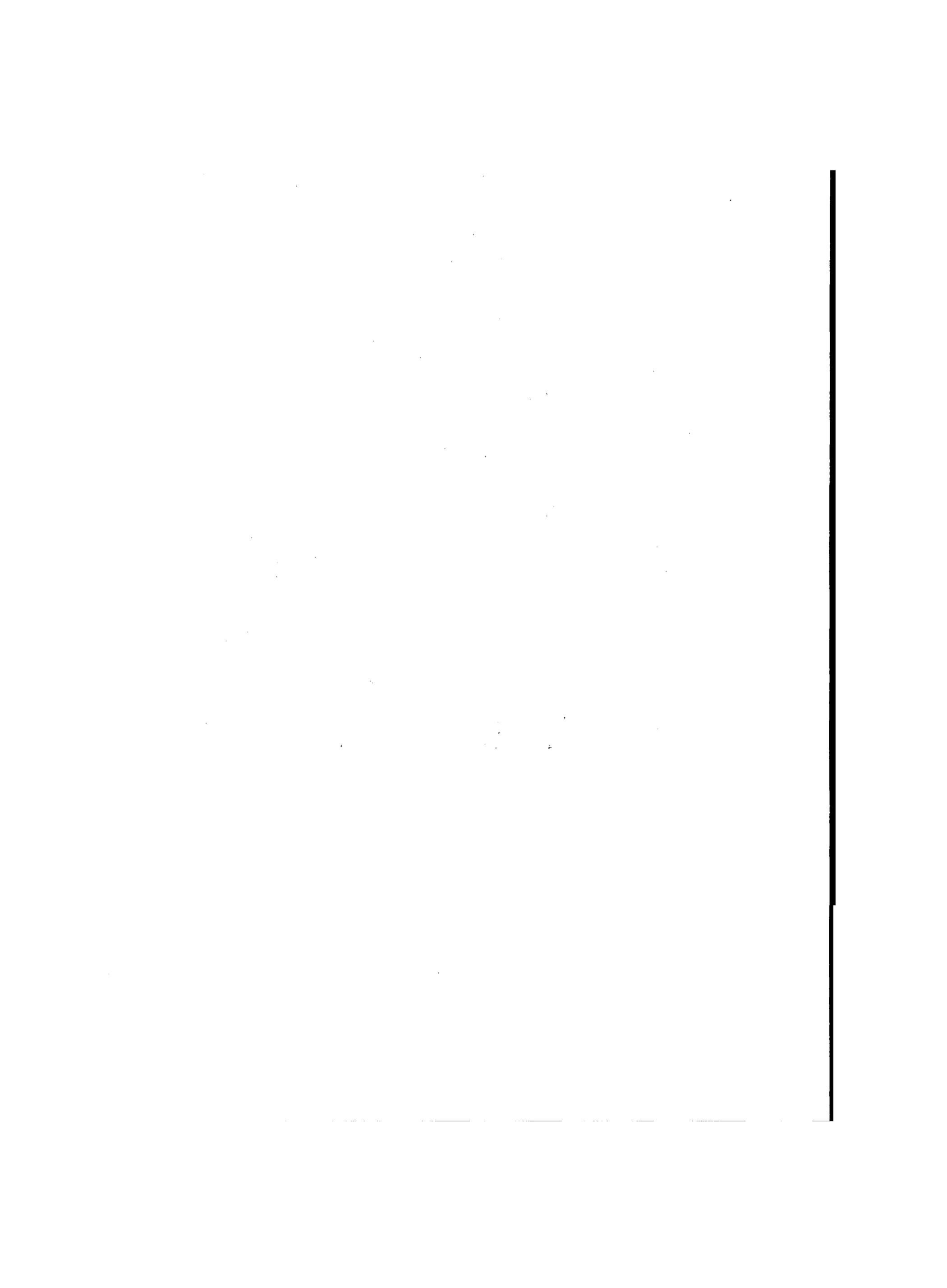


Figure1. Laguna Boundary for Flight Operations

**b. Laguna flight test area.** The containment area is in Class G airspace. The aircraft shall not be flown above an altitude of 400 ft AGL. The vertices points of the area are shown below:

Laguna Flight Test Area

WPT	Latitude	Longitude	(Leg) Distance
1	35°12'5.17"N	107°12'27.57"W	(1-2) ~7.732
2	35° 5'21.43"N	107°12'23.70"W	(2-3) ~8.710
3	35° 5'21.25"N	107°21'37.06"W	(3-4) ~1.833
4	35° 6'56.33"N	107°21'50.36"W	(4-5) ~1.230
5	35° 7'15.29"N	107°23'5.06"W	(5-6) ~0.466
6	35° 7'39.59"N	107°23'6.48"W	(6-7) ~1.207
7	35° 8'9.70"N	107°21'59.07"W	(7-8) ~4.440
8	35°12'1.02"N	107°21'39.65"W	(8-1) ~8.678



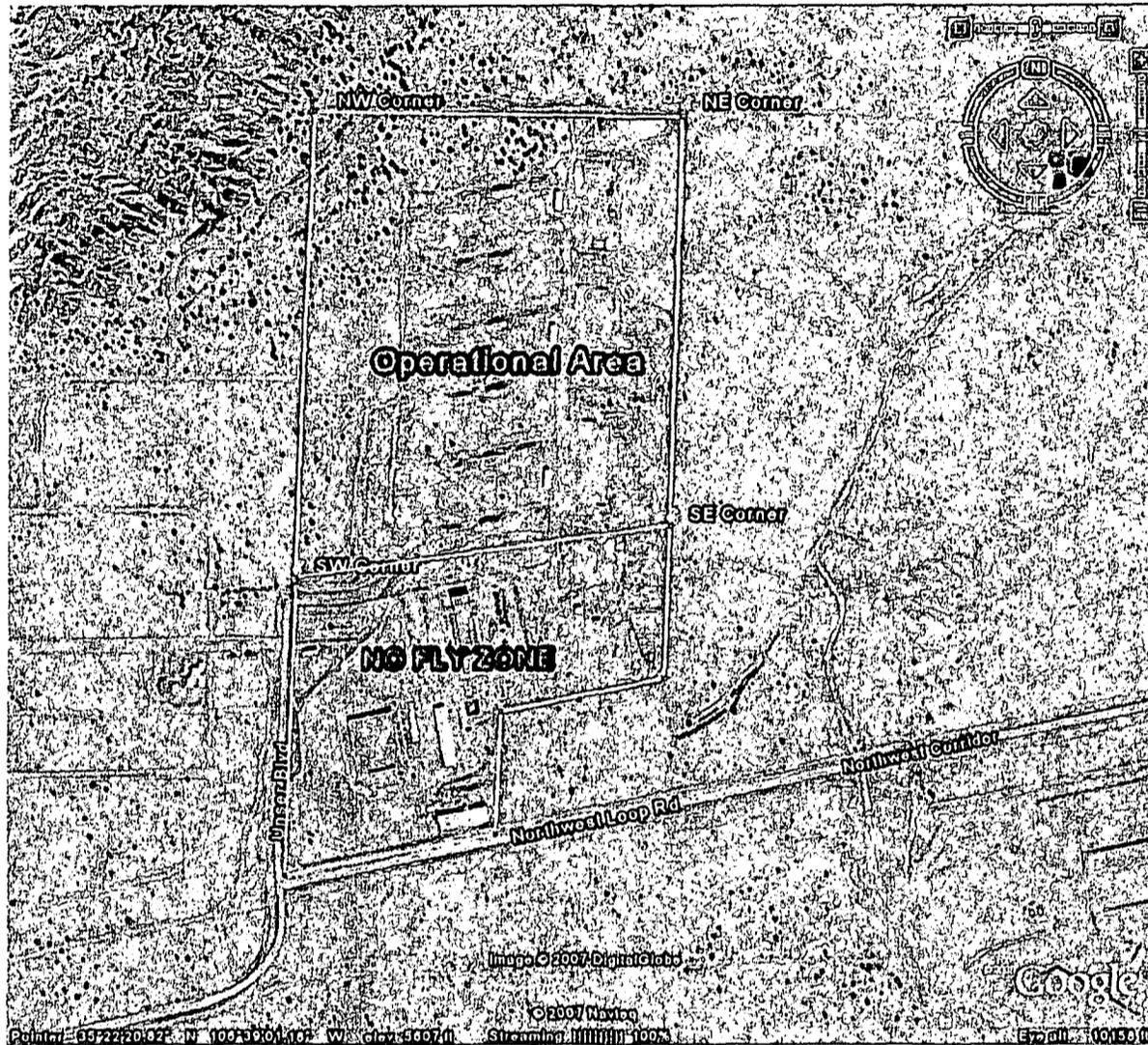
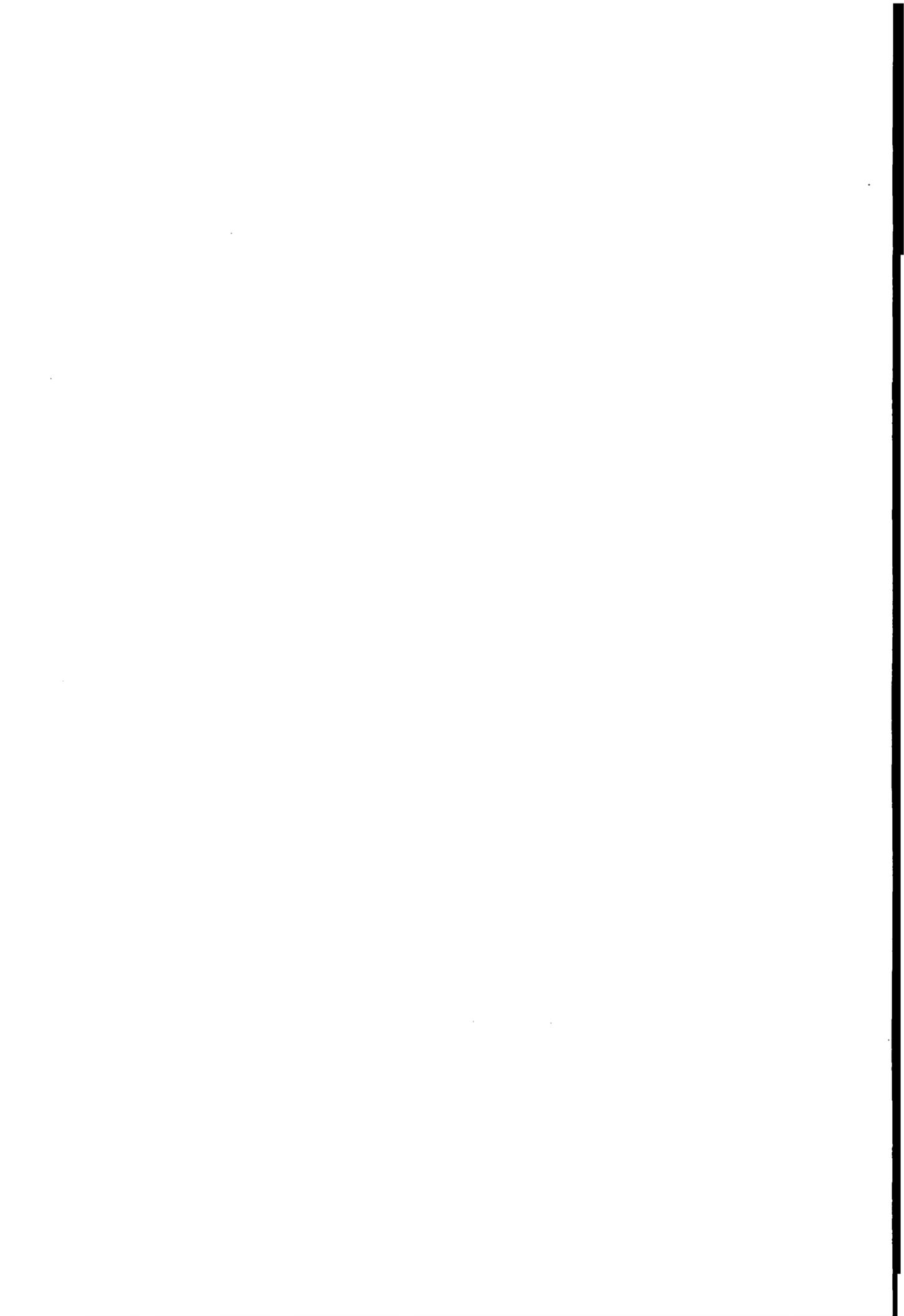


Figure1. New Mexico Army National Guard Boundary for Flight Operations

c. **NMANG flight test area.** The containment area is in Class G airspace. **The aircraft shall not be flown above an altitude of 400 ft AGL.** The vertices points of the area are shown below:

NMANG Flight Test Area

WPT	Latitude	Longitude	(Leg)	Distance
1 sw	35° 22' 19.02" N	106° 39' 16.92" W	(1-2)	~0.39 miles
2 nw	35° 22' 39.54" N	106° 39' 16.02" W	(2-3)	~0.31 miles
3 ne	35° 22' 39.60" N	106° 38' 56.04" W	(3-4)	~0.37 miles
4 se	35° 22' 20.46" N	106° 38' 56.64" W	(4-1)	~0.32 miles



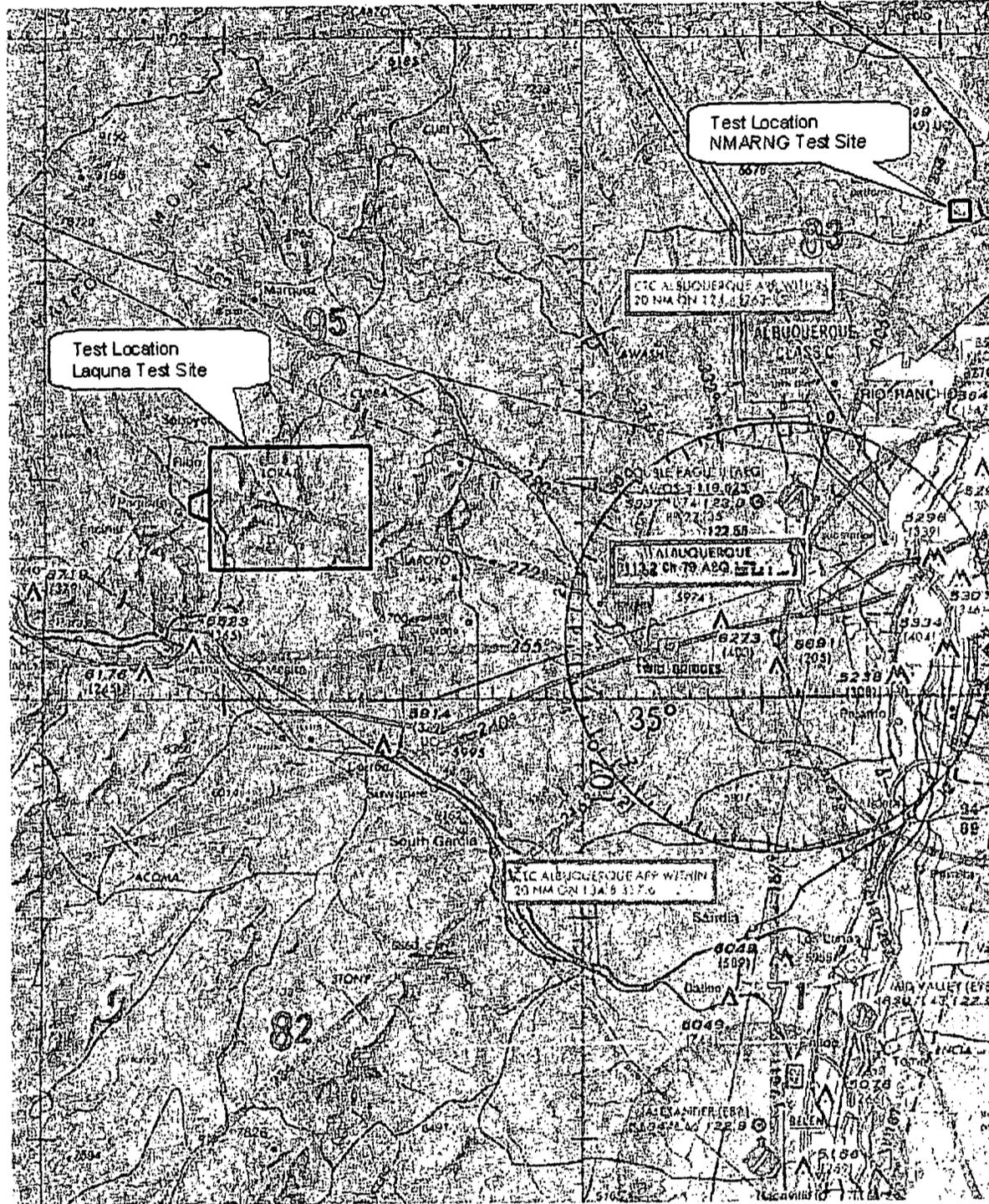


Figure 2. Aeronautical Chart of Albuquerque Area showing Test Site

**d. Authorized flight times and conditions.** All flight operations must be conducted during daylight hours under visual flight rules (VFR). Honeywell may be permitted to operate within Special Use Airspace (SUA) per authorization of the using agency. Under these circumstances, should the UA venture beyond the boundaries of the SUA (e.g., spill out), provisions of this experimental certificate shall apply. In these circumstances, Honeywell is responsible for notifying the FAA of the breach of any operations.



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**e. Criteria for remaining in the flight test area.** The UAS PIC must ensure all UA flight operations remain within the lateral and vertical boundaries of the flight test area. Furthermore, the UAS PIC must take into account all factors that may affect the capability of the UA to remain within the flight test area. This includes, but is not limited to, considerations for wind, gross weight, and glide distances.

**f. Incident/accident reporting.** Any incident/accident and any flight operation that transgresses the lateral or vertical boundaries of the flight test area or any restricted airspace must be reported to the FAA within 24 hours. This information must be reported to the FAA Unmanned Aircraft Program Office, AIR-160. AIR-160 can be reached by telephone at 202-385-4631 and fax at 202-385-4541. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: [www.nts.gov](http://www.nts.gov). Further flight operations must not be conducted until the incident is reviewed by AIR-160 and authorization to resume operations is provided to Honeywell International.

## **5. UA Pilots and Observers.**

### **a. UA PIC roles and responsibilities.**

- (1) The UA PIC must perform crew duties for only one UA at a time.
- (2) All flight operations must have a designated UA PIC. The UA PIC has responsibility over each flight conducted and is accountable for the UA flight operation.
- (3) The UA PIC is responsible for the safety of the UA as well as persons and property along the UA flight path. This includes, but is not limited to, collision avoidance and the safety of persons and property in the air and on the ground.
- (4) The UA PIC must avoid densely populated areas (§ 91.319) and exercise increased vigilance when operating within or in the vicinity of published airway boundaries.

### **b. UA PIC certification and ratings requirements.**

- (1) The UA PIC must hold and be in possession of, at a minimum, an FAA private pilot certificate, with either an airplane, rotorcraft, or powered-lift category; and single or multiengine class ratings, appropriate to the type of UA being operated.
- (2) The UA PIC must have, and be in possession of, a valid second-class airman medical certificate issued under 14 CFR part 67, Medical Standards and Certification.

### **c. UA PIC currency, flight review, and training.**

- (1) No person may act as pilot in command of an unmanned aircraft unless that person has made at least three takeoffs and three landings in manned aircraft within the preceding 90 days acting as the sole manipulator of the flight controls.
- (2) The UA PIC must have a flight review in manned aircraft every 24 calendar months in accordance with § 61.56, Flight review.
- (3) The UA PIC must maintain currency in unmanned aircraft in accordance with Honeywell International company procedures.
- (4) The UA PIC must have a flight review in unmanned aircraft every 24 calendar months in accordance with Honeywell International procedures.
- (5) All UA PICs must have successfully completed applicable Honeywell International training for the UAS.



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**d. Supplemental UA pilot roles and responsibilities.**

(1) Any additional UA pilot(s) assigned to a crew station during UA flight operations will be considered a supplemental UA pilot.

(2) A supplemental UA pilot assists the PIC in the operation of the UA and may do so at the same or a different control station as the PIC. The UA PIC will have operational override capability over any supplemental UA pilots, regardless of position.

(3) A supplemental UA pilot must perform crew duties for only one UA at a time.

**e. Supplemental UA pilot certification.** The supplemental UA PIC need not be a certificated pilot, but must have successfully completed a recognized private pilot ground school program.

**f. Supplemental UA pilot currency, flight review, and training.**

(1) All UA pilots must maintain currency in unmanned aircraft in accordance with Honeywell International company procedures.

(2) All UA pilots must have a flight review in unmanned aircraft every 24 calendar months in accordance with Honeywell International procedures.

(3) All UA pilots must have successfully completed applicable Honeywell International training for the UAS.

**g. Observer roles and responsibilities.** The task of the observer is to provide the UA PIC(s) with instructions to maneuver the UA clear of any potential collision with other traffic. To satisfy these requirements:

(1) The observer must perform crew duties for only one UA at a time.

(2) At no time will the observer permit the UA to operate beyond the line-of-sight necessary to ensure maneuvering information can be reliably determined.

(3) At no time will the observer conduct his/her duties more than 2000 ft laterally or 400 ft vertically from the UA.

(4) An observer must maintain continuous visual contact with the UA to discern UA attitude and trajectory in relation to conflicting traffic.

(5) The 2000 ft lateral limit is the maximum range allowed and that a practical distance may be something less, with the determination of such at the discretion of the applicant. Therefore, it will remain the responsibility of the applicant to insure the safety of flight and adequate visual range coverage to mitigate any potential collisions.

(6) Observers must continually scan the airspace for other aircraft that pose a potential conflict.

(7) All flight operations conducted in the flight test area must have an observer to perform traffic avoidance and visual observation to fulfill the see-and-avoid requirement of § 91.113, Right-of-way rules: Except water operations.

**h. Observer certification.**

(1) All observers must either hold, at a minimum, an FAA private pilot license or must have successfully completed specific observer training acceptable to the FAA. An observer does not require currency as a pilot.



October 2, 2009

(2) All observers must have in their possession a second-class airman medical certificate issued under part 67.

**i. Observer training.**

(1) All observers must be thoroughly trained, be familiar with, and possess operational experience with the equipment being used. Such training is necessary for observation and detection of other aircraft for collision avoidance purposes as outlined in Honeywell International program letter.

(2) All observers must have successfully completed applicable Honeywell International training for the UAS.

**6. Equipage.** The UA must be equipped with operable navigation, position, and/or strobe/anti-collision lights. Strobe/anti-collision lights must be illuminated during all operations.

**7. Communications.**

**a. Before UA flights.** Before conducting operations, the frequency spectrum used for operation and control of the UA must be approved by the Federal Communications Commission or other appropriate government oversight agency.

**b. During UA flights.**

(1) Appropriate air traffic frequencies must be monitored during flight operations.

(2) Honeywell International must contact the local Albuquerque Air Route Traffic Control Center (ARTCC), at (505)-856-4571 in the event of an aircraft fly-away that breaches the flight test area.

(3) All UA positions must maintain two-way communications with each other during all operations. If unable to maintain two-way communication, the UA PIC will expeditiously return the UA to its base of operations while remaining within the flight test area and conclude the flight operation.

**8. Flight Conditions.**

**a. Daylight operations.** All flight operations must be conducted during daylight hours in visual meteorological conditions (VMC), including cloud clearance minimums as specified in § 91.155, Basic VFR weather minimums. Flight operation in instrument meteorological conditions (IMC) is not permitted.

**b. Prohibitions.**

(1) The UA is prohibited from aerobatic flight, that is, an intentional maneuver involving an abrupt change in the UA's attitude, an abnormal acceleration, or other flight action not necessary for normal flight. (See § 91.303, Aerobatic flight.) If aerobatic flight is anticipated, it must be thoroughly discussed during the safety evaluation and be appropriately described in the operating limitations.

(2) Flight operations must not involve carrying hazardous material or the dropping of any objects or external stores.

(3) Each UA must be operated by only one control station at a time. A control station may not be used to operate multiple UAS.



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**c. Notice to airman.** Honeywell International must request the issuance of a Notice to Airman (NOTAM) through the local FAA Automated Flight Service Station at least 24 hours before flight operation. The following information shall be provided:

- (1) Name, address, and telephone number of the person giving notice.
- (2) Nature of the activity.
- (3) Date, time, and duration of the activity.
- (4) Size of the affected area in nautical mile radius and affected altitudes.
- (5) Location of center of affected area.
- (6) Location of center of affected area in relation to nearest VOR/DME or VORTAC.

#### **9. Flight Termination and Lost Link Procedures.**

**a. Flight termination.** In accordance with Honeywell International program letter, dated 09/29/2008, flight operations must be discontinued at any point that safe operation of the UA cannot be maintained or if hazard to persons or property is imminent.

**b. Lost link procedures.** In the event of lost link, the UA must provide a means of automatic recovery that ensures airborne operations are predictable and that the UA remains within the flight test area. The observer and all other UAS controls stations will be immediately notified of the lost link condition and the expected UA response.

#### **10. Maintenance and Inspection.**

**a. General requirements.** The UAS must not be operated unless it is inspected and maintained in accordance with the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100, dated 12/16/08, or later accepted FAA revision. Honeywell International must establish and maintain aircraft maintenance records (see paragraph 10(d) below).

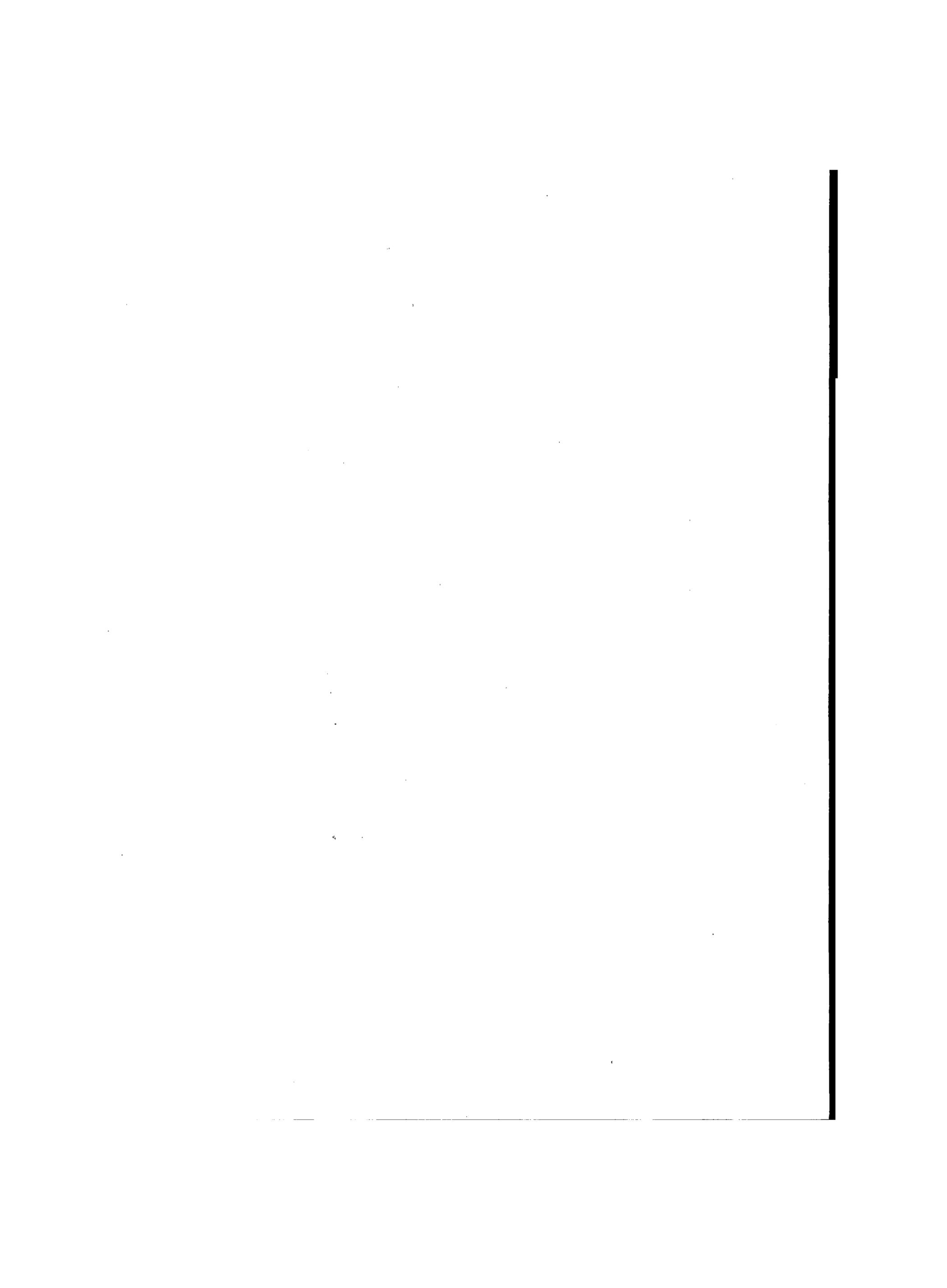
**b. Inspections.** No person may operate this UAS within the preceding 12 calendar months unless it has had a condition inspection performed according to the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100. The UAS must also have been found to be in a condition for safe operation. This inspection will be recorded in the UAS maintenance records as described in paragraph 10(d) below.

**c. Authorized inspectors.** Only those individuals trained and authorized by Honeywell International and acceptable to the FAA may perform the inspections and maintenance required by these operating limitations.

**d. Maintenance and inspection records.** Maintenance and inspections of the UAS must be recorded in the UAS maintenance records. The following information must be recorded:

(1) Maintenance record entries must include a description of the work performed, the date of completion for the work, the UAS's total time-in-service, and the name and signature of the person performing the work.

(2) Inspection entries must contain the following, or a similarly worded, statement: *I certify that this UAS was inspected on (date), in accordance with the scope and detail of the (applicant name) Inspection and Maintenance Program, and was found to be in a condition for safe operation.*



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(3) UAS instruments and equipment required to be installed must be inspected and maintained in accordance with the requirements of the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100. Any maintenance or inspection of this equipment must be recorded in the UAS maintenance records.

**11. Information Reporting.** Honeywell International will provide the following information to [donald.e.grampp@faa.gov](mailto:donald.e.grampp@faa.gov) on a monthly basis. A copy of the report shall be provided to AIR-200.

- a. Number of flights conducted under this certificate.
- b. Pilot duty time per flight.
- c. Unusual equipment malfunctions (hardware or software).
- d. Deviations from ATC instructions.
- e. Unintended entry into lost link flight mode that results in a course change.

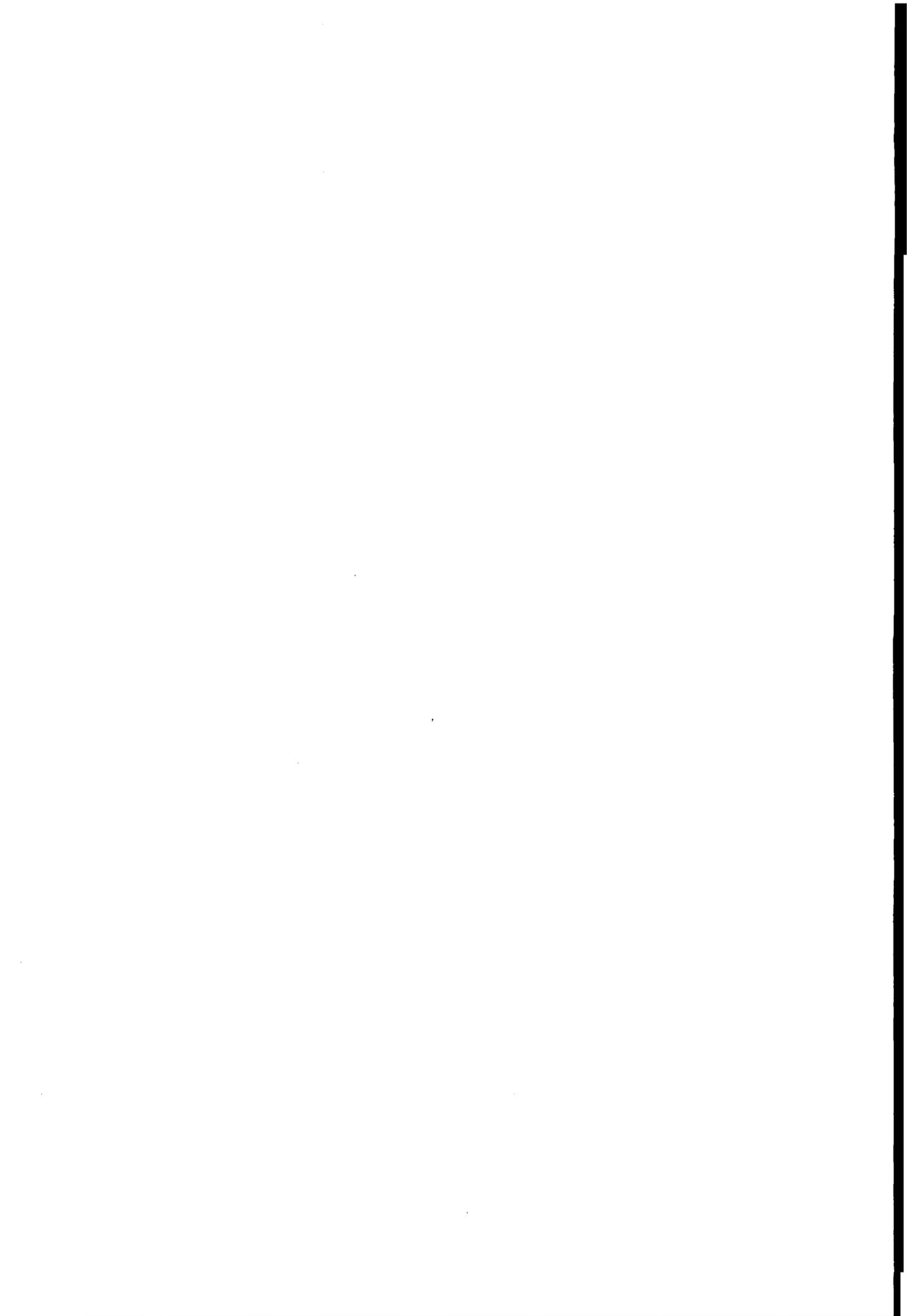
**12. Revisions and Other Provisions.**

**a. Experimental certificates, program letters, and operating limitations.** The experimental certificate, FAA-accepted Honeywell International program letter, and operating limitations cannot be reissued, renewed, or revised without application being made to the Fort Worth Manufacturing Inspection District Office, in coordination with AIR-200. AIR-200 will be responsible for FAA Headquarters internal coordination with the Aircraft Certification Service, Flight Standards Service, Air Traffic Organization, Office of the Chief Council, and Office of Rulemaking.

**b. Certificates of waiver or authorization.** Honeywell shall immediately notify the Production and Airworthiness Division, AIR-200, and the Fort Worth MIDO, if there is any plan for requesting a Certificate of Authorization or Waiver (COA) for UAS operations during the time the experimental certificate is in effect. An entry in the aircraft logbook is required to document that the aircraft flight authority has been changed from the experimental certificate to COA. When COA operations are concluded and the aircraft resumes flying under the experimental certificate, a record entry will be made in the aircraft logbook by an appropriately rated person to document that the aircraft is in a condition for safe operation and appropriately configured.

**c. Amendments and cancellations.** The provisions and limitations annotated in this operational approval may be amended or cancelled at any time as deemed necessary by the FAA.

**d. Reviews of revisions.** All revisions to Honeywell International FAA-accepted Inspection and Maintenance Program must be reviewed and accepted by the Albuquerque Flight Standards District Office (FSDO). The Albuquerque FSDO can be reached at telephone number (505) 764-1200.



October 2, 2009

**13. UAS Modifications.**

**a. Software and system changes.** All software and system changes will be documented as part of the normal maintenance procedures and will be available for inspection. All software and system changes must be inspected and approved per the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100. All software changes to the aircraft and control station are categorized as major changes, and must be provided in summary form at the time they are incorporated.

**b. Major modifications.** All major modifications, whether performed under the experimental certificate, COA, or other authorizations, that could potentially affect the safe operation of the system, must be documented and provided to the FAA before operating the aircraft under this certificate. Major modifications incorporated under COA or other authorization needs to be provided only if the aircraft is flown under these authorizations during the effective period of the experimental certificate.

**c. Submission of modifications.** All information requested must be provided to AIR-200.

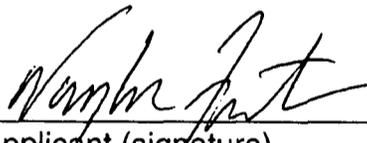
End of Limitations

10/2/2009  
Issued at Albuquerque, NM

  
\_\_\_\_\_  
Carmen Alvarez  
Aviation Safety Inspector (Mfg)  
Ft. Worth Manufacturing Inspection District Office  
SW MIDO-42  
2601 Meacham Boulevard  
Fort Worth, TX 76137

**I certify that I have read and understand the operating limitations and conditions that are a part of the special airworthiness certificate, FAA Form 8130-7, issued on 10/2/2009, for the purposes of research and development, market survey, and crew training.**

**This special airworthiness certificate is issued for Honeywell International gMAV, serial number 07010320, registration number N3047W.**

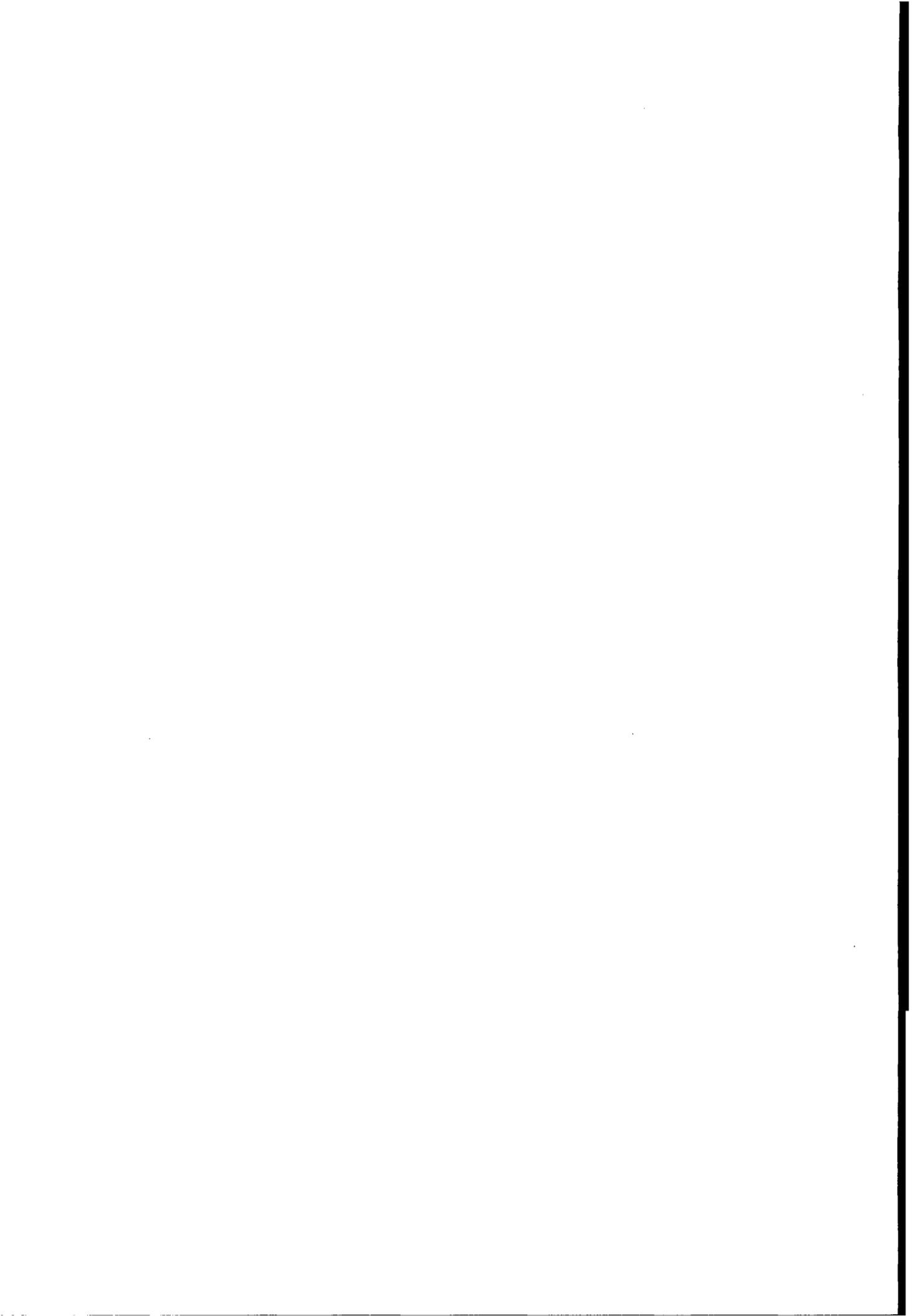
  
\_\_\_\_\_  
Applicant (signature)

10/2/09  
\_\_\_\_\_  
Date:

Name: Vaughn Fulton

Title: Honeywell Unmanned Aerial Systems Program Manager

Company: Honeywell International





U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Rotorcraft Directorate  
San Antonio Manufacturing Inspection District Office

10100 Reunion Place, Suite 650  
San Antonio, Texas 78216-4168  
Phone: (210) 308-3360  
Fax: (210) 308-3370

**Operating Limitations**  
**Experimental: Research and Development, Market Survey,**  
**and/or Crew Training**

<b>Registered Owner Name:</b> Honeywell International	<b>Aircraft Builder:</b> Honeywell International
<b>Registered Owner Address:</b> 9201 San Mateo Blvd., NE Albuquerque, NM 87113-2227	<b>Year Manufactured:</b> 2007
<b>Aircraft Description:</b> Micro Unmanned Air Vehicle	<b>Aircraft Serial Number:</b> 07010320
<b>Aircraft Registration:</b> N3047W	<b>Aircraft Model Designation:</b> Micro Unmanned Air Vehicle
	<b>Engine Model:</b> 3W56iB2-CS

**The following conditions and limitations apply to all unmanned aircraft system (UAS) flight operations for the Honeywell gMAV while operating in the National Airspace System (NAS).**

**1. General Information.**

**a. Integrated system.** For the purposes of this special airworthiness certificate and operating limitations, the Honeywell gMAV operated by Honeywell International is considered to be an integrated system. The system is composed of the following:

- (1) Honeywell gMAV, S/N 07010320.
- (2) UAS control station(s), fixed, mobile, or ground-based.
- (3) Telemetry, launch, and recovery equipment.
- (4) Communications and navigation equipment, including ground and/or airborne equipment used for command and control of the Honeywell gMAV UAS.



(5) Equipment on the ground and in the air used for communication with other members of the flightcrew, observers, air traffic control (ATC), and other users of the NAS.

**b. Compliance with 14 CFR part 61 (Certification: Pilots, Flight Instructors, and Ground Instructors) and part 91 (General Operating and Flight Rules).** Unless otherwise specified in this document, the UA pilot-in-command (PIC) and Honeywell International must comply with all applicable sections and parts of 14 CFR including, but not limited to, parts 61 and 91.

**c. Operational requirements.**

(1) No person may operate this UAS for other than the purpose of research and development, market survey, and/or crew training, to accomplish the flight operations outlined in Honeywell International program letter dated 06/10/2008, which describes compliance with § 21.193(d), Experimental certificates: General, and has been made available to the UA PIC.

(2) This UAS must be operated in accordance with applicable air traffic and general operating rules of part 91 and all additional limitations herein prescribed under the provisions of § 91.319(i), Aircraft having experimental certificates: Operating limitations.

(3) Honeywell International must accumulate at least 50 flight hours under its experimental airworthiness certificate before customer crew training is permitted, in accordance with § 21.195(d), Experimental certificates: Aircraft to be used for market surveys, sales demonstrations, and customer crew training.

**d. UA condition.** The UA PIC must determine that the UA is in a condition for safe operation, and in a configuration appropriate for the purpose of the intended flight.

**e. Multiple-purpose operations.** When changing between operating purposes of a multiple purpose certificate, the operator must determine that the aircraft is in a condition for safe operation and appropriate for the purpose intended. A record entry will be made by an appropriately rated person (that is, an individual authorized by the applicant and acceptable to the FAA) to document that finding in the maintenance records.

**f. Operation exceptions.** No person may operate this UA to carry property for compensation or hire (§ 91.319(a)(2)).

**g. UA markings.**

(1) This UA must be marked with its U.S. registration number in accordance with part 45 or alternative marking approval issued by the FAA Production and Airworthiness Division (AIR-200).

(2) This UA must display the word *Experimental* in accordance with § 45.23(b), Display of marks, unless otherwise granted an exemption from this requirement.

**h. Required documentation.** Prior to conducting the initial gMAV flight operations, Honeywell must forward a copy of the gMAV Special Airworthiness Certificate, Operating Limitations and Program Letter to the following FAA personnel:

(1) Mr. Roger Trevino, System Support Specialist, FAA Central Service Area, System Support Group, AJO2-C2, email: [roger.trevino@faa.gov](mailto:roger.trevino@faa.gov), fax: 817-222-5547.



(2) Richard Posey, Aviation Safety Inspector, Production and Airworthiness Division, AIR-200, 800 Independence Ave, SW, Washington, DC 20591, telephone (202) 267-9538, email [richard.posey@faa.gov](mailto:richard.posey@faa.gov).

**i. Change in registrant address.** Section 47.45, Change of address, requires that the FAA Aircraft Registry be notified within 30 days of any change in the aircraft registrant's address. Such notification is to be made by providing AC Form 8050-1, Aircraft Registration Application, to the FAA Aircraft Registration Branch (AFS-750) in Oklahoma City, Oklahoma.

**j. Certificate display and manual availability.** The airworthiness and registration certificates must be displayed, and the aircraft flight manual must be available to the pilot, as prescribed by the applicable sections of 14 CFR, or as prescribed by an exemption granted in accordance with 14 CFR part 11, Investigative and Enforcement Procedures, to Honeywell International.

**2. Program Letter.** The Honeywell International gMAV program letter, dated 06/10/2008, will be used as a basis for determining the operating limitations prescribed in this document. All flight operations must be conducted in accordance with the provisions of this document.

### **3. Initial Flight Testing.**

**a. Requirements.** Flight operations shall be conducted within visual line of sight of the pilot/observer. Initial flight-testing shall be completed when the pilot in command can certify compliance with § 91.319(b). Compliance with § 91.319(b) must be recorded in the aircraft records with the following, or a similarly worded, statement:

"I certify that the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous operating characteristics or design features, and is safe for operation."

**b. Aircraft operations for the purpose of market surveys, sales demonstrations, and customer crew training.** These operations cannot be performed until 50 flight hours have been accomplished. An entry in the maintenance records is required as evidence of compliance.

### **4. Authorized Flight Operations Area.**

**a. Description of the authorized flight operations area.** The containment area for flight test will be on the property of the Laguna Pueblo, New Mexico. This area is approximately 60 miles west of the Honeywell facility. It is a remote, desert terrain area with restricted access controlled by the government of the Laguna Pueblo. The attached map shows the layout and the operational area. Population areas near the site are (1) State Hwy 279 which runs through the southwest section, (2) a small housing community approximately 0.5 miles to the northwest, and (3) Interstate 40 approximately 5.5 miles to the south.

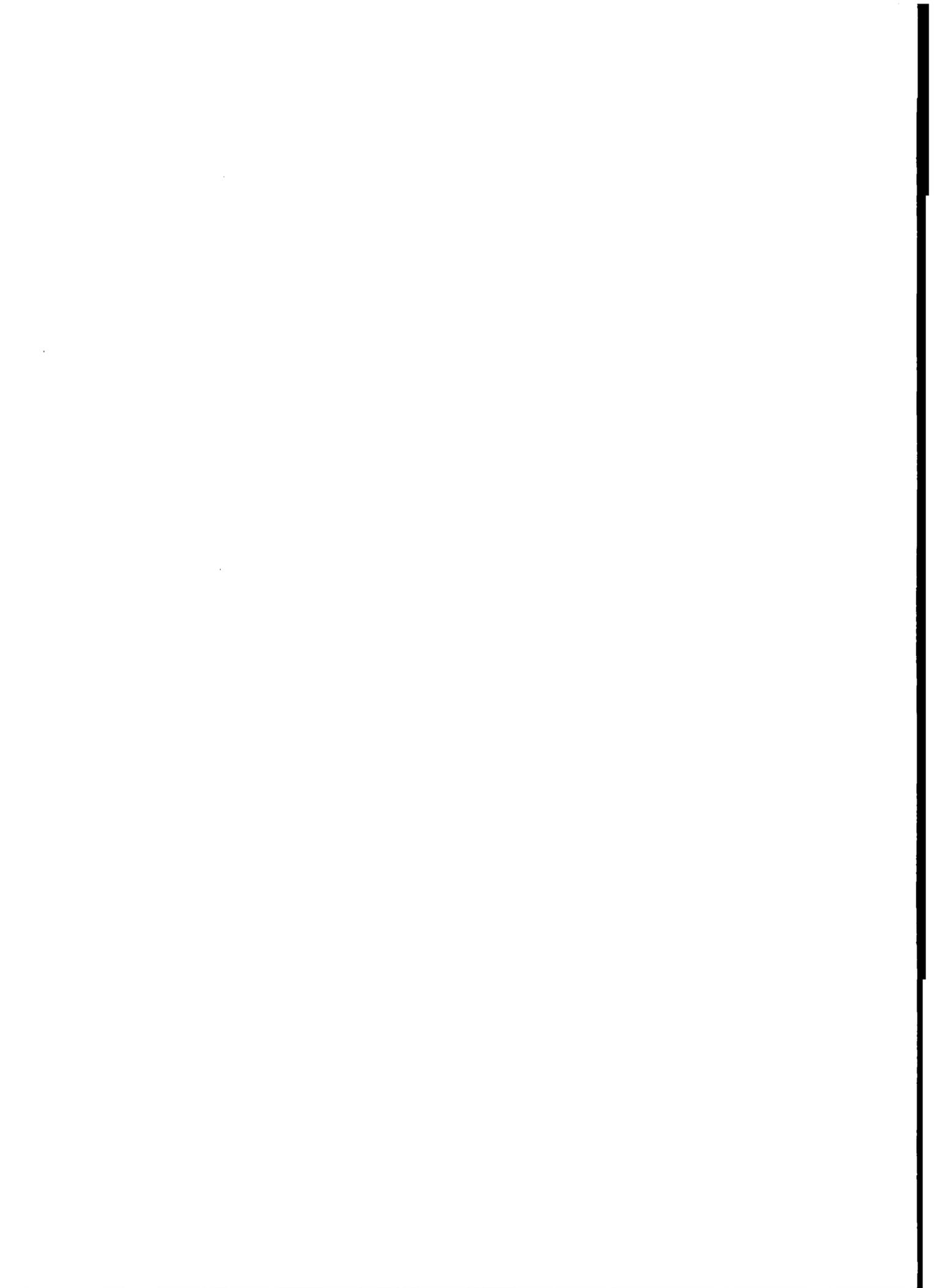




Figure 1. Boundary for Flight Operations

**b. Flight test area.** The containment area is in Class G airspace. **The aircraft shall not be flown above an altitude of 400 ft AGL.** The vertices points of the area are shown below:

Laguna Flight Test Area

WPT	Latitude	Longitude	(Leg) Distance
1	35° 12' 5.17" N	107° 12' 27.57" W	(1-2) ~7.732
2	35° 5' 21.43" N	107° 12' 23.70" W	(2-3) ~8.710
3	35° 5' 21.25" N	107° 21' 37.06" W	(3-4) ~1.833
4	35° 6' 56.33" N	107° 21' 50.36" W	(4-5) ~1.230
5	35° 7' 15.29" N	107° 23' 5.06" W	(5-6) ~0.466
6	35° 7' 39.59" N	107° 23' 6.48" W	(6-7) ~1.207
7	35° 8' 9.70" N	107° 21' 59.07" W	(7-8) ~4.440
8	35° 12' 1.02" N	107° 21' 39.65" W	(8-1) ~8.678



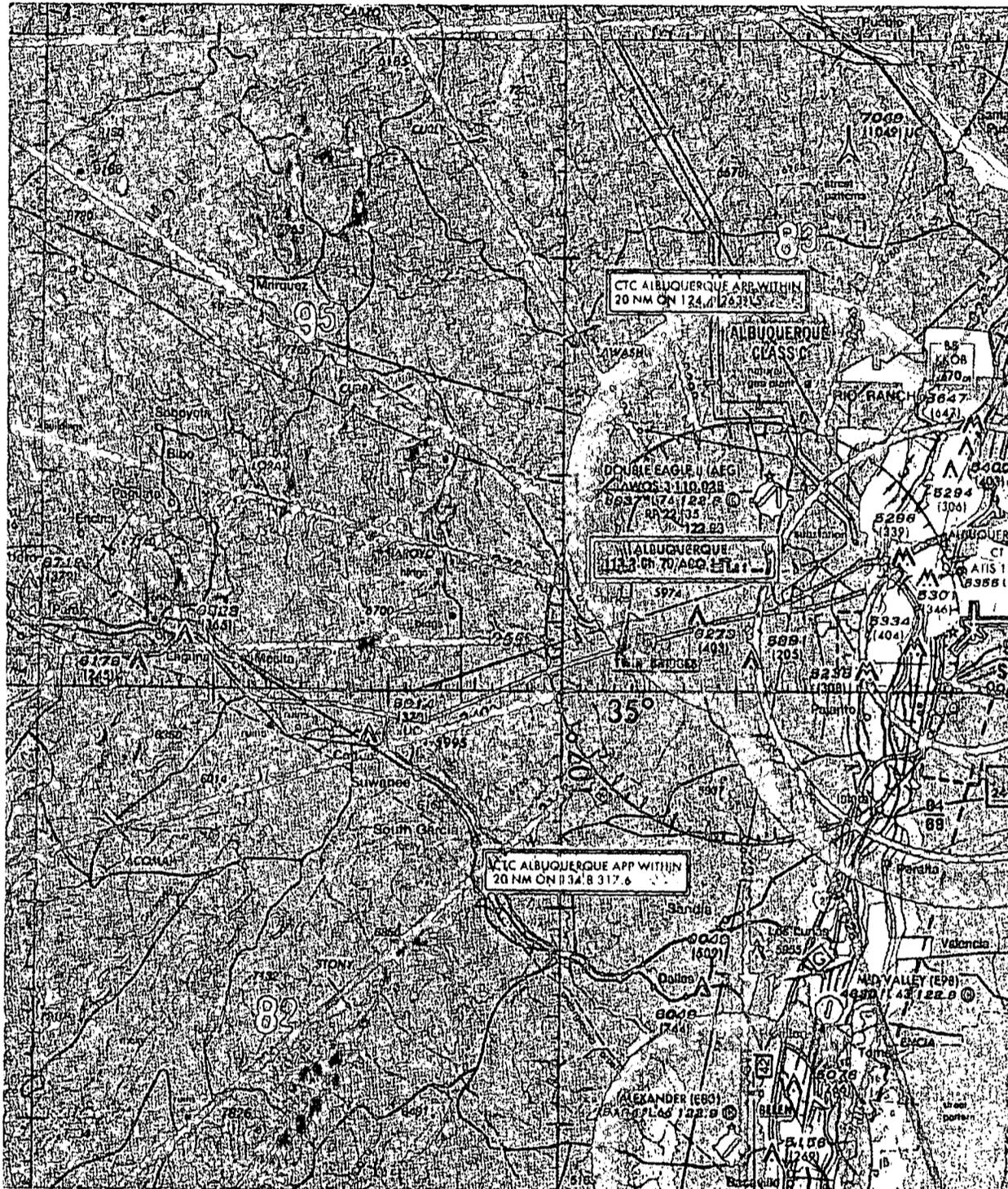


Figure 2. Aeronautical Chart of Albuquerque Area showing Test Site

c. **Authorized flight times and conditions.** All flight operations must be conducted during daylight hours under visual flight rules (VFR).

d. **Criteria for remaining in the flight test area.** The UAS PIC must ensure all UA flight operations remain within the lateral and vertical boundaries of the flight test area.



Furthermore, the UAS PIC must take into account all factors that may affect the capability of the UA to remain within the flight test area. This includes, but is not limited to, considerations for wind, gross weight, and glide distances.

**e. Incident/accident reporting.** Any incident/accident and any flight operation that transgresses the lateral or vertical boundaries of the flight test area or any restricted airspace must be reported to the FAA within 24 hours. This information must be reported to the Unmanned Aircraft Program Office, AIR-160. AIR-160 can be reached by telephone at 202-385-4636 and fax at 202-385-4651. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: [www.nts.gov](http://www.nts.gov). Further flight operations must not be conducted until the incident is reviewed by AIR-160 and authorization to resume operations is provided to Honeywell International.

## **5. UA Pilots and Observers.**

### **a. UA PIC roles and responsibilities.**

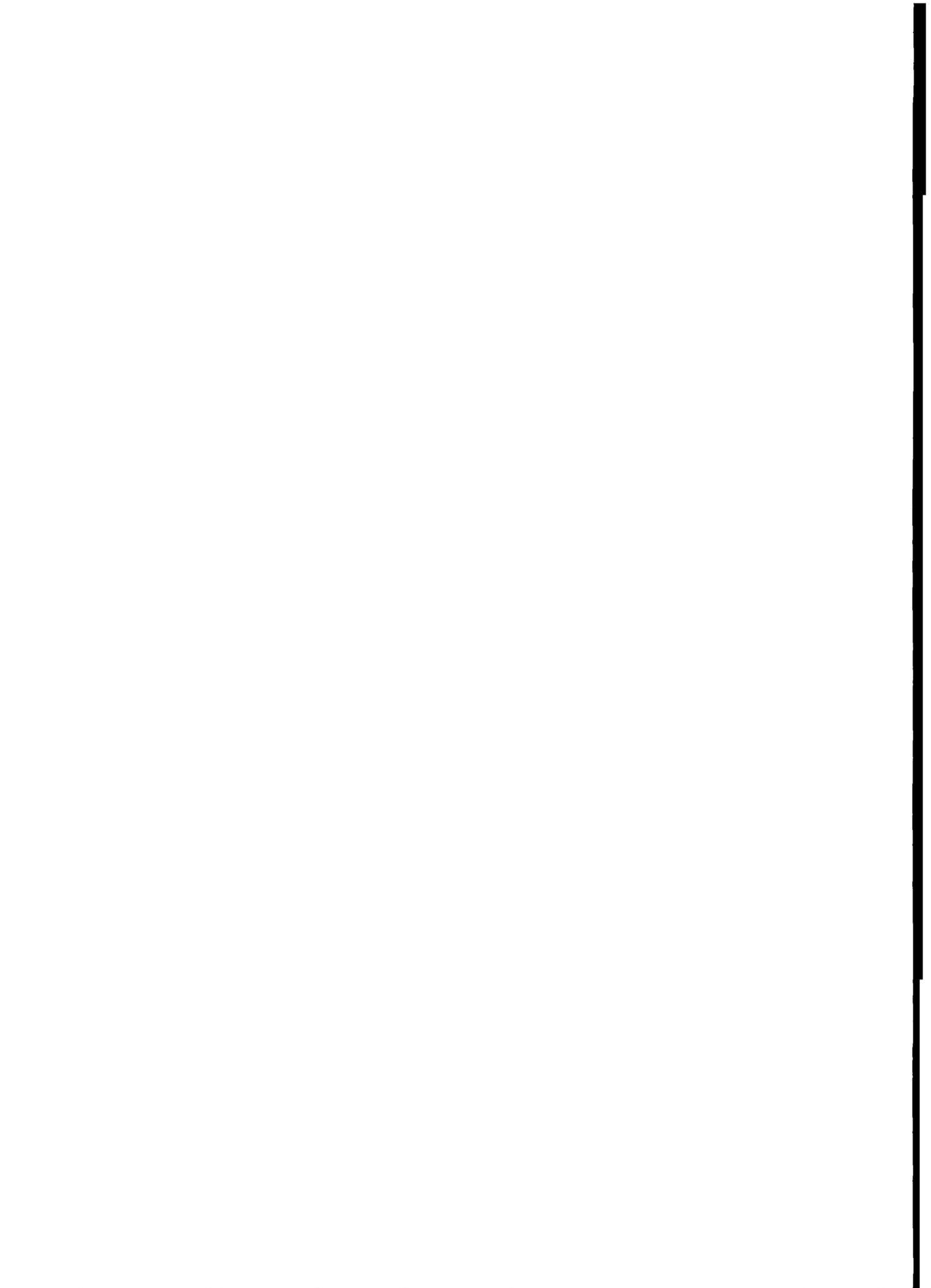
- (1) The UA PIC must perform crew duties for only one UA at a time.
- (2) All flight operations must have a designated UA PIC. The UA PIC has responsibility over each flight conducted and is accountable for the UA flight operation.
- (3) The UA PIC is responsible for the safety of the UA as well as persons and property along the UA flight path. This includes, but is not limited to, collision avoidance and the safety of persons and property in the air and on the ground.
- (4) The UA PIC must avoid densely populated areas (§ 91.319) and exercise increased vigilance when operating within or in the vicinity of published airway boundaries.

### **b. UA PIC certification and ratings requirements.**

- (1) The UA PIC must hold and be in possession of, at a minimum, an FAA private pilot certificate, with either an airplane, rotorcraft, or powered-lift category; and single or multiengine class ratings, appropriate to the type of UA being operated.
- (2) The UA PIC must have, and be in possession of, a valid second-class airman medical certificate issued under 14 CFR part 67, Medical Standards and Certification.

### **c. UA PIC currency, flight review, and training.**

- (1) No person may act as pilot in command of an unmanned aircraft unless that person has made at least three takeoffs and three landings in manned aircraft within the preceding 90 days acting as the sole manipulator of the flight controls.
- (2) The UA PIC must have a flight review in manned aircraft every 24 calendar months in accordance with § 61.56, Flight review.
- (3) The UA PIC must maintain currency in unmanned aircraft in accordance with Honeywell International company procedures.
- (4) The UA PIC must have a flight review in unmanned aircraft every 24 calendar months in accordance with Honeywell International procedures.
- (5) All UA PICs must have successfully completed applicable Honeywell International training for the UAS.



**d. Supplemental UA pilot roles and responsibilities.**

(1) Any additional UA pilot(s) assigned to a crew station during UA flight operations will be considered a supplemental UA pilot.

(2) A supplemental UA pilot assists the PIC in the operation of the UA and may do so at the same or a different control station as the PIC. The UA PIC will have operational override capability over any supplemental UA pilots, regardless of position.

(3) A supplemental UA pilot must perform crew duties for only one UA at a time.

**e. Supplemental UA pilot certification.** The supplemental UA PIC need not be a certificated pilot, but must have successfully completed a recognized private pilot ground school program.

**f. Supplemental UA pilot currency, flight review, and training.**

(1) All UA pilots must maintain currency in unmanned aircraft in accordance with Honeywell International company procedures.

(2) All UA pilots must have a flight review in unmanned aircraft every 24 calendar months in accordance with Honeywell International procedures.

(3) All UA pilots must have successfully completed applicable Honeywell International training for the UAS.

**g. Observer roles and responsibilities.** The task of the observer is to provide the UA PIC(s) with instructions to maneuver the UA clear of any potential collision with other traffic. To satisfy these requirements:

(1) The observer must perform crew duties for only one UA at a time.

(2) At no time will the observer permit the UA to operate beyond the line-of-sight necessary to ensure maneuvering information can be reliably determined.

(3) At no time will the observer conduct his/her duties more than 2000 ft laterally or 400 ft vertically from the UA.

(4) An observer must maintain continuous visual contact with the UA to discern UA attitude and trajectory in relation to conflicting traffic.

(5) The 2000 ft lateral limit is the maximum range allowed and that a practical distance may be something less, with the determination of such at the discretion of the applicant. Therefore, it will remain the responsibility of the applicant to insure the safety of flight and adequate visual range coverage to mitigate any potential collisions.

(6) Observers must continually scan the airspace for other aircraft that pose a potential conflict.

(7) All flight operations conducted in the flight test area must have an observer to perform traffic avoidance and visual observation to fulfill the see-and-avoid requirement of § 91.113, Right-of-way rules: Except water operations.

**h. Observer certification.**

(1) All observers must either hold, at a minimum, an FAA private pilot license or must have successfully completed specific observer training acceptable to the FAA. An observer does not require currency as a pilot.



(2) All observers must have in their possession a second-class airman medical certificate issued under part 67.

**i. Observer training.**

(1) All observers must be thoroughly trained, be familiar with, and possess operational experience with the equipment being used. Such training is necessary for observation and detection of other aircraft for collision avoidance purposes as outlined in Honeywell International program letter.

(2) All observers must have successfully completed applicable Honeywell International training for the UAS.

**6. Equipage.** The UA must be equipped with operable navigation, position, and/or strobe/anti-collision lights. Strobe/anti-collision lights must be illuminated during all operations.

**7. Communications.**

**a. Before UA flights.** Before conducting operations, the frequency spectrum used for operation and control of the UA must be approved by the Federal Communications Commission or other appropriate government oversight agency.

**b. During UA flights.**

(1) Appropriate air traffic frequencies must be monitored during flight operations.

(2) Honeywell International must contact the local Albuquerque Air Route Traffic Control Center (ARTCC), at (505)-856-4571 in the event of an aircraft fly-away that breaches the flight test area.

(3) All UA positions must maintain two-way communications with each other during all operations. If unable to maintain two-way communication, the UA PIC will expeditiously return the UA to its base of operations while remaining within the flight test area and conclude the flight operation.

**8. Flight Conditions.**

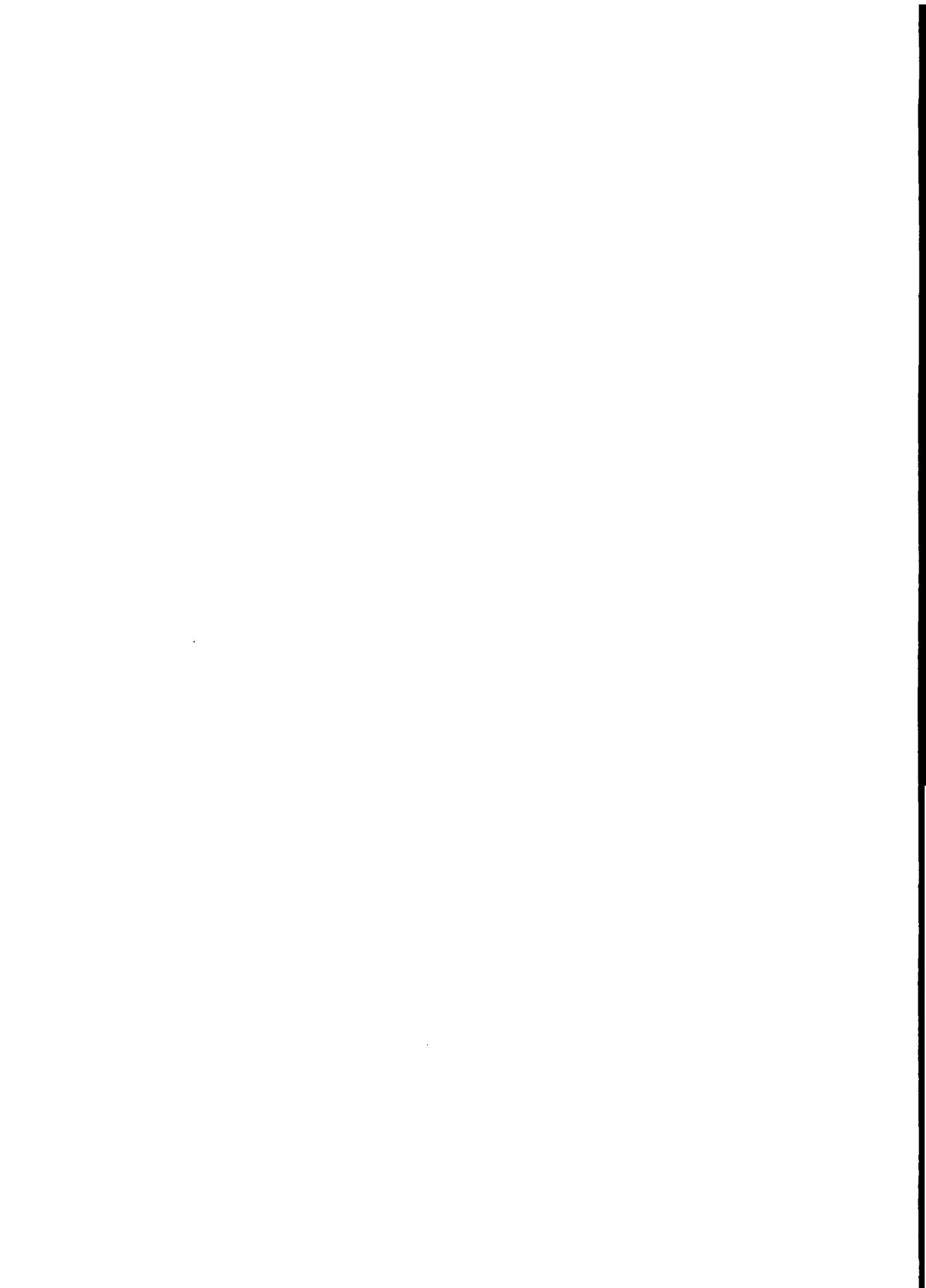
**a. Daylight operations.** All flight operations must be conducted during daylight hours in visual meteorological conditions (VMC), including cloud clearance minimums as specified in § 91.155, Basic VFR weather minimums. Flight operation in instrument meteorological conditions (IMC) is not permitted.

**b. Prohibitions.**

(1) The UA is prohibited from aerobatic flight, that is, an intentional maneuver involving an abrupt change in the UA's attitude, an abnormal acceleration, or other flight action not necessary for normal flight. (See § 91.303, Aerobatic flight.) If aerobatic flight is anticipated, it must be thoroughly discussed during the safety evaluation and be appropriately described in the operating limitations.

(2) Flight operations must not involve carrying hazardous material or the dropping of any objects or external stores.

(3) Each UA must be operated by only one control station at a time. A control station may not be used to operate multiple UAS.



**c. Notice to airman.** Honeywell International must request the issuance of a Notice to Airman (NOTAM) through the local FAA Automated Flight Service Station at least 24 hours before flight operation. The following information shall be provided:

- (1) Name, address, and telephone number of the person giving notice.
- (2) Nature of the activity.
- (3) Date, time, and duration of the activity.
- (4) Size of the affected area in nautical mile radius and affected altitudes.
- (5) Location of center of affected area.
- (6) Location of center of affected area in relation to nearest VOR/DME or VORTAC.

#### **9. Flight Termination and Lost Link Procedures.**

**a. Flight termination.** In accordance with Honeywell International program letter, dated 6/10/2008, flight operations must be discontinued at any point that safe operation of the UA cannot be maintained or if hazard to persons or property is imminent.

**b. Lost link procedures.** In the event of lost link, the UA must provide a means of automatic recovery that ensures airborne operations are predictable and that the UA remains within the flight test area. The observer and all other UAS controls stations will be immediately notified of the lost link condition and the expected UA response.

#### **10. Maintenance and Inspection.**

**a. General requirements.** The UAS must not be operated unless it is inspected and maintained in accordance with the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100, dated 07/28/08, or later accepted FAA revision. Honeywell International must establish and maintain aircraft maintenance records (see paragraph 10(d) below).

**b. Inspections.** No person may operate this UAS within the preceding 12 calendar months unless it has had a condition inspection performed according to the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100. The UAS must also have been found to be in a condition for safe operation. This inspection will be recorded in the UAS maintenance records as described in paragraph 10(d) below.

**c. Authorized inspectors.** Only those individuals trained and authorized by Honeywell International and acceptable to the FAA may perform the inspections and maintenance required by these operating limitations.

**d. Maintenance and inspection records.** Maintenance and inspections of the UAS must be recorded in the UAS maintenance records. The following information must be recorded:

(1) Maintenance record entries must include a description of the work performed, the date of completion for the work, the UAS's total time-in-service, and the name and signature of the person performing the work.

(2) Inspection entries must contain the following, or a similarly worded, statement:  
*I certify that this UAS was inspected on (date), in accordance with the scope and detail of the (applicant name) Inspection and Maintenance Program, and was found to be in a condition for safe operation.*



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(3) UAS instruments and equipment required to be installed must be inspected and maintained in accordance with the requirements of the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100. Any maintenance or inspection of this equipment must be recorded in the UAS maintenance records.

**11. Information Reporting.** Honeywell International will provide the following information to [donald.e.grampp@faa.gov](mailto:donald.e.grampp@faa.gov) on a monthly basis. A copy of the report shall be provided to AIR-200.

- a. Number of flights conducted under this certificate.
- b. Pilot duty time per flight.
- c. Unusual equipment malfunctions (hardware or software).
- d. Deviations from ATC instructions.
- e. Unintended entry into lost link flight mode that results in a course change.

**12. Revisions and Other Provisions.**

**a. Experimental certificates, program letters, and operating limitations.** The experimental certificate, FAA-accepted Honeywell International program letter, and operating limitations cannot be reissued, renewed, or revised without application being made to the San Antonio Manufacturing Inspection District Office, in coordination with AIR-200. AIR-200 will be responsible for FAA Headquarters internal coordination with the Aircraft Certification Service, Flight Standards Service, Air Traffic Organization, Office of the Chief Council, and Office of Rulemaking.

**b. Certificates of waiver or authorization.** No Certificate of Waiver or Authorization (COA) may be issued in association with this experimental certificate unless coordinated with the San Antonio MIDO and AIR-200.

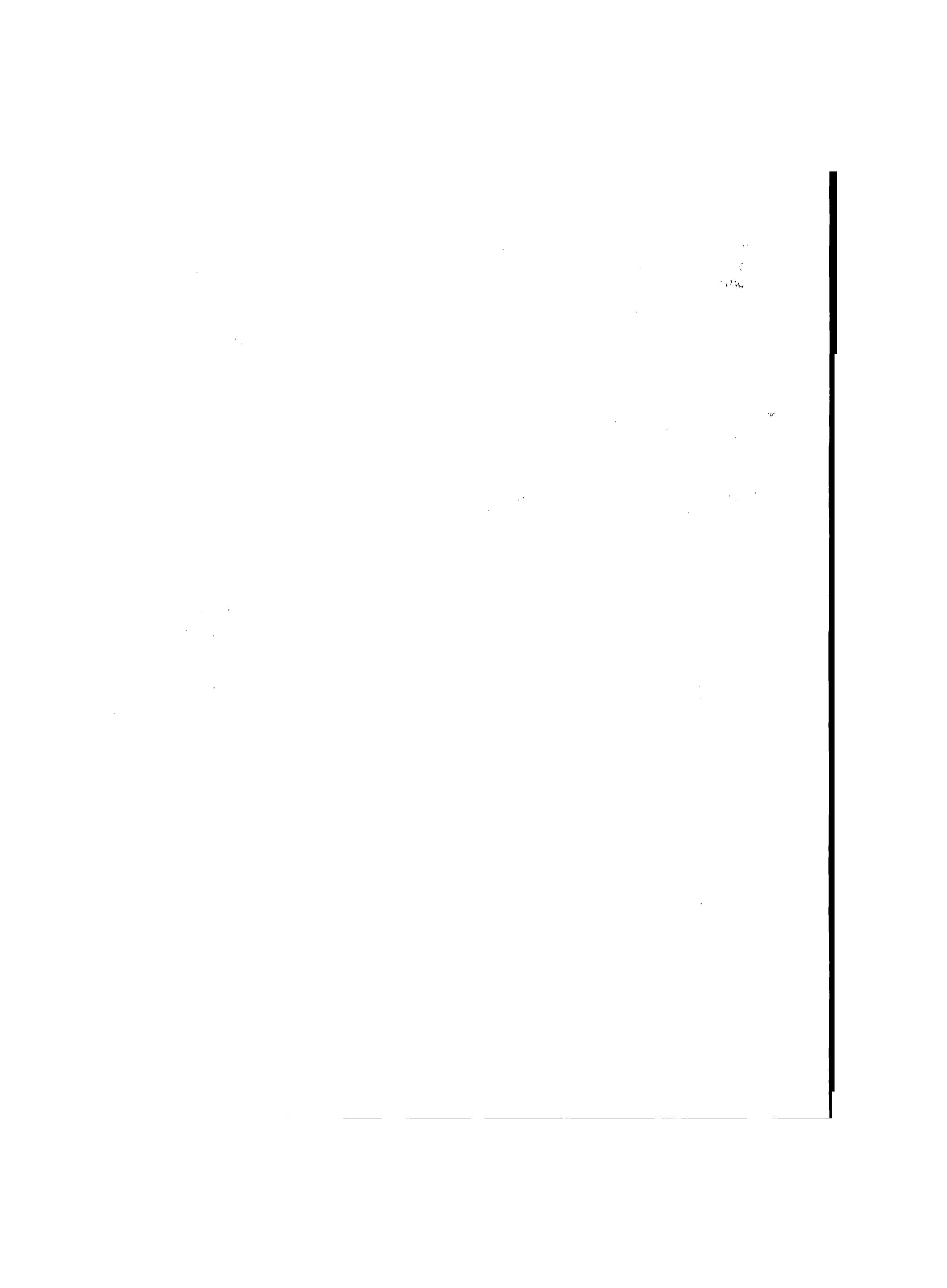
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**13. UAS Modifications.**

**a. Software and system changes.** All software and system changes will be documented as part of the normal maintenance procedures and will be available for inspection. All software and system changes must be inspected and approved per the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100. All software changes to the aircraft and control station are categorized as major changes, and must be provided in summary form at the time they are incorporated.

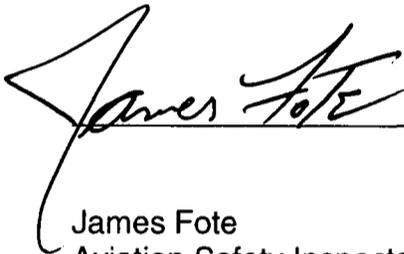
**b. Major modifications.** All major modifications, whether performed under the experimental certificate, COA, or other authorizations, that could potentially affect the safe operation of the system, must be documented and provided to the FAA before operating



the aircraft under this certificate. Major modifications incorporated under COA or other authorization need to be provided only if the aircraft is flown under these authorizations during the effective period of the experimental certificate.

**c. Submission of modifications.** All information requested must be provided to AIR-200.

End of Limitations

  
\_\_\_\_\_

James Fote  
Aviation Safety Inspector (Mfg)  
San Antonio Manufacturing Inspection District  
Office, MIDO-43  
10100 Reunion Place  
Suite 650  
San Antonio, Texas 78216

07/31/2008  
Issued at Albuquerque, NM

**EXPIRES**

**I certify that I have read and understand the operating limitations and conditions that are a part of the special airworthiness certificate, FAA Form 8130-7, issued on 07/31/2008, for the purposes of research and development, market survey, and crew training.**

**This special airworthiness certificate is issued for Honeywell International gMAV, serial number 07010320, registration number N3047W.**

  
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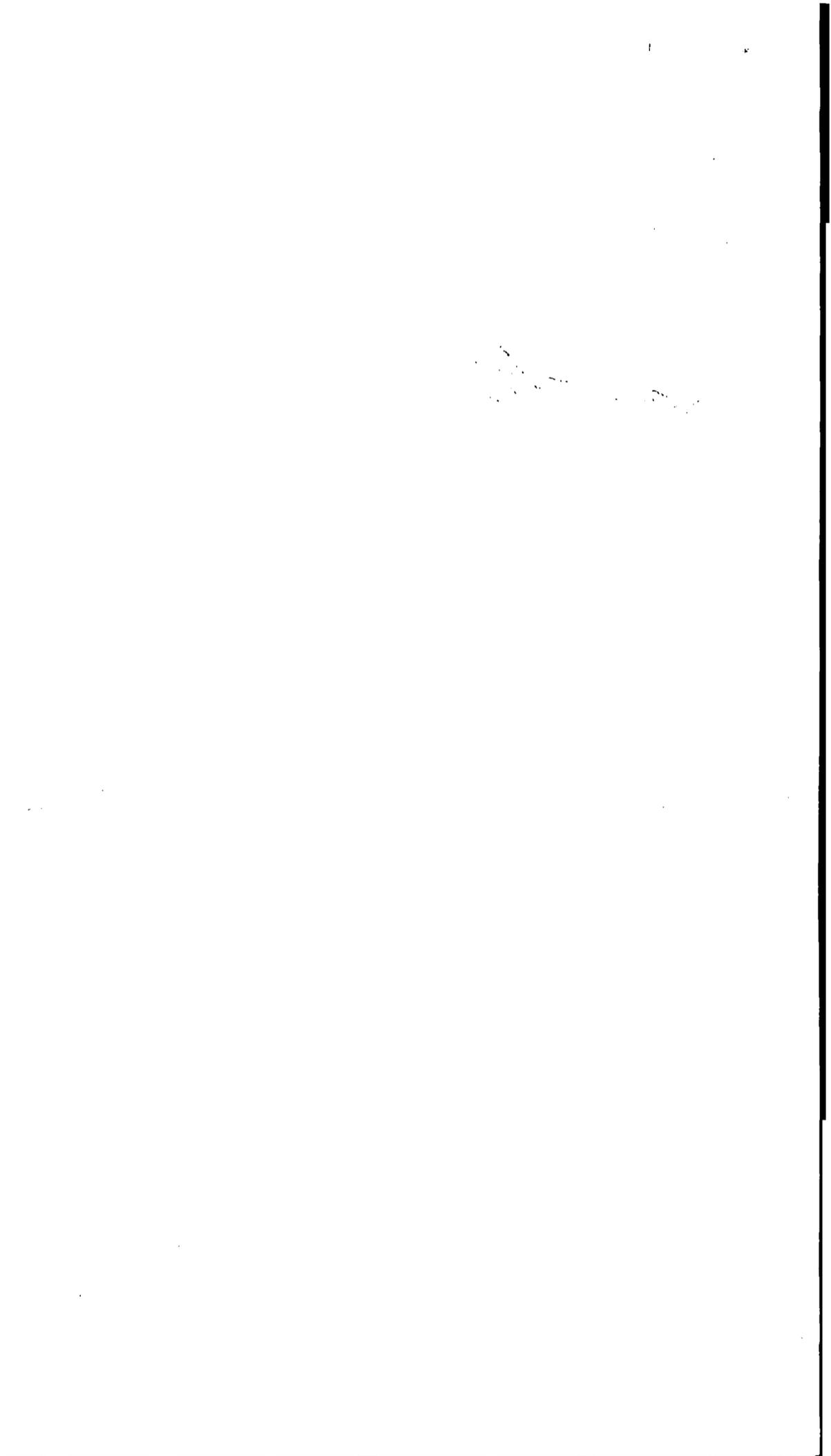
Applicant (signature)

7/31/08  
Date:

Name: Vaughn Fulton

Title: Honeywell Unmanned Aerial Systems Program Manager

Company: Honeywell International

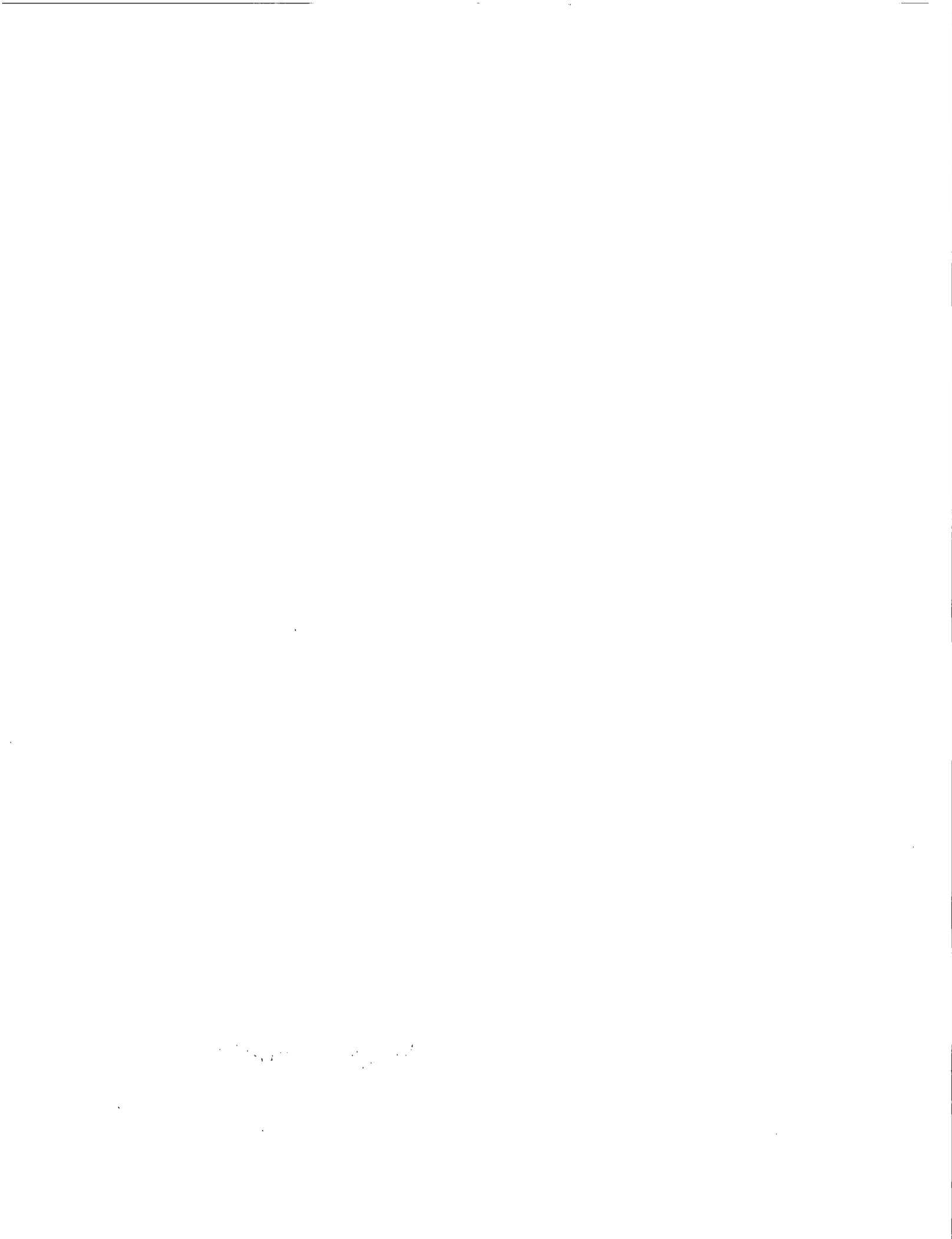


FAA FORM 8130-6, APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE

Form Approved O.M.B. No. 2120-0018  
09/30/2007

Accepted JW Oct/24/2008

U.S. Department of Transportation Federal Aviation Administration		APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE		INSTRUCTIONS - Print or type. Do not write in shaded areas; these are for FAA use only. Submit original only to an authorized FAA Representative. If additional space is required, use attachment. For special flight permits complete Sections II, VI and VII as applicable.																																																																																																																																																																																																																																																																																																																																																												
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A. THE AIRCRAFT DESCRIBED ABOVE HAS BEEN INSPECTED AND FOUND AIRWORTHY BY: (Complete the section only if 14 CFR part 21.183(d) applies.)																																																																																																																																																																																																																																																																																																																																																																
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DATE 7/31/08	DISTRICT OFFICE SW-MIDO-43	DESIGNEE'S SIGNATURE AND NO. 4		FAA INSPECTOR'S SIGNATURE <i>James M. Fote</i>																																																																																																																																																																																																																																																																																																																																																												



VI. PRODUCTION FLIGHT TESTING	A. MANUFACTURER				
	NAME		ADDRESS		
	B. PRODUCTION BASIS (Check applicable item)				
	<input type="checkbox"/> PRODUCTION CERTIFICATE (Give production certificate number) → <input type="checkbox"/> TYPE CERTIFICATE ONLY <input type="checkbox"/> APPROVED PRODUCTION INSPECTION SYSTEM				
	C. GIVE QUANTITY OF CERTIFICATES REQUIRED FOR OPERATING NEEDS				
DATE OF APPLICATION		NAME AND TITLE (Print or Type)	SIGNATURE		
VII. SPECIAL FLIGHT PERMIT PURPOSES OTHER THAN PRODUCTION FLIGHT TEST	A. DESCRIPTION OF AIRCRAFT				
	REGISTERED OWNER		ADDRESS		
	BUILDER (Make)		MODEL		
	SERIAL NUMBER		REGISTRATION MARK		
	B. DESCRIPTION OF FLIGHT				
	FROM		TO		
	VIA		DEPARTURE DATE	DURATION	
	C. CREW REQUIRED TO OPERATE THE AIRCRAFT AND ITS EQUIPMENT				
	<input type="checkbox"/> PILOT		<input type="checkbox"/> CO-PILOT	<input type="checkbox"/> FLIGHT ENGINEER	<input type="checkbox"/> OTHER (Specify)
	D. THE AIRCRAFT DOES NOT MEET THE APPLICABLE AIRWORTHINESS REQUIREMENTS AS FOLLOWS:				
	E. THE FOLLOWING RESTRICTIONS ARE CONSIDERED NECESSARY FOR SAFE OPERATION: (Use attachment if necessary)				
F. CERTIFICATION - I hereby certify that I am the registered owner (or his agent) of the aircraft described above; that the aircraft is registered with the Federal Aviation Administration in accordance with Title 49 of the United States Code 44101 <u>et seq.</u> , and applicable Federal Aviation Regulations; and that the aircraft has been inspected and is safe for the flight described.					
DATE		NAME AND TITLE (Print or Type)	SIGNATURE		
VIII. AIRWORTHINESS DOCUMENTATION (FAA/DESIGNEE use only)	A. Operating Limitations and Markings in Compliance with 14 CFR Section 91.9, as applicable.		G. Statement of Conformity, FAA Form 8130-9 (Attach when required)		
	<input checked="" type="checkbox"/> B. Current Operating Limitations Attached		H. Foreign Airworthiness Certification for Import Aircraft (Attach when required)		
	<input checked="" type="checkbox"/> C. Data, Drawings, Photographs, etc. (Attach when required)		<input checked="" type="checkbox"/> I. Previous Airworthiness Certificate Issued in accordance with 14 CFR Section <u>26.191(a)(5)(F)</u> (Original Attached)		
	D. Current Weight and Balance information Available in Aircraft		<input checked="" type="checkbox"/> J. Current Airworthiness Certificate Issued in Accordance with 14 CFR Section <u>21.191(a)(c) &amp; (f)</u> (Copy Attached)		
	E. Major Repair and Alteration, FAA Form 337 (Attach when required)		K. Light-Sport Aircraft Statement of Compliance, FAA Form 8130-15 (Attach when required)		
	<input checked="" type="checkbox"/> F. This inspection Recorded in Aircraft Records				



COPY

UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION <b>SPECIAL AIRWORTHINESS CERTIFICATE</b>	
<b>A</b>	CATEGORY/DESIGNATION <u>Experimental (Unmanned Aircraft)</u> PURPOSE <u>R&amp;D or Crew Training or Market Survey</u>
<b>B</b>	MANUFACTURER NAME <u>N/A</u>
	ADDRESS <u>N/A</u>
<b>C</b>	FLIGHT FROM <u>N/A</u>
	TO <u>N/A</u>
<b>D</b>	N- <u>3047W</u> SERIAL NO. <u>07010320</u>
	BUILDER <u>Honeywell International</u> MODEL <u>gMAV</u>
DATE OF ISSUANCE <u>7/31/08</u> EXPIRY <u>7/30/09</u>	
OPERATING LIMITATIONS DATED <u>7/31/08</u> ARE PART OF THIS CERTIFICATE	
<b>E</b>	SIGNATURE OF FAA REPRESENTATIVE <u>James M. Fote</u> DESIGNATION OR OFFICE NO. <u>SW-MIDO-43</u>
	<u>James M. Fote</u>

Any alteration, reproduction or misuse of this certificate may be punishable by a fine not exceeding \$1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE TITLE 14, CODE OF FEDERAL REGULATIONS (CFR).

FAA Form 8130-7 (07/04) SEE REVERSE SIDE NSN: 0052-00-693-4000

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<b>A</b>	This airworthiness certificate is issued under the authority of Public Law 104-6, 49 United States Code (USC) 44704 and Title 14 Code of Federal Regulations (CFR).
<b>B</b>	The airworthiness certificate authorizes the manufacturer named on the reverse side to conduct production flight tests, and only production flight tests, of aircraft registered in his name. No person may conduct production flight tests under this certificate: (1) Carrying persons or property for compensation or hire; and/or (2) Carrying persons not essential to the purpose of the flight.
<b>C</b>	This airworthiness certificate authorizes the flight specified on the reverse side for the purpose shown in Block A.
<b>D</b>	This airworthiness certificate certifies that as of the date of issuance, the aircraft to which issued has been inspected and found to meet the requirements of the applicable CFR. The aircraft does not meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention On International Civil Aviation. No person may operate the aircraft described on the reverse side: (1) except in accordance with the applicable CFR and in accordance with conditions and limitations which may be prescribed by the Administrator as part of this certificate; (2) over any foreign country without the special permission of that country.
<b>E</b>	Unless sooner surrendered, suspended, or revoked, this airworthiness certificate is effective for the duration and under the conditions prescribed in 14 CFR, Part 21, Section 21.181 or 21.217.

UNITED STATES OF AMERICA  
 DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION  
**SPECIAL AIRWORTHINESS CERTIFICATE**

<b>A</b>	CATEGORY/DESIGNATION <b>Experimental (Unmanned Aircraft)</b>	
	PURPOSE <b>R &amp; D or Crew Training or Market Survey</b>	
<b>B</b>	MANUFACTURER	NAME <b>N/A</b>
		ADDRESS <b>N/A</b>
<b>C</b>	FLIGHT	FROM <b>N/A</b>
		TO <b>N/A</b>
<b>D</b>	N- <b>3047W</b>	SERIAL NO. <b>07010320</b>
	BUILDER <b>Honeywell International</b>	MODEL <b>gMAV</b>
DATE OF ISSUANCE <b>12/6/2007</b>		EXPIRY <b>12/6/2008</b>
OPERATING LIMITATIONS DATED <b>12/7/2007</b> ARE PART OF THIS CERTIFICATE		
<b>E</b>	SIGNATURE OF FAA REPRESENTATIVE <i>James M. Fote</i> <b>James M. Fote</b>	DESIGNATION OR OFFICE NO. <b>SW-MIDO-43</b>

Any alteration, reproduction or misuse of this certificate may be punishable by a fine not exceeding \$1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE TITLE 14, CODE OF FEDERAL REGULATIONS (CFR).

FAA Form 8130-7 (07/04) SEE REVERSE SIDE NSN: 0052-00-693-4000

<b>A</b>	This airworthiness certificate is issued under the authority of Public Law 104-6, 49 United States Code (USC) 44704 and Title 14 Code of Federal Regulations (CFR).
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<b>C</b>	This airworthiness certificate authorizes the flight specified on the reverse side for the purpose shown in Block A.
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<b>E</b>	Unless sooner surrendered, suspended, or revoked, this airworthiness certificate is effective for the duration and under the conditions prescribed in 14 CFR, Part 21, Section 21.181 or 21.217.



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Rotorcraft Directorate  
San Antonio Manufacturing Inspection District Office

10100 Reunion Place, Suite 650  
San Antonio, Texas 78216-4168  
Phone: (210) 308-3360  
Fax: (210) 308-3370

**Operating Limitations  
Experimental: Research and Development, Market Survey,  
and/or Crew Training**

<p><b>Registered Owner Name:</b> Honeywell International</p> <p><b>Registered Owner Address:</b> 9201 San Mateo Blvd., NE Albuquerque, NM 87113-2227</p> <p><b>Aircraft Description:</b> Micro Unmanned Air Vehicle</p> <p><b>Aircraft Registration:</b> N3047W</p>	<p><b>Aircraft Builder:</b> Honeywell International</p> <p><b>Year Manufactured:</b> 2007</p> <p><b>Aircraft Serial Number:</b> 07010320</p> <p><b>Aircraft Model Designation:</b> Micro Unmanned Air Vehicle</p> <p><b>Engine Model:</b> 3W56iB2-CS</p>
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**The following conditions and limitations apply to all unmanned aircraft system (UAS) flight operations for the Honeywell gMAV while operating in the National Airspace System (NAS).**

**1. General Information.**

**a. Integrated system.** For the purposes of this special airworthiness certificate and operating limitations, the Honeywell gMAV operated by Honeywell International is considered to be an integrated system. The system is composed of the following:

- (1) Honeywell gMAV, S/N 07010320.
- (2) UAS control station(s), fixed, mobile, or ground-based.
- (3) Telemetry, launch, and recovery equipment.
- (4) Communications and navigation equipment, including ground and/or airborne equipment used for command and control of the Honeywell gMAV UAS.



(5) Equipment on the ground and in the air used for communication with other members of the flightcrew, observers, air traffic control (ATC), and other users of the NAS.

**b. Compliance with 14 CFR part 61 (Certification: Pilots, Flight Instructors, and Ground Instructors) and part 91 (General Operating and Flight Rules).** Unless otherwise specified in this document, the UA pilot-in-command (PIC) and Honeywell International must comply with all applicable sections and parts of 14 CFR including, but not limited to, parts 61 and 91.

**c. Operational requirements.**

(1) No person may operate this UAS for other than the purpose of research and development, market survey, and/or crew training, to accomplish the flight operations outlined in Honeywell International program letter dated 06/10/2008, which describes compliance with § 21.193(d), Experimental certificates: General, and has been made available to the UA PIC.

(2) This UAS must be operated in accordance with applicable air traffic and general operating rules of part 91 and all additional limitations herein prescribed under the provisions of § 91.319(i), Aircraft having experimental certificates: Operating limitations.

(3) Honeywell International must accumulate at least 50 flight hours under its experimental airworthiness certificate before customer crew training is permitted, in accordance with § 21.195(d), Experimental certificates: Aircraft to be used for market surveys, sales demonstrations, and customer crew training.

**d. UA condition.** The UA PIC must determine that the UA is in a condition for safe operation, and in a configuration appropriate for the purpose of the intended flight.

**e. Multiple-purpose operations.** When changing between operating purposes of a multiple purpose certificate, the operator must determine that the aircraft is in a condition for safe operation and appropriate for the purpose intended. A record entry will be made by an appropriately rated person (that is, an individual authorized by the applicant and acceptable to the FAA) to document that finding in the maintenance records.

**f. Operation exceptions.** No person may operate this UA to carry property for compensation or hire (§ 91.319(a)(2)).

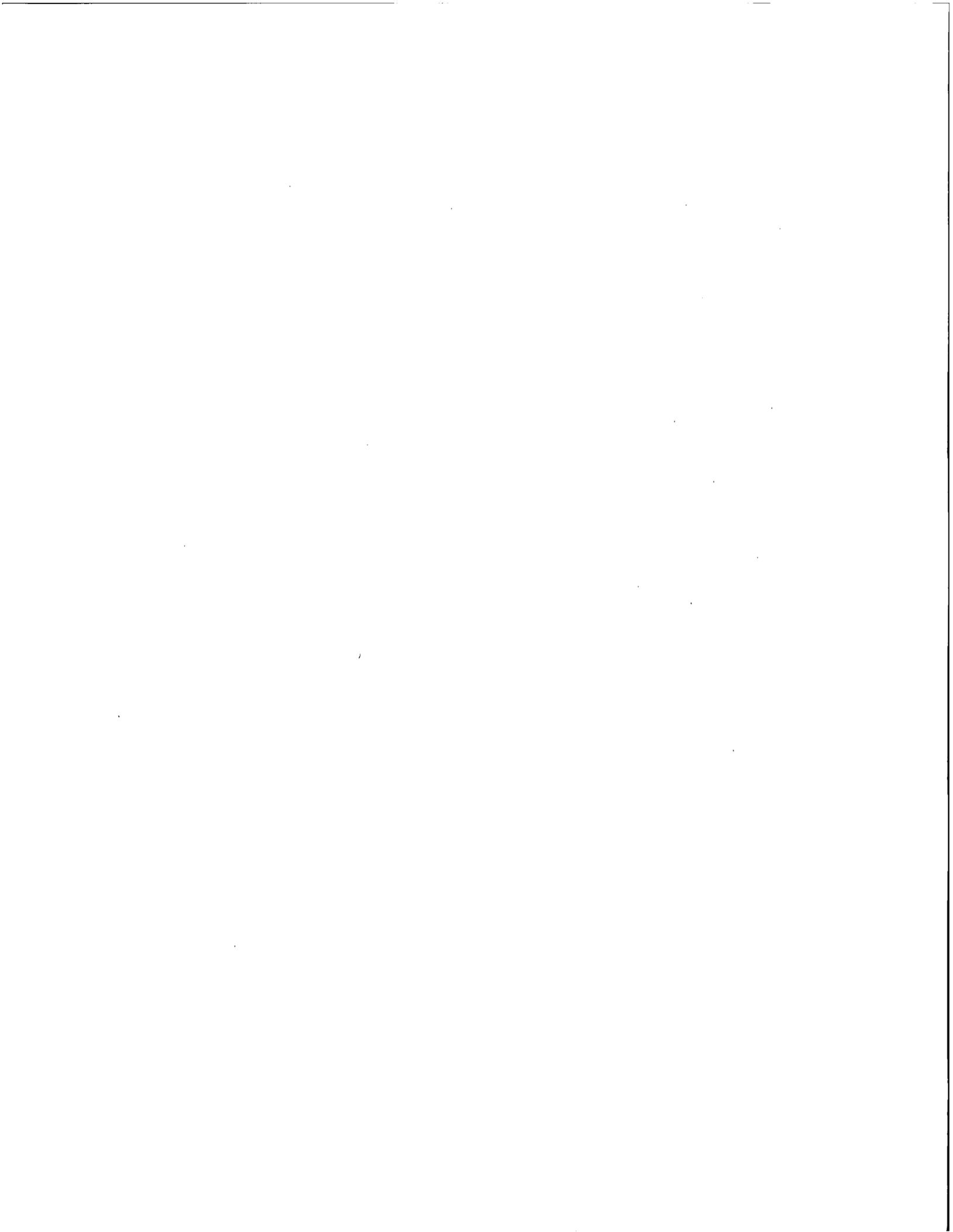
**g. UA markings.**

(1) This UA must be marked with its U.S. registration number in accordance with part 45 or alternative marking approval issued by the FAA Production and Airworthiness Division (AIR-200).

(2) This UA must display the word *Experimental* in accordance with § 45.23(b), Display of marks, unless otherwise granted an exemption from this requirement.

**h. Required documentation.** Prior to conducting the initial gMAV flight operations, Honeywell must forward a copy of the gMAV Special Airworthiness Certificate, Operating Limitations and Program Letter to the following FAA personnel:

(1) Mr. Roger Trevino, System Support Specialist, FAA Central Service Area, System Support Group, AJO2-C2, email: [roger.trevino@faa.gov](mailto:roger.trevino@faa.gov), fax: 817-222-5547.



(2) Richard Posey, Aviation Safety Inspector, Production and Airworthiness Division, AIR-200, 800 Independence Ave, SW, Washington, DC 20591, telephone (202) 267-9538, email [richard.posey@faa.gov](mailto:richard.posey@faa.gov).

**i. Change in registrant address.** Section 47.45, Change of address, requires that the FAA Aircraft Registry be notified within 30 days of any change in the aircraft registrant's address. Such notification is to be made by providing AC Form 8050-1, Aircraft Registration Application, to the FAA Aircraft Registration Branch (AFS-750) in Oklahoma City, Oklahoma.

**j. Certificate display and manual availability.** The airworthiness and registration certificates must be displayed, and the aircraft flight manual must be available to the pilot, as prescribed by the applicable sections of 14 CFR, or as prescribed by an exemption granted in accordance with 14 CFR part 11, Investigative and Enforcement Procedures, to Honeywell International.

**2. Program Letter.** The Honeywell International gMAV program letter, dated 06/10/2008, will be used as a basis for determining the operating limitations prescribed in this document. All flight operations must be conducted in accordance with the provisions of this document.

### **3. Initial Flight Testing.**

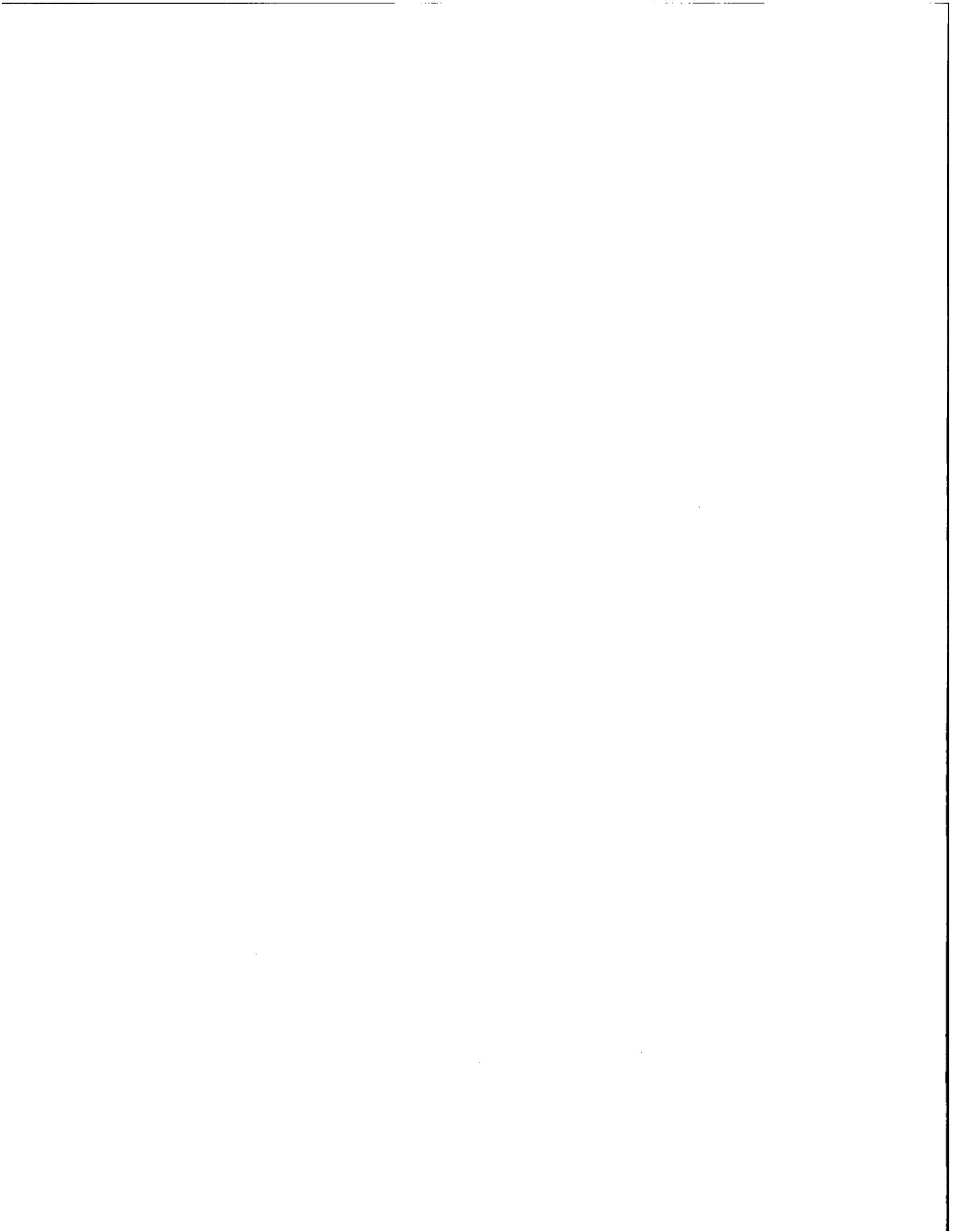
**a. Requirements.** Flight operations shall be conducted within visual line of sight of the pilot/observer. Initial flight-testing shall be completed when the pilot in command can certify compliance with § 91.319(b). Compliance with § 91.319(b) must be recorded in the aircraft records with the following, or a similarly worded, statement:

"I certify that the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous operating characteristics or design features, and is safe for operation."

**b. Aircraft operations for the purpose of market surveys, sales demonstrations, and customer crew training.** These operations cannot be performed until 50 flight hours have been accomplished. An entry in the maintenance records is required as evidence of compliance.

### **4. Authorized Flight Operations Area.**

**a. Description of the authorized flight operations area.** The containment area for flight test will be on the property of the Laguna Pueblo, New Mexico. This area is approximately 60 miles west of the Honeywell facility. It is a remote, desert terrain area with restricted access controlled by the government of the Laguna Pueblo. The attached map shows the layout and the operational area. Population areas near the site are (1) State Hwy 279 which runs through the southwest section, (2) a small housing community approximately 0.5 miles to the northwest, and (3) Interstate 40 approximately 5.5 miles to the south.



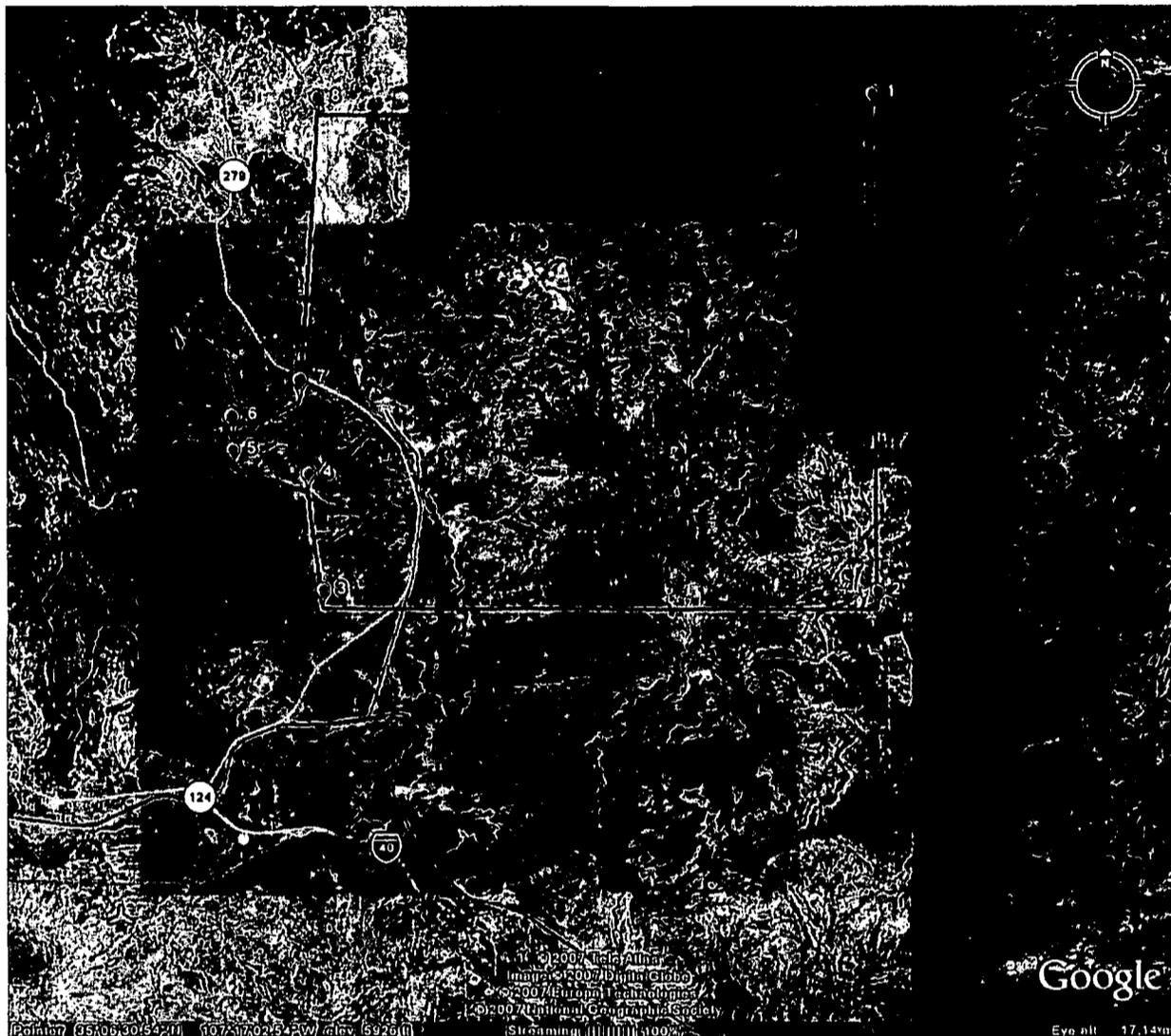


Figure1. Boundary for Flight Operations

**b. Flight test area.** The containment area is in Class G airspace. **The aircraft shall not be flown above an altitude of 400 ft AGL.** The vertices points of the area are shown below:

Laguna Flight Test Area

WPT	Latitude	Longitude	(Leg) Distance
1	35°12'5.17"N	107°12'27.57"W	(1-2) ~7.732
2	35° 5'21.43"N	107°12'23.70"W	(2-3) ~8.710
3	35° 5'21.25"N	107°21'37.06"W	(3-4) ~1.833
4	35° 6'56.33"N	107°21'50.36"W	(4-5) ~1.230
5	35° 7'15.29"N	107°23'5.06"W	(5-6) ~0.466
6	35° 7'39.59"N	107°23'6.48"W	(6-7) ~1.207
7	35° 8'9.70"N	107°21'59.07"W	(7-8) ~4.440
8	35°12'1.02"N	107°21'39.65"W	(8-1) ~8.678

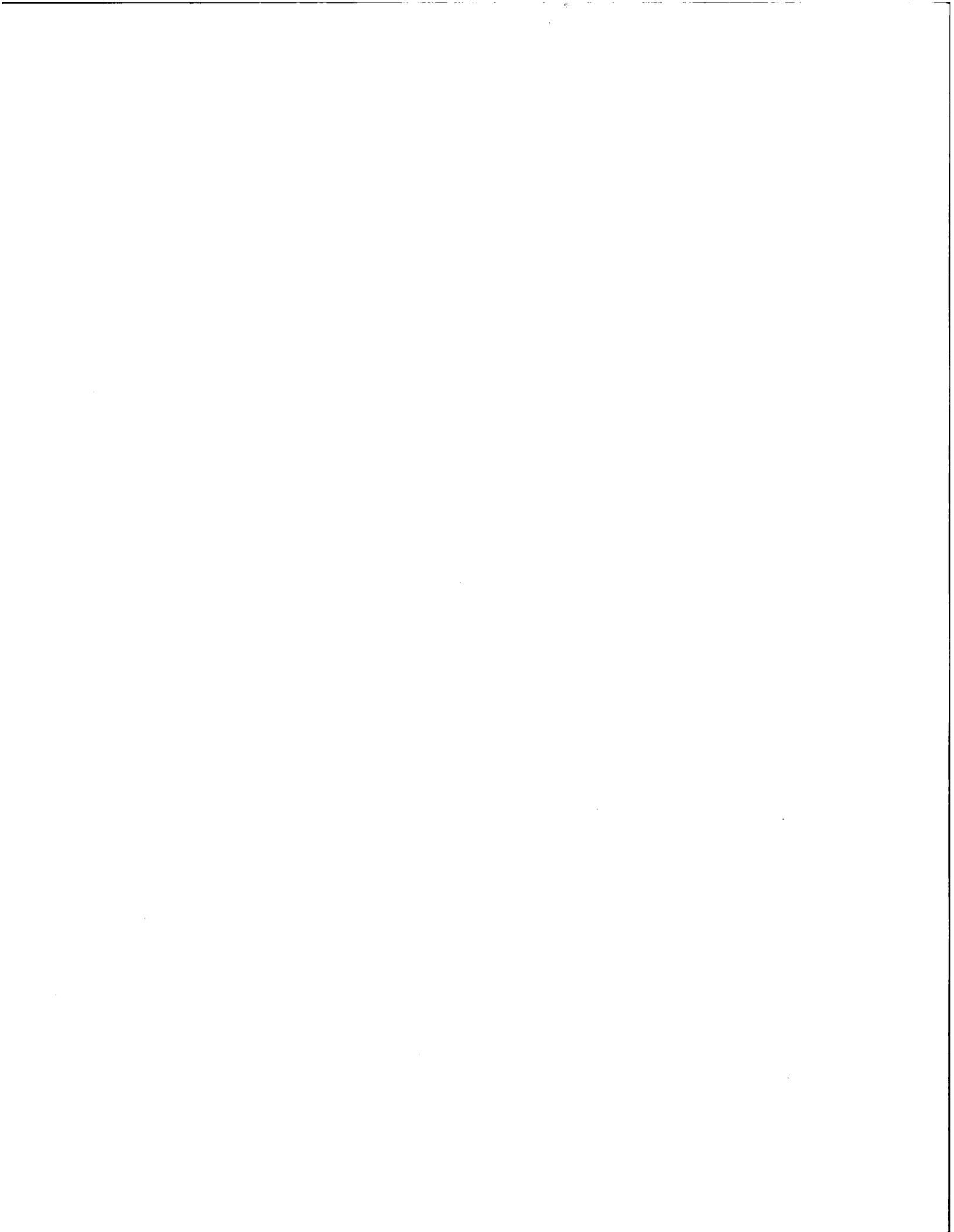




Figure 2. Aeronautical Chart of Albuquerque Area showing Test Site

c. **Authorized flight times and conditions.** All flight operations must be conducted during daylight hours under visual flight rules (VFR).

d. **Criteria for remaining in the flight test area.** The UAS PIC must ensure all UA flight operations remain within the lateral and vertical boundaries of the flight test area.

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Furthermore, the UAS PIC must take into account all factors that may affect the capability of the UA to remain within the flight test area. This includes, but is not limited to, considerations for wind, gross weight, and glide distances.

**e. Incident/accident reporting.** Any incident/accident and any flight operation that transgresses the lateral or vertical boundaries of the flight test area or any restricted airspace must be reported to the FAA within 24 hours. This information must be reported to the Unmanned Aircraft Program Office, AIR-160. AIR-160 can be reached by telephone at 202-385-4636 and fax at 202-385-4651. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: [www.nts.gov](http://www.nts.gov). Further flight operations must not be conducted until the incident is reviewed by AIR-160 and authorization to resume operations is provided to Honeywell International.

## **5. UA Pilots and Observers.**

### **a. UA PIC roles and responsibilities.**

- (1) The UA PIC must perform crew duties for only one UA at a time.
- (2) All flight operations must have a designated UA PIC. The UA PIC has responsibility over each flight conducted and is accountable for the UA flight operation.
- (3) The UA PIC is responsible for the safety of the UA as well as persons and property along the UA flight path. This includes, but is not limited to, collision avoidance and the safety of persons and property in the air and on the ground.
- (4) The UA PIC must avoid densely populated areas (§ 91.319) and exercise increased vigilance when operating within or in the vicinity of published airway boundaries.

### **b. UA PIC certification and ratings requirements.**

- (1) The UA PIC must hold and be in possession of, at a minimum, an FAA private pilot certificate, with either an airplane, rotorcraft, or powered-lift category; and single or multiengine class ratings, appropriate to the type of UA being operated.
- (2) The UA PIC must have, and be in possession of, a valid second-class airman medical certificate issued under 14 CFR part 67, Medical Standards and Certification.

### **c. UA PIC currency, flight review, and training.**

- (1) No person may act as pilot in command of an unmanned aircraft unless that person has made at least three takeoffs and three landings in manned aircraft within the preceding 90 days acting as the sole manipulator of the flight controls.
- (2) The UA PIC must have a flight review in manned aircraft every 24 calendar months in accordance with § 61.56, Flight review.
- (3) The UA PIC must maintain currency in unmanned aircraft in accordance with Honeywell International company procedures.
- (4) The UA PIC must have a flight review in unmanned aircraft every 24 calendar months in accordance with Honeywell International procedures.
- (5) All UA PICs must have successfully completed applicable Honeywell International training for the UAS.

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**d. Supplemental UA pilot roles and responsibilities.**

(1) Any additional UA pilot(s) assigned to a crew station during UA flight operations will be considered a supplemental UA pilot.

(2) A supplemental UA pilot assists the PIC in the operation of the UA and may do so at the same or a different control station as the PIC. The UA PIC will have operational override capability over any supplemental UA pilots, regardless of position.

(3) A supplemental UA pilot must perform crew duties for only one UA at a time.

**e. Supplemental UA pilot certification.** The supplemental UA PIC need not be a certificated pilot, but must have successfully completed a recognized private pilot ground school program.

**f. Supplemental UA pilot currency, flight review, and training.**

(1) All UA pilots must maintain currency in unmanned aircraft in accordance with Honeywell International company procedures.

(2) All UA pilots must have a flight review in unmanned aircraft every 24 calendar months in accordance with Honeywell International procedures.

(3) All UA pilots must have successfully completed applicable Honeywell International training for the UAS.

**g. Observer roles and responsibilities.** The task of the observer is to provide the UA PIC(s) with instructions to maneuver the UA clear of any potential collision with other traffic. To satisfy these requirements:

(1) The observer must perform crew duties for only one UA at a time.

(2) At no time will the observer permit the UA to operate beyond the line-of-sight necessary to ensure maneuvering information can be reliably determined.

(3) At no time will the observer conduct his/her duties more than 2000 ft laterally or 400 ft vertically from the UA.

(4) An observer must maintain continuous visual contact with the UA to discern UA attitude and trajectory in relation to conflicting traffic.

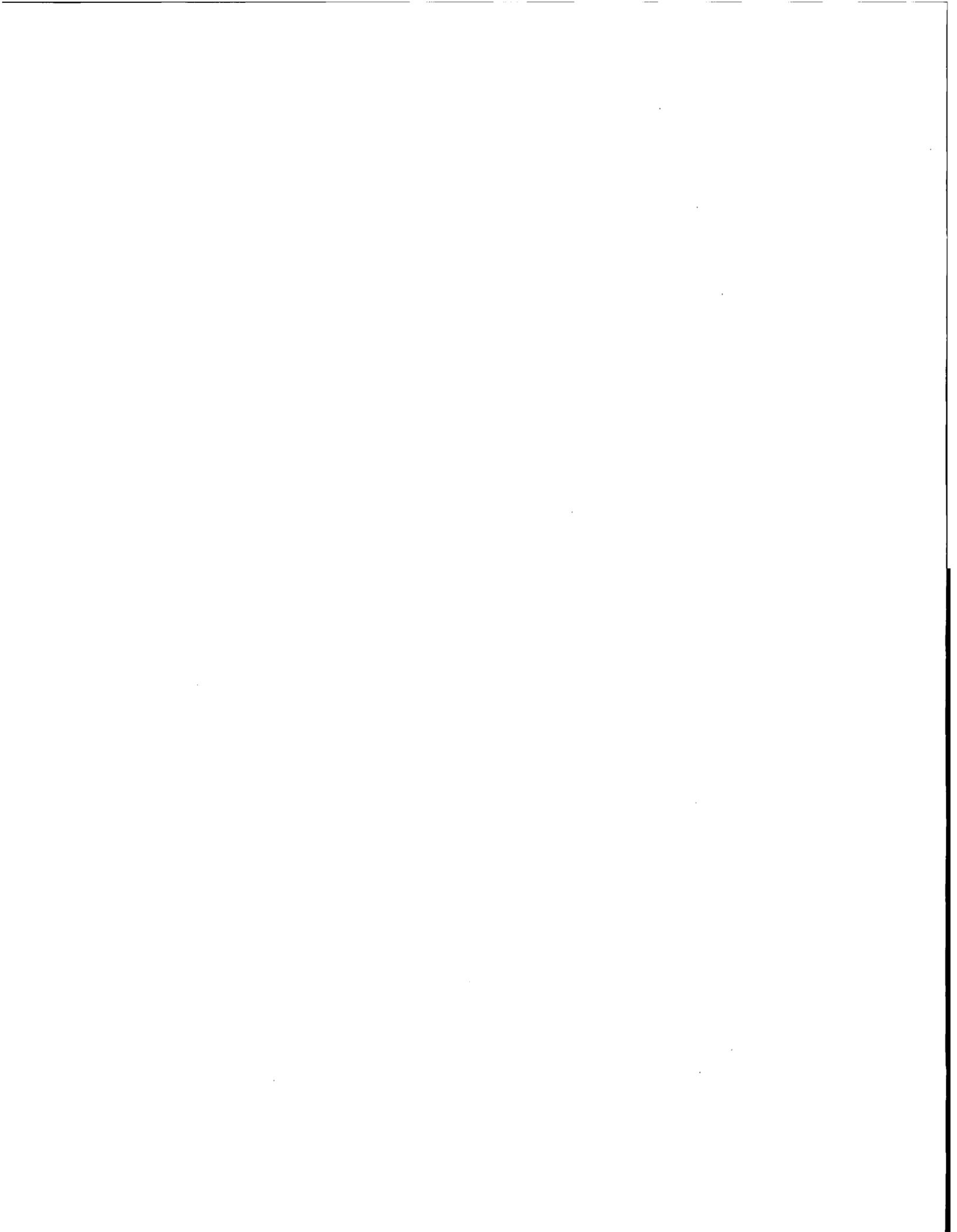
(5) The 2000 ft lateral limit is the maximum range allowed and that a practical distance may be something less, with the determination of such at the discretion of the applicant. Therefore, it will remain the responsibility of the applicant to insure the safety of flight and adequate visual range coverage to mitigate any potential collisions.

(6) Observers must continually scan the airspace for other aircraft that pose a potential conflict.

(7) All flight operations conducted in the flight test area must have an observer to perform traffic avoidance and visual observation to fulfill the see-and-avoid requirement of § 91.113, Right-of-way rules: Except water operations.

**h. Observer certification.**

(1) All observers must either hold, at a minimum, an FAA private pilot license or must have successfully completed specific observer training acceptable to the FAA. An observer does not require currency as a pilot.



(2) All observers must have in their possession a second-class airman medical certificate issued under part 67.

**i. Observer training.**

(1) All observers must be thoroughly trained, be familiar with, and possess operational experience with the equipment being used. Such training is necessary for observation and detection of other aircraft for collision avoidance purposes as outlined in Honeywell International program letter.

(2) All observers must have successfully completed applicable Honeywell International training for the UAS.

**6. Equipage.** The UA must be equipped with operable navigation, position, and/or strobe/anti-collision lights. Strobe/anti-collision lights must be illuminated during all operations.

**7. Communications.**

**a. Before UA flights.** Before conducting operations, the frequency spectrum used for operation and control of the UA must be approved by the Federal Communications Commission or other appropriate government oversight agency.

**b. During UA flights.**

(1) Appropriate air traffic frequencies must be monitored during flight operations.

(2) Honeywell International must contact the local Albuquerque Air Route Traffic Control Center (ARTCC), at (505)-856-4571 in the event of an aircraft fly-away that breaches the flight test area.

(3) All UA positions must maintain two-way communications with each other during all operations. If unable to maintain two-way communication, the UA PIC will expeditiously return the UA to its base of operations while remaining within the flight test area and conclude the flight operation.

**8. Flight Conditions.**

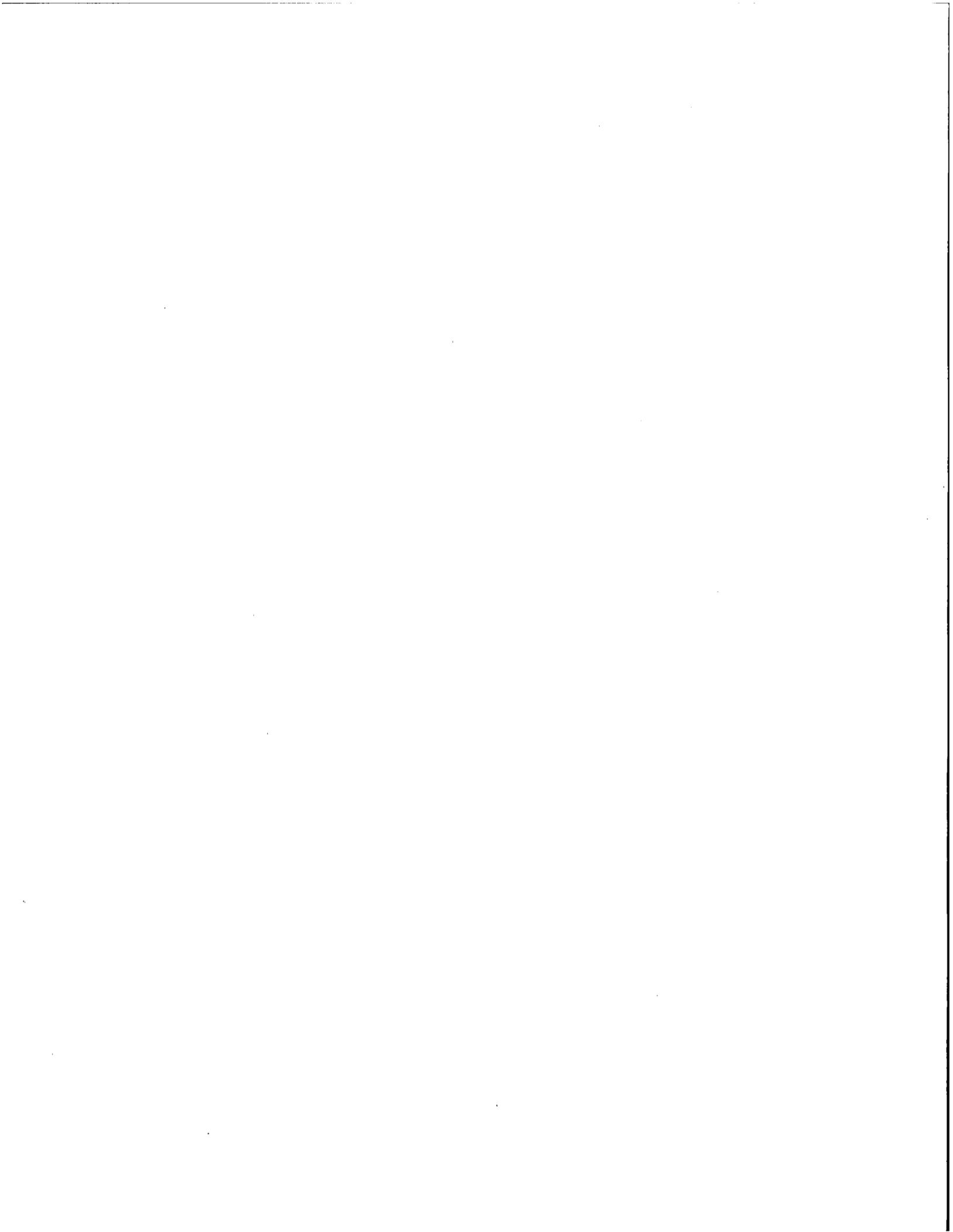
**a. Daylight operations.** All flight operations must be conducted during daylight hours in visual meteorological conditions (VMC), including cloud clearance minimums as specified in § 91.155, Basic VFR weather minimums. Flight operation in instrument meteorological conditions (IMC) is not permitted.

**b. Prohibitions.**

(1) The UA is prohibited from aerobatic flight, that is, an intentional maneuver involving an abrupt change in the UA's attitude, an abnormal acceleration, or other flight action not necessary for normal flight. (See § 91.303, Aerobatic flight.) If aerobatic flight is anticipated, it must be thoroughly discussed during the safety evaluation and be appropriately described in the operating limitations.

(2) Flight operations must not involve carrying hazardous material or the dropping of any objects or external stores.

(3) Each UA must be operated by only one control station at a time. A control station may not be used to operate multiple UAS.



**c. Notice to airman.** Honeywell International must request the issuance of a Notice to Airman (NOTAM) through the local FAA Automated Flight Service Station at least 24 hours before flight operation. The following information shall be provided:

- (1) Name, address, and telephone number of the person giving notice.
- (2) Nature of the activity.
- (3) Date, time, and duration of the activity.
- (4) Size of the affected area in nautical mile radius and affected altitudes.
- (5) Location of center of affected area.
- (6) Location of center of affected area in relation to nearest VOR/DME or VORTAC.

#### **9. Flight Termination and Lost Link Procedures.**

**a. Flight termination.** In accordance with Honeywell International program letter, dated 6/10/2008, flight operations must be discontinued at any point that safe operation of the UA cannot be maintained or if hazard to persons or property is imminent.

**b. Lost link procedures.** In the event of lost link, the UA must provide a means of automatic recovery that ensures airborne operations are predictable and that the UA remains within the flight test area. The observer and all other UAS controls stations will be immediately notified of the lost link condition and the expected UA response.

#### **10. Maintenance and Inspection.**

**a. General requirements.** The UAS must not be operated unless it is inspected and maintained in accordance with the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100, dated 07/28/08, or later accepted FAA revision. Honeywell International must establish and maintain aircraft maintenance records (see paragraph 10(d) below).

**b. Inspections.** No person may operate this UAS within the preceding 12 calendar months unless it has had a condition inspection performed according to the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100. The UAS must also have been found to be in a condition for safe operation. This inspection will be recorded in the UAS maintenance records as described in paragraph 10(d) below.

**c. Authorized inspectors.** Only those individuals trained and authorized by Honeywell International and acceptable to the FAA may perform the inspections and maintenance required by these operating limitations.

**d. Maintenance and inspection records.** Maintenance and inspections of the UAS must be recorded in the UAS maintenance records. The following information must be recorded:

(1) Maintenance record entries must include a description of the work performed, the date of completion for the work, the UAS's total time-in-service, and the name and signature of the person performing the work.

(2) Inspection entries must contain the following, or a similarly worded, statement:  
*I certify that this UAS was inspected on (date), in accordance with the scope and detail of the (applicant name) Inspection and Maintenance Program, and was found to be in a condition for safe operation.*

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(3) UAS instruments and equipment required to be installed must be inspected and maintained in accordance with the requirements of the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100. Any maintenance or inspection of this equipment must be recorded in the UAS maintenance records.

**11. Information Reporting.** Honeywell International will provide the following information to [donald.e.grampp@faa.gov](mailto:donald.e.grampp@faa.gov) on a monthly basis. A copy of the report shall be provided to AIR-200.

- a. Number of flights conducted under this certificate.
- b. Pilot duty time per flight.
- c. Unusual equipment malfunctions (hardware or software).
- d. Deviations from ATC instructions.
- e. Unintended entry into lost link flight mode that results in a course change.

**12. Revisions and Other Provisions.**

**a. Experimental certificates, program letters, and operating limitations.** The experimental certificate, FAA-accepted Honeywell International program letter, and operating limitations cannot be reissued, renewed, or revised without application being made to the San Antonio Manufacturing Inspection District Office, in coordination with AIR-200. AIR-200 will be responsible for FAA Headquarters internal coordination with the Aircraft Certification Service, Flight Standards Service, Air Traffic Organization, Office of the Chief Council, and Office of Rulemaking.

**b. Certificates of waiver or authorization.** No Certificate of Waiver or Authorization (COA) may be issued in association with this experimental certificate unless coordinated with the San Antonio MIDO and AIR-200.

**c. Amendments and cancellations.** The provisions and limitations annotated in this operational approval may be amended or cancelled at any time as deemed necessary by the FAA.

**d. Reviews of revisions.** All revisions to Honeywell International FAA-accepted Inspection and Maintenance Program must be reviewed and accepted by the Albuquerque Flight Standards District Office (FSDO). The Albuquerque FSDO can be reached at telephone number (505) 764-1200.

**13. UAS Modifications.**

**a. Software and system changes.** All software and system changes will be documented as part of the normal maintenance procedures and will be available for inspection. All software and system changes must be inspected and approved per the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100. All software changes to the aircraft and control station are categorized as major changes, and must be provided in summary form at the time they are incorporated.

**b. Major modifications.** All major modifications, whether performed under the experimental certificate, COA, or other authorizations, that could potentially affect the safe operation of the system, must be documented and provided to the FAA before operating

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10/10/10

the aircraft under this certificate. Major modifications incorporated under COA or other authorization need to be provided only if the aircraft is flown under these authorizations during the effective period of the experimental certificate.

**c. Submission of modifications.** All information requested must be provided to AIR-200.

End of Limitations



07/31/2008  
Issued at Albuquerque, NM

James Fote  
Aviation Safety Inspector (Mfg)  
San Antonio Manufacturing Inspection District  
Office, MIDO-43  
10100 Reunion Place  
Suite 650  
San Antonio, Texas 78216

**I certify that I have read and understand the operating limitations and conditions that are a part of the special airworthiness certificate, FAA Form 8130-7, issued on 07/31/2008, for the purposes of research and development, market survey, and crew training.**

**This special airworthiness certificate is issued for Honeywell International gMAV, serial number 07010320, registration number N3047W.**



7/31/08  
Date:

Applicant (signature)

Name: Vaughn Fulton

Title: Honeywell Unmanned Aerial Systems Program Manager

Company: Honeywell International

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U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*Superseded*

12/06/2007

San Antonio Manufacturing Inspection District Office,  
MIDO-43  
10100 Reunion Pl.  
SUITE 650  
San Antonio, TX 78216

**EXPERIMENTAL - OPERATING LIMITATIONS**  
**RESEARCH AND DEVELOPMENT, MARKET SURVEY AND CREW TRAINING**

<b>REGISTERED OWNER NAME:</b> HONEYWELL INTERNATIONAL	<b>AIRCRAFT BUILDER:</b> HONEYWELL INTERNATIONAL
<b>REGISTERED OWNER ADDRESS:</b> 9201 SAN MATEO BLVD, NE ALBUQUERQUE, NM 87113-2227	<b>YEAR MANUFACTURED:</b> 2007
<b>AIRCRAFT DESCRIPTION:</b> MICRO UNMANNED AIR VEHICLE gMAV MODEL	<b>AIRCRAFT SERIAL NUMBER:</b> 07010320
<b>AIRCRAFT REGISTRATION:</b> N3047W	<b>AIRCRAFT MODEL DESIGNATION:</b> MICRO UNMANNED AIR VEHICLE
	<b>ENGINE MODEL:</b> 3W56iB2-CS
	<b>PROPELLER MODEL: N/A</b> AAI# 38573-4190-1 P/N for FAN

**The following conditions and limitations apply to all Honeywell Micro Unmanned Air Vehicle, gMAV Model flight operations while operating in the National Airspace System (NAS):**

**1. GENERAL**

a. For the purposes of the **Special Airworthiness Certificate and Operating Limitations**, the Micro Unmanned Air Vehicle, gMAV Model (gMAV) Unmanned Aircraft System (UAS), owned and operated by Honeywell, is considered to be an integrated system. The integrated system is comprised of the gMAV Model aircraft, S/N: 07010320, unmanned aircraft (UA) control station(s) (fixed or mobile), telemetry, navigation and communications equipment. This equipment includes ground, air and space-based equipment that is used for control of the gMAV Model UA.

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b. Unless otherwise specified in this document, the Pilot-in-Command (PIC) and Honeywell shall comply with all applicable sections and parts of 14 CFR including, but not limited to, parts 61 and 91. Alternative methods of compliance with specific regulations shall be annotated in this document as required.

c. No person may operate this UAS for other than the purpose of Research and Development (R&D) or Crew Training or Market Survey to accomplish the flight operation outlined in Honeywell Program Letter dated 12/06/07, which describes compliance with §21.193(d), and has been made available to the pilot in command of the UAS. These operating limitations are a part of Form 8130-7, and must be made available to the pilot in command at all times. In addition, this UAS must be operated in accordance with applicable air traffic and general operating rules of part 91, and all additional limitations herein prescribed under the provisions of §91.319(e).

d. The PIC must determine that the UAS is in a condition for safe operation, and in a configuration appropriate for the intended purpose of the flight.

e. When changing between operating purposes of a multiple-purpose certificate, the operator must determine that the aircraft is in a condition for safe operation and appropriate for the purpose intended. A record entry will be made by the PIC to document that finding in the aircraft logbook.

f. No person may operate this UA to carry property for compensation or hire.

g. This UA must be marked with its U.S. Registration number N3047W in accordance with 14 CFR part 45, or an alternative procedure approved by the Federal Aviation Administration.

h. This UA must display the word "EXPERIMENTAL" in accordance with §45.23(b) or an alternative procedure approved by the Federal Aviation Administration.

i. Prior to conducting the initial gMAV flight operations, Honeywell must forward a copy of the gMAV Special Airworthiness Certificate, Operating Limitations and Program Letter to Mr. Roger Trevino, System Support Specialist, FAA Central Service Area, System Support Group, AJO2-C2, email: [roger.trevino@faa.gov](mailto:roger.trevino@faa.gov), fax: 817-222-5547.

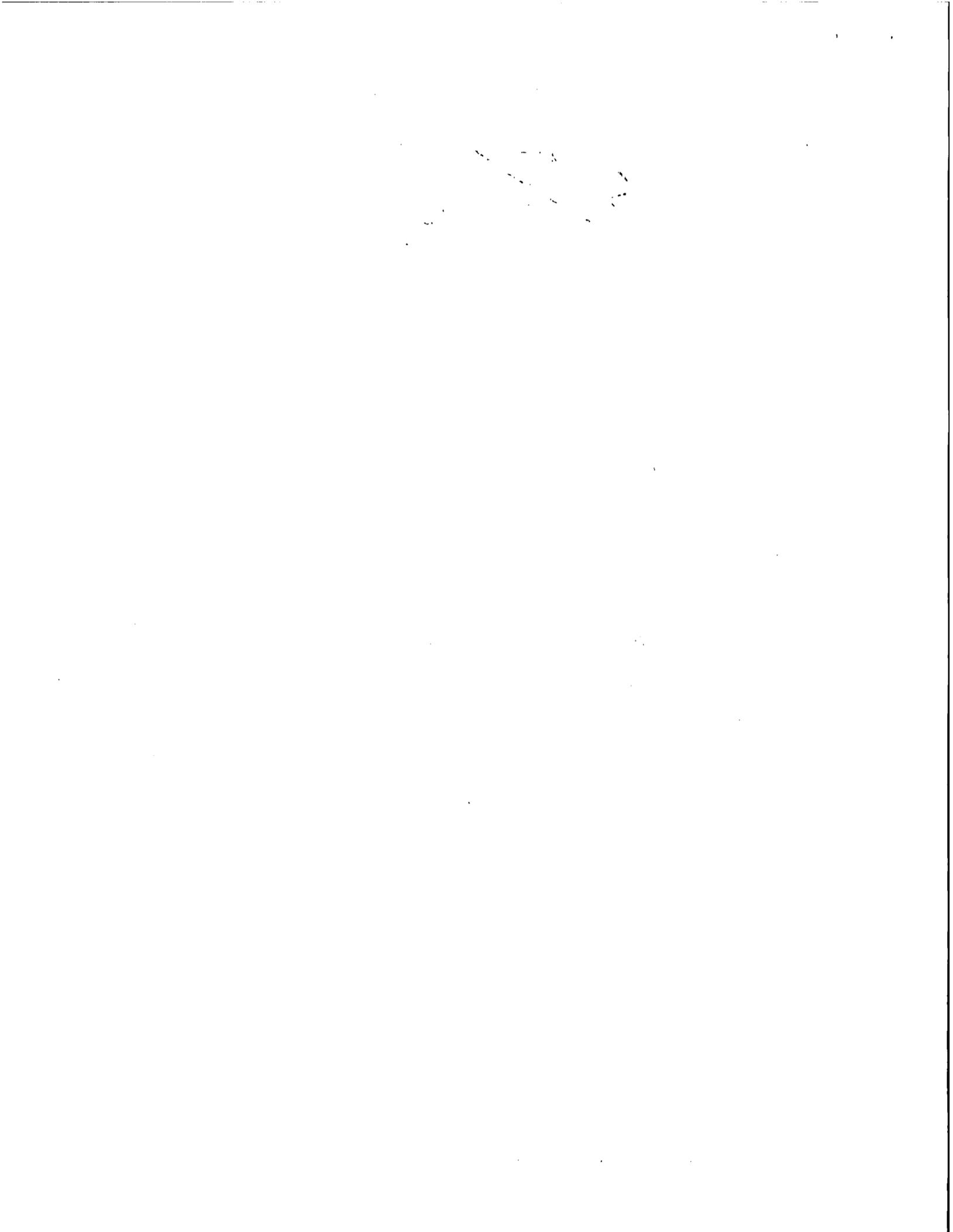
j. Section 47.45 requires that the FAA Aircraft Registry must be notified within 30 days of any change in the aircraft registrant's address. Such notification is to be made by submitting Form 8050-1 to AFS-750 in Oklahoma City, Oklahoma.

## **2. PROGRAM LETTER**

The Honeywell Program Letter, dated 12/06/07 was used as a basis for determining the operating limitations prescribed in this document. All flight operations must be conducted in accordance with the provisions contained in these operating limitations.

## **3. INITIAL FLIGHT TESTING**

Flight operations shall be conducted within visual line of sight of the pilot/observer. Initial flight-testing shall be completed when the pilot in command can certify compliance with § 91.319(b).



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Compliance with § 91.319(b) must be recorded in the aircraft records with the following, or a similarly worded, statement:

**“I certify that the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous operating characteristics or design features, and is safe for operation.”**

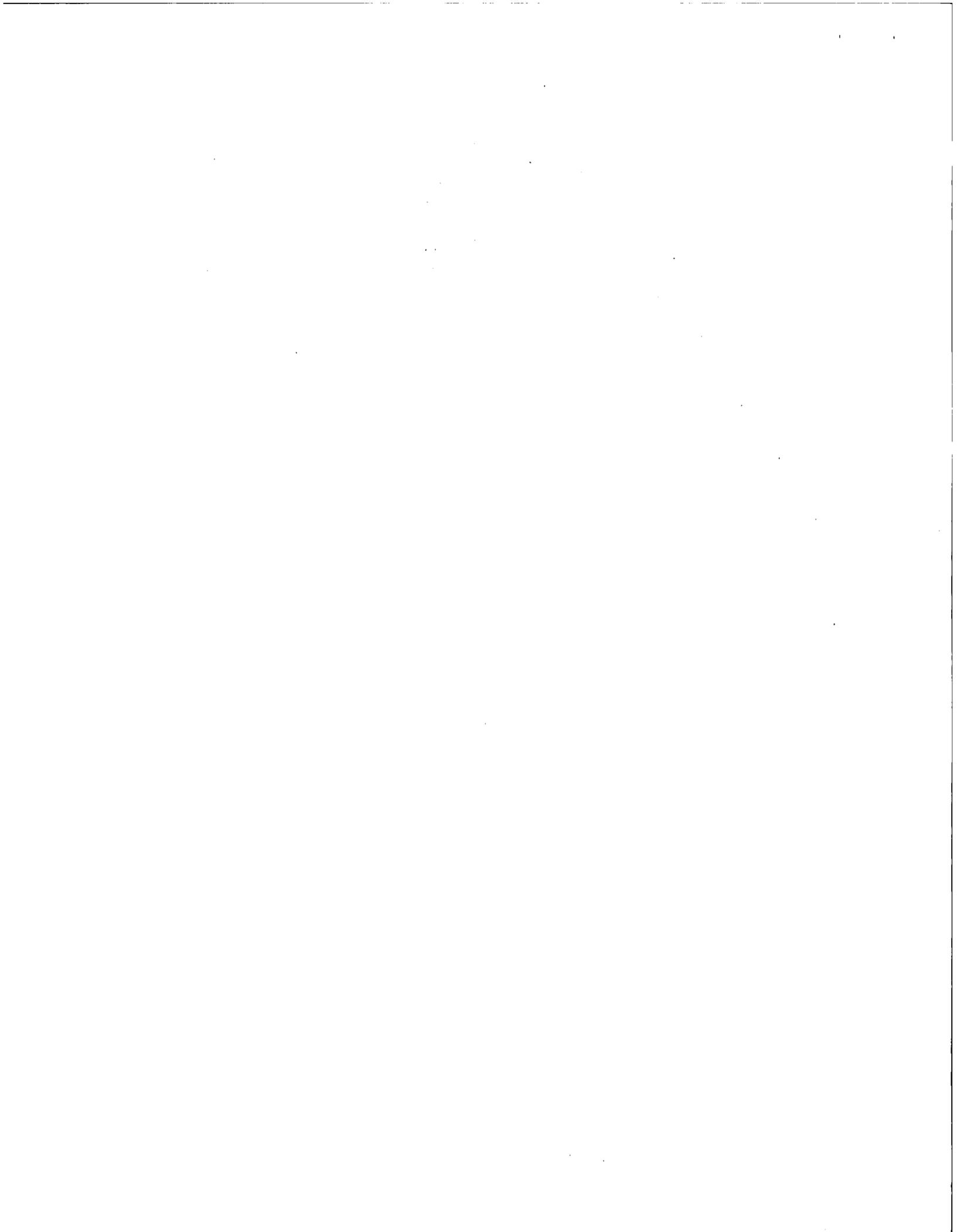
#### **4. AUTHORIZED FLIGHT TEST OPERATIONS AREA**

a. The containment area for flight test will be on the property of the Laguna Pueblo, New Mexico. This area is approximately 60 miles from the Honeywell facility. It is a remote, desert terrain area with restricted access controlled by the government of the Laguna Pueblo. The attached map shows the layout and the operational area.

Population areas near the site are (1) State Hwy 279 which runs through the southwest section, (2) a small housing community approximately 0.5 miles to the northwest, and (3) Interstate 40 approximately 5.5 miles to the south.



Boundary for Flight Operations



12/06/07

Boundary for Flight Operations

b. The containment area is in Class G airspace. **The aircraft shall not be flown above an altitude of 400 ft AGL.** The corner points of the area are shown below:

**Laguna Flight Test Area**

WPT	Latitude	Longitude	(Leg) Distance
1	35°12'5.17"N	107°12'27.57"W	(1-2) ~7.732
2	35° 5'21.43"N	107°12'23.70"W	(2-3) ~8.710
3	35° 5'21.25"N	107°21'37.06"W	(3-4) ~1.833
4	35° 6'56.33"N	107°21'50.36"W	(4-5) ~1.230
5	35° 7'15.29"N	107°23'5.06"W	(5-6) ~0.466
6	35° 7'39.59"N	107°23'6.48"W	(6-7) ~1.207
7	35° 8'9.70"N	107°21'59.07"W	(7-8) ~4.440
8	35°12'1.02"N	107°21'39.65"W	(8-1) ~8.678

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Aeronautical Chart of Albuquerque Area showing Test Site

c. The PIC shall ensure that all UA flight operations remain within the lateral and vertical boundaries of the flight test operations area or any restricted area approved by the using



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agency. Furthermore, the PIC shall take into account all factors that may affect the capability of remaining within the containment areas. This includes, but is not limited to, considerations for wind and gross weight.

d. Incident / Accident Reporting. Any incident / accident and any flight operation that transgresses the lateral or vertical boundaries of the Containment Area or any restricted airspace shall be reported to the FAA, as soon as practicable, but always within 24 hours. The point of contact to report this information to the FAA is the Manager of the Unmanned Aircraft Program Office, AIR-160, Mr. Doug Davis. Mr. Davis can be reached by phone at 202-385-4636, fax at 202-385-4651, or by e-mail at [Kenneth.d.davis@faa.gov](mailto:Kenneth.d.davis@faa.gov). Accidents shall be reported to the National Transportation Safety Board per instructions contained on the NTSB website: [www.nts.gov](http://www.nts.gov). Further flight operations shall not be conducted until the incident / accident is reviewed by ATO, AFS, and AIR-160, and authorization to resume operations is received.

## **5. UA PILOT AND OBSERVER**

a. All flight operations conducted in the flight test operations area shall have an observer to perform traffic avoidance and visual observation to fulfill the "see and avoid" requirement of §91.113.

b. The UA PIC shall hold, at a minimum, an FAA Private Pilot certificate and have it in his/her possession.

c. All observers shall:

- 1) Hold at a minimum, an FAA Private Pilot certificate, or
- 2) Successfully complete Honeywell-specific observer training acceptable to the FAA.

d. The UA PIC shall maintain currency in manned aircraft per 14 CFR §61.57.

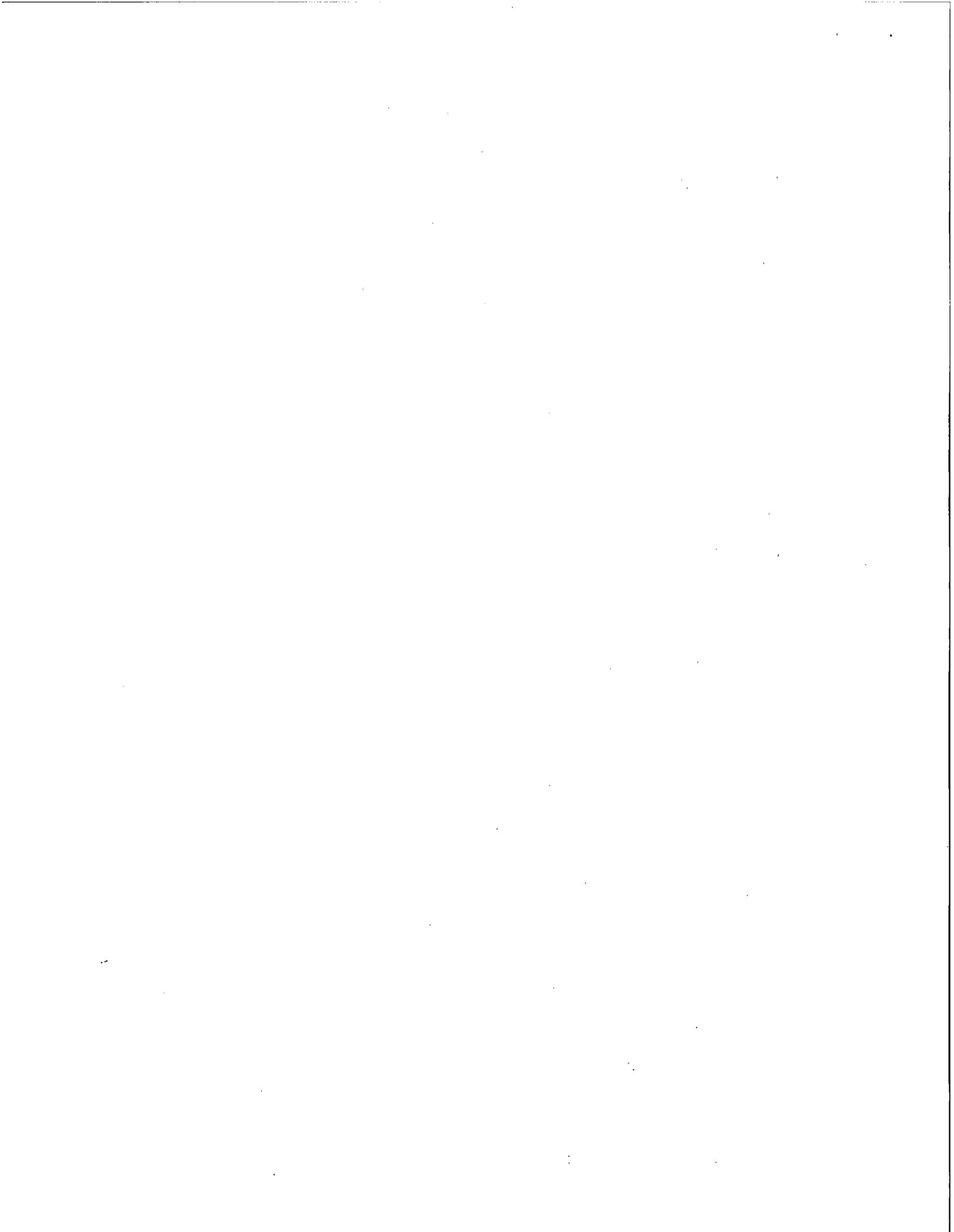
e. All UA pilots shall maintain currency in unmanned aircraft in accordance with Honeywell company procedures.

f. The UA PIC shall have a Flight Review in manned aircraft every 24 calendar months per 14 CFR §61.56.

g. All UA pilots shall have a Flight Review in unmanned aircraft every 24 calendar months in accordance with Honeywell company procedures.

h. The UA PIC shall have operational override capability over any Supplemental Pilot, regardless of position.

i. The Supplemental Pilot need not be a certificated pilot. If the Supplemental Pilot is not a certificated pilot, the Supplemental Pilot must have successfully completed a recognized Private Pilot ground school or successfully completed the private pilot written test within 90 days of the issuance of these limitations.



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j. Pilots and observers shall have successfully completed applicable manufacturer training for high level systems and operational understanding of the UAS.

k. Pilots and observers must have in their possession a valid third class (or higher) airman medical certificate that has been issued under 14 CFR part 67.

l. A PIC must be designated at all times and be responsible for the safety of the UAS and persons and property along the UA flight path. This includes, but is not limited to, collision avoidance and the safety of persons and property in the air and on the ground. The PIC shall avoid densely populated areas (14 CFR § 91.319) and exercise increased vigilance when operating within published airway boundaries.

m. UA pilots and observers shall perform crew duties for only one UA at a time.

n. All observers must be thoroughly trained, familiar with, and possess, operational experience with the equipment being utilized for observation and detection of other aircraft for collision avoidance purposes.

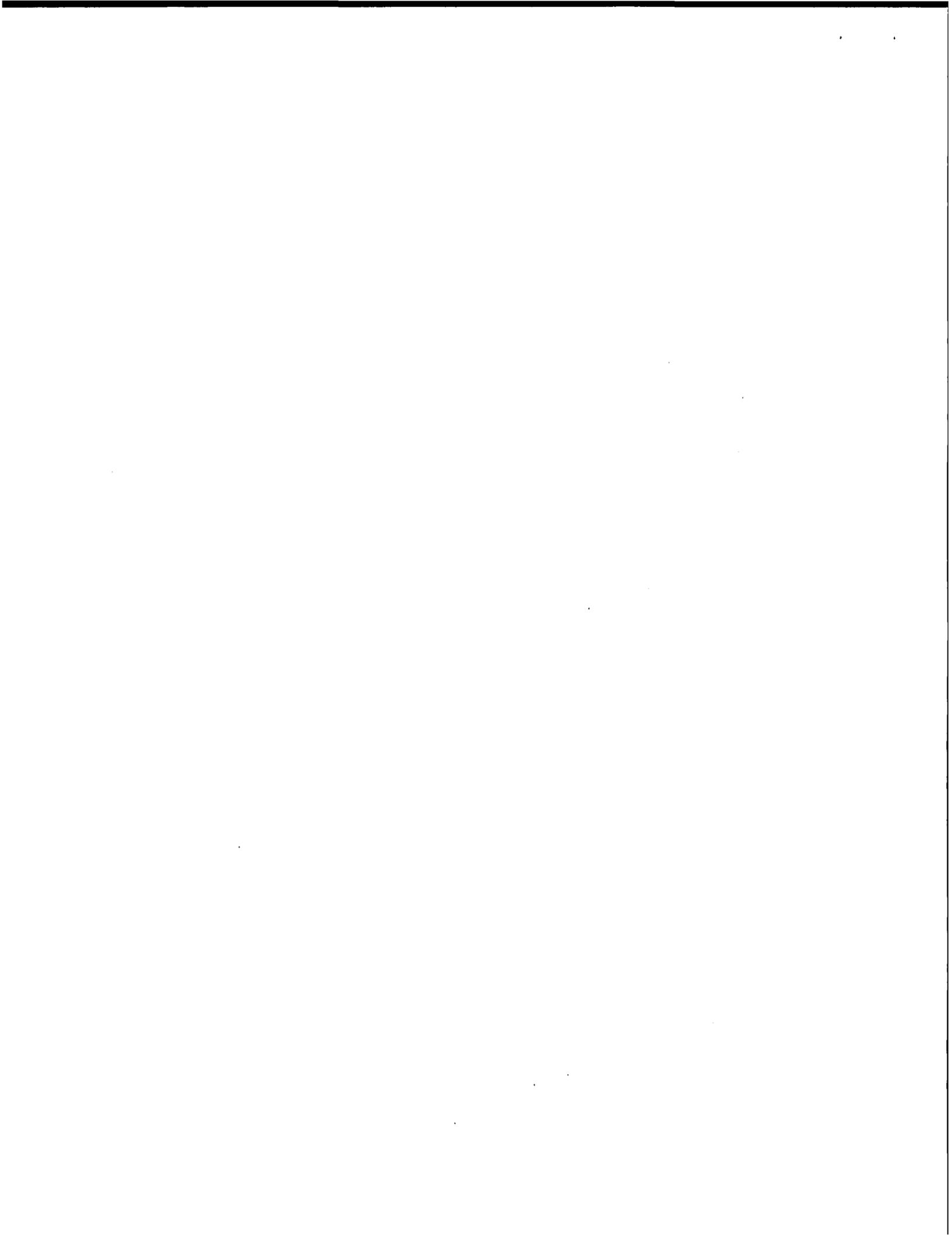
o. Visual Observer Responsibilities: The task of the observer is to provide the pilot of the UA with instructions to maneuver the UA clear of any potential collision with other traffic. Visual observer duties require continuous visual contact with the UA at all times in such a manner as to be able to discern UA attitude and trajectory. At no time shall the visual observer permit the UA to operate beyond line-of-sight necessary to ensure that maneuvering information can be reliably determined. At no time shall visual observers conduct their duties more than **2000** ft laterally and 400 ft vertically from the UA. Observers must maintain continuous visual contact with the UA. The small size of this particular UA may not allow for adequate observation at the **2000** ft limit. It should be understood that this limit is the maximum range allowed and that a practical distance may be something less, with the determination of such at the discretion of the applicant. Therefore, it will remain the responsibility of the applicant to insure the safety of flight and adequate visual range coverage to mitigate any potential collisions.

## **6. COMMUNICATIONS**

a. Honeywell shall contact Albuquerque Air Route Traffic Control Center (ARTCC) at 505-856-4571 in the event of a fly-away that breaches the containment area.

b. A distant (D) Notice to Airmen (NOTAM) shall be issued when UAS operations are being conducted. Honeywell shall contact the Automated Flight Service Station (FSS) no less than 48 hours prior to the operation and provide:

- 1) Name, address, and telephone number of the person giving notice.
- 2) Nature of the activity.
- 3) Date, time, and duration of the activity.
- 4) Size of the affected area in nautical mile radius and affected altitudes.
- 5) Location of center of affected area.
- 6) Location of center of affected area in relation to nearest VOR/DME or VORTAC.



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c. The PIC and observer(s) must maintain two-way communications with each other during all operations.

d. If communications cannot be maintained between the PIC and observer(s), the UA will expeditiously return to its base of operations while remaining within the flight operations area, and conclude the flight operation.

e. Radio frequency spectrum used for operation and control of the UA must be approved by the FCC or other appropriate government oversight agency prior to operations being conducted.

## **7. FLIGHT CONDITIONS**

a. All flight operations must be conducted under visual flight rules (VFR) in visual meteorological conditions (VMC), including cloud clearance minimums as specified in 14 CFR § 91.155. Flight operations under instrument flight rules (IFR) or in instrument meteorological conditions (IMC) are not authorized. Flight operations shall not be conducted under the Special VFR criteria specified in 14 CFR § 91.157, nor shall flight operations be conducted when flight visibility is less than three statute miles.

b. All flight operations within the flight operations area as specified in Section 4b shall be conducted during daylight hours only.

c. The UA is prohibited from aerobatic flight, that is, an intentional maneuver involving an abrupt change in the UA's attitude, an abnormal acceleration, or other flight action not necessary for normal flight (§91.303).

d. Flight operations must not involve carrying hazardous material or the dropping of any objects or external stores.

e. The UA shall be equipped with strobe/anti-collision lights and shall be illuminated at all times.

## **8. FLIGHT TERMINATION & LOST LINK PROCEDURES**

a. Flight operations must be discontinued at any point when the approved flight operations area is breached and/or the control of the UA is questionable. If it is determined that the UA is still under control of the PIC, the UA shall return to base (RTB).

b. In the event of lost link, the UA must provide a means of automatic recovery that ensures airborne operations are predictable and that the UA remains within the flight operations area.

## **9. MAINTENANCE**

a. This UAS must not be operated unless it is inspected and maintained in accordance with the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100, dated 12/06/07. Each inspection must be recorded in the UAS maintenance records.

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12/06/07

b. No person may operate this UAS unless within the preceding 12 calendar months it has had a condition inspection performed in accordance with FAA-accepted, Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100, dated 12/06/07, and been found to be in a condition for safe operation. This inspection will be recorded in the UAS maintenance records.

c. Only those individuals authorized by Honeywell, and acceptable to the FAA, may perform inspections required by these operating limitations.

d. Inspections of the UAS must be recorded in the UAS maintenance records showing the following, or a similarly worded, statement: "I certify that this UAS has been inspected on [insert date] in accordance with the scope and detail of the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100 dated 12/06/07, and found to be in a condition for safe operation." The entry will include the UA's total time-in-service, the name, signature, type of certificate and certificate number of the person performing the inspection.

e. UAS instruments and equipment installed must be inspected and maintained in accordance with the requirements of the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100 dated 12/06/07. Any maintenance or inspection of this equipment must be recorded in the UAS maintenance records.

## **10. EQUIPAGE**

- a. Reserved.

## **11. INFORMATION REPORTING**

Honeywell shall provide the following information to [donald.e.grampp@faa.gov](mailto:donald.e.grampp@faa.gov) on a monthly basis. A copy of the report shall be provided to AIR-200.

- a. Number of flights conducted under this certificate.
- b. Pilot duty time per flight.
- c. Unusual equipment malfunctions (hardware or software), if any.
- d. Deviations from ATC instructions.
- e. Unintended entry into lost link flight mode that results in a course change.

## **12. REVISIONS**

a. The experimental certificate, Honeywell's FAA-accepted program letter, and operating limitations cannot be reissued, renewed, or revised without application being made to the San Antonio MIDO, and coordinated with the Albuquerque Flight Standards District Office, and the Production and Airworthiness Division, AIR-200. AIR-200 will be responsible for headquarters internal coordination with the Aircraft Certification Service, Flight Standards Service, Air Traffic, Office of Chief Council, and Office of Rulemaking.



12/06/07

**b.** No Certificate of Authorization or Waiver may be issued in association with this Experimental Certificate unless coordinated with the San Antonio MIDO and the Production and Airworthiness Division, AIR-200.

**c.** The provisions and limitations annotated in this operational approval may be amended or cancelled at any time as deemed necessary by the FAA.

**d.** All revisions to the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100 dated 12/06/07, must be reviewed and accepted by the Albuquerque Flight Standards District Office.

### **13. UA MODIFICATIONS**

**a.** All software and system changes will be documented as part of the normal maintenance procedures and be available for inspection. All software and system changes shall be inspected and approved per the Honeywell Quality Management System. All software changes to the aircraft and GCS are categorized as major modifications, and shall be provided in summary form at the time they are incorporated.

**b.** All major modifications, whether performed under the experimental certificate, COA, or other authorizations, that could potentially effect the safe operation of the system, shall be documented and shall be provided to the FAA prior to operating the aircraft under this certificate.

**c.** All information requested shall be provided to AIR-200.

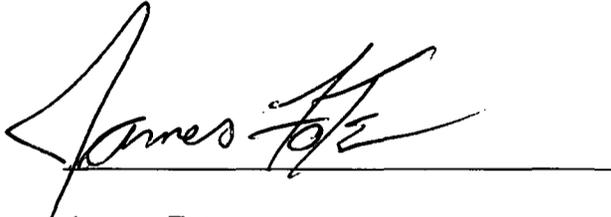
End of Limitations.



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12/06/07



12/06/07  
Issued at Albuquerque, NM

James Fote  
Aviation Safety Inspector (Mfg)  
San Antonio Manufacturing Inspection District  
Office, MIDO-43  
10100 Reunion Place  
Suite 650  
San Antonio, Texas 78216

I certify that I have read and understand the operating limitations and conditions that are a part of the Special Airworthiness Certificate, FAA Form 8130-7 issued on 12/06/07, for the purpose of Research and Development, Crew Training, or Market Survey.

This Airworthiness Certificate is issued for Honeywell International, Micro Unmanned Air Vehicle, gMAV Model, serial number 07010320, registration number N3047W. This certification expires on 12/5/08.

Note: If the stated limitations or conditions cannot be complied with, Honeywell International Micro Unmanned Air Vehicle, gMAV Model flight operations shall be discontinued.



Applicant (signature)  
Name: Vaughn Fulton  
Title: Honeywell Unmanned Aerial Systems Program Manager  
Company: Honeywell International

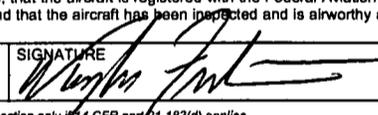
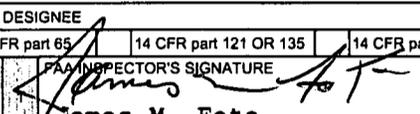
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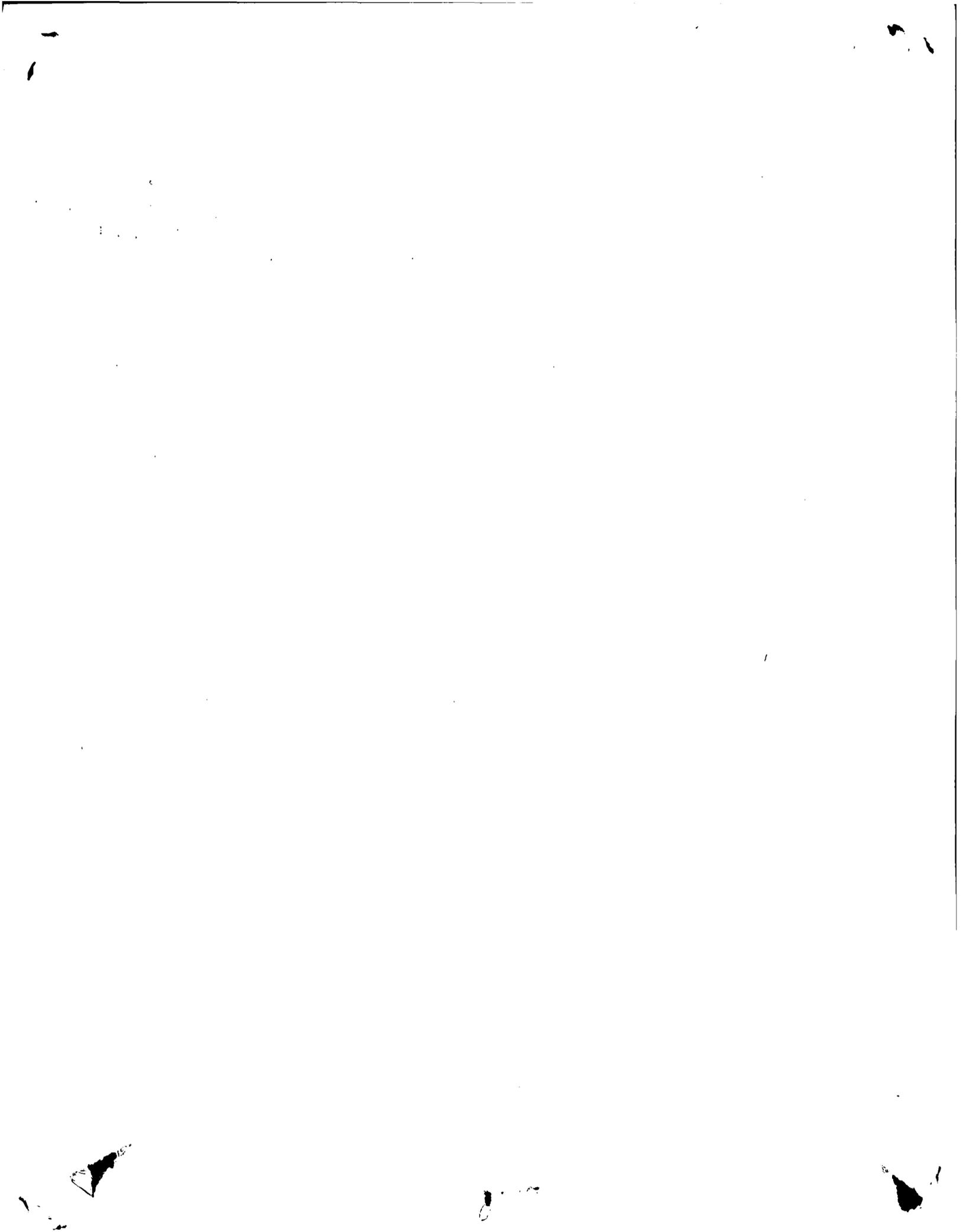


FAA FORM 8130-6, APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE

Form Approved O.M.B. No. 2120-0018  
09/30/2007

Accepted KA Jul/14/2008

 <p>U.S. Department of Transportation Federal Aviation Administration</p>		<p><b>APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE</b></p>		<p><b>INSTRUCTIONS</b> - Print or type. Do not write in shaded areas; these are for FAA use only. Submit original only to an authorized FAA Representative. If additional space is required, use attachment. For special flight permits complete Sections II, VI and VII as applicable.</p>																																																																																																																																																														
I. AIRCRAFT DESIGNATION	1. REGISTRATION MARK	2. AIRCRAFT BUILDER'S NAME (Make)	3. AIRCRAFT MODEL DESIGNATION	4. YR. MFR.	FAA CODING																																																																																																																																																													
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8. NUMBER OF ENGINES	9. PROPELLER BUILDER'S NAME (Make)	10. PROPELLER MODEL DESIGNATION	11. AIRCRAFT IS (Check if applicable)																																																																																																																																																															
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III. OWNER'S CERTIFICATION																																																																																																																																																																		
A. REGISTERED OWNER (As shown on certificate of aircraft registration)			IF DEALER, CHECK HERE →																																																																																																																																																															
NAME Honeywell International			ADDRESS 9201 San Mateo Blvd NE Albuquerque, NM 87113-2227																																																																																																																																																															
B. AIRCRAFT CERTIFICATION BASIS (Check applicable blocks and complete items as indicated)																																																																																																																																																																		
AIRCRAFT SPECIFICATION OR TYPE CERTIFICATE DATA SHEET (Give No. and Revision No.)			AIRCRAFT LISTING (Give page number(s))																																																																																																																																																															
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C. AIRCRAFT OPERATION AND MAINTENANCE RECORDS																																																																																																																																																																		
CHECK IF RECORDS IN COMPLIANCE WITH 14 CFR Section 91.417			TOTAL AIRFRAME HOURS 4.0 hours		EXPERIMENTAL ONLY (Enter hours flown since last certificate issued or renewed) N/A																																																																																																																																																													
D. CERTIFICATION - I hereby certify that I am the registered owner (or his agent) of the aircraft described above, that the aircraft is registered with the Federal Aviation Administration in accordance with Title 49 of the United States Code 44101 et seq. and applicable Federal Aviation Regulations, and that the aircraft has been inspected and is airworthy and eligible for the airworthiness certificate requested.																																																																																																																																																																		
DATE OF APPLICATION 06 December 2007		NAME AND TITLE (Print or type) Vaughn Fulton, Senior Program Manager UAS		SIGNATURE 																																																																																																																																																														
IV. INSPECTION AGENCY VERIFICATION																																																																																																																																																																		
A. THE AIRCRAFT DESCRIBED ABOVE HAS BEEN INSPECTED AND FOUND AIRWORTHY BY: (Complete the section only if 14 CFR part 21.183(d) applies.)																																																																																																																																																																		
2	14 CFR part 121 CERTIFICATE HOLDER (Give Certificate No.)	3	CERTIFICATED MECHANIC (Give Certificate No.)	6	CERTIFICATED REPAIR STATION (Give Certificate No.)																																																																																																																																																													
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V. FAA REPRESENTATIVE CERTIFICATION																																																																																																																																																																		
(Check ALL applicable block items A and B)																																																																																																																																																																		
A. I find that the aircraft described in Section I or VII meets requirements for				4. THE CERTIFICATE REQUESTED																																																																																																																																																														
B. Inspection for a special permit under Section VII was conducted by:				AMENDMENT OR MODIFICATION OF CURRENT AIRWORTHINESS CERTIFICATE																																																																																																																																																														
DATE		DISTRICT OFFICE		DESIGNEE'S SIGNATURE AND NO.																																																																																																																																																														
12/6/07		SW-MIDO-43		4																																																																																																																																																														
				FAA INSPECTOR'S SIGNATURE  James M. Fote																																																																																																																																																														



<b>VI. PRODUCTION FLIGHT TESTING</b>	A. MANUFACTURER				
	NAME		ADDRESS		
	B. PRODUCTION BASIS <i>(Check applicable item)</i>				
	<input type="checkbox"/> PRODUCTION CERTIFICATE <i>(Give production certificate number)</i>		<input type="checkbox"/> TYPE CERTIFICATE ONLY		
	<input type="checkbox"/> APPROVED PRODUCTION INSPECTION SYSTEM				
	C. GIVE QUANTITY OF CERTIFICATES REQUIRED FOR OPERATING NEEDS				
DATE OF APPLICATION		NAME AND TITLE <i>(Print or Type)</i>	SIGNATURE		
<b>VII. SPECIAL FLIGHT PERMIT PURPOSES OTHER THAN PRODUCTION FLIGHT TEST</b>	A. DESCRIPTION OF AIRCRAFT				
	REGISTERED OWNER		ADDRESS		
	BUILDER <i>(Make)</i>		MODEL		
	SERIAL NUMBER		REGISTRATION MARK		
	B. DESCRIPTION OF FLIGHT				
	FROM		TO		
	CUSTOMER DEMONSTRATION FLIGHTS <input type="checkbox"/> <i>(Check if applicable)</i>				
	VIA		DEPARTURE DATE	DURATION	
	C. CREW REQUIRED TO OPERATE THE AIRCRAFT AND ITS EQUIPMENT				
		PILOT	CO-PILOT	FLIGHT ENGINEER	OTHER <i>(Specify)</i>
	D. THE AIRCRAFT DOES NOT MEET THE APPLICABLE AIRWORTHINESS REQUIREMENTS AS FOLLOWS:				
	E. THE FOLLOWING RESTRICTIONS ARE CONSIDERED NECESSARY FOR SAFE OPERATION: <i>(Use attachment if necessary)</i>				
F. CERTIFICATION - I hereby certify that I am the registered owner (or his agent) of the aircraft described above; that the aircraft is registered with the Federal Aviation Administration in accordance with Title 49 of the United States Code 44101 <u>et seq.</u> , and applicable Federal Aviation Regulations; and that the aircraft has been inspected and is safe for the flight described.					
DATE		NAME AND TITLE <i>(Print or Type)</i>	SIGNATURE		
<b>VIII. AIRWORTHINESS DOCUMENTATION (FAA/DESIGNEE use only)</b>	A. Operating Limitations and Markings in Compliance with 14 CFR Section 91.9, as applicable.		G. Statement of Conformity, FAA Form 8130-9 <i>(Attach when required)</i>		
	<input checked="" type="checkbox"/>	B. Current Operating Limitations Attached	H. Foreign Airworthiness Certification for Import Aircraft <i>(Attach when required)</i>		
	<input checked="" type="checkbox"/>	C. Data, Drawings, Photographs, etc. <i>(Attach when required)</i>	I. Previous Airworthiness Certificate Issued in Accordance with 14 CFR Section _____ CAR _____ <i>(Original Attached)</i>		
		D. Current Weight and Balance information Available in Aircraft	J. Current Airworthiness Certificate Issued in Accordance with 14 CFR Section 21.191(e) (c) & (f) <i>(Copy Attached)</i>		
		E. Major Repair and Alteration, FAA Form 337 <i>(Attach when required)</i>	K. Light-Sport Aircraft Statement of Compliance, FAA Form 8130-15 <i>(Attach when required)</i>		
	<input checked="" type="checkbox"/>	F. This inspection Recorded in Aircraft Records			



UNITED STATES OF AMERICA  
 DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION  
**SPECIAL AIRWORTHINESS CERTIFICATE**

*copy*

<b>A</b>	CATEGORY/DESIGNATION <b>Experimental (Unmanned Aircraft)</b>	
	PURPOSE <b>R &amp; D or Crew Training or Market Survey</b>	
<b>B</b>	MANUFACTURER	NAME <b>N/A</b>
		ADDRESS <b>N/A</b>
<b>C</b>	FLIGHT	FROM <b>N/A</b>
		TO <b>N/A</b>
<b>D</b>	N- <b>3047W</b>	SERIAL NO. <b>07010320</b>
	BUILDER <b>Honeywell International</b>	MODEL <b>gMAV</b>
	DATE OF ISSUANCE <b>12/6/2007</b>	EXPIRY <b>12/6/2008</b>
	OPERATING LIMITATIONS DATED <b>12/31/2007</b> ARE PART OF THIS CERTIFICATE	
<b>E</b>	SIGNATURE OF FAA REPRESENTATIVE <i>James M. Fote</i> <b>James M. Fote</b>	DESIGNATION OR OFFICE NO. <b>SW-MIDO-43</b>

Any alteration, reproduction or misuse of this certificate may be punishable by a fine not exceeding \$1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE TITLE 14, CODE OF FEDERAL REGULATIONS (CFR).

FAA Form 8130-7 (07/04) SEE REVERSE SIDE NSN: 0052-00-693-4000

<b>A</b>	This airworthiness certificate is issued under the authority of Public Law 104-6, 49 United States Code (USC) 44704 and Title 14 Code of Federal Regulations (CFR).
<b>B</b>	The airworthiness certificate authorizes the manufacturer named on the reverse side to conduct production flight tests, and only production flight tests, of aircraft registered in his name. No person may conduct production flight tests under this certificate: (1) Carrying persons or property for compensation or hire; and/or (2) Carrying persons not essential to the purpose of the flight.
<b>C</b>	This airworthiness certificate authorizes the flight specified on the reverse side for the purpose shown in Block A.
<b>D</b>	This airworthiness certificate certifies that as of the date of issuance, the aircraft to which issued has been inspected and found to meet the requirements of the applicable CFR. The aircraft does not meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention On International Civil Aviation. No person may operate the aircraft described on the reverse side: (1) except in accordance with the applicable CFR and in accordance with conditions and limitations which may be prescribed by the Administrator as part of this certificate; (2) over any foreign country without the special permission of that country.
<b>E</b>	Unless sooner surrendered, suspended, or revoked, this airworthiness certificate is effective for the duration and under the conditions prescribed in 14 CFR, Part 21, Section 21.181 or 21.217.



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

NOV 30 2007

Mr. Vaughn Fulton, PMP  
Honeywell Unmanned Aerial Systems Program Manager  
Honeywell International  
9201 San Mateo Boulevard NE  
Albuquerque, NM 87113-2227

Dear Mr. Fulton:

Thank you for your September 4, 2007, letter requesting approval for a different marking procedure for Honeywell's Micro Air Vehicle (MAV) unmanned aircraft system. Title 14 Code of Federal Regulations § 45.22(d) permits persons to apply to the Administrator for a different marking procedure if it is impossible to mark an aircraft in accordance with §§ 45.21 and 45.23 through 45.33.

The marking information depicted in the attachments to your letter has been reviewed. You are hereby authorized to identify the MAV aircraft with the following markings:

- Nationality and Registration markings that are as large as possible, but not less than 1 inch tall, on the rear of the ducted fan;
- The word "EXPERIMENTAL" in letters 1 inch tall and displayed below caution placard on the rear of the ducted fan.

This marking procedure applies to all aircraft of the same configuration for which future certification may be requested.

The following must be kept with the airworthiness certificate for each aircraft:

- A copy of your original request letter,
- A copy of the model-specific diagrams that were submitted with that letter, showing the size and location of the Nationality and Registration markings, and
- A copy of this response letter.

If there are any questions, please contact Mr. David Higginbotham at telephone 202-267-7525.

Sincerely,

Frank P. Paskiewicz  
Manager, Production and Airworthiness  
Division, AIR-200





U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

12/06/2007

San Antonio Manufacturing Inspection District Office,  
MIDO-43  
10100 Reunion Pl.  
SUITE 650  
San Antonio, TX 78216

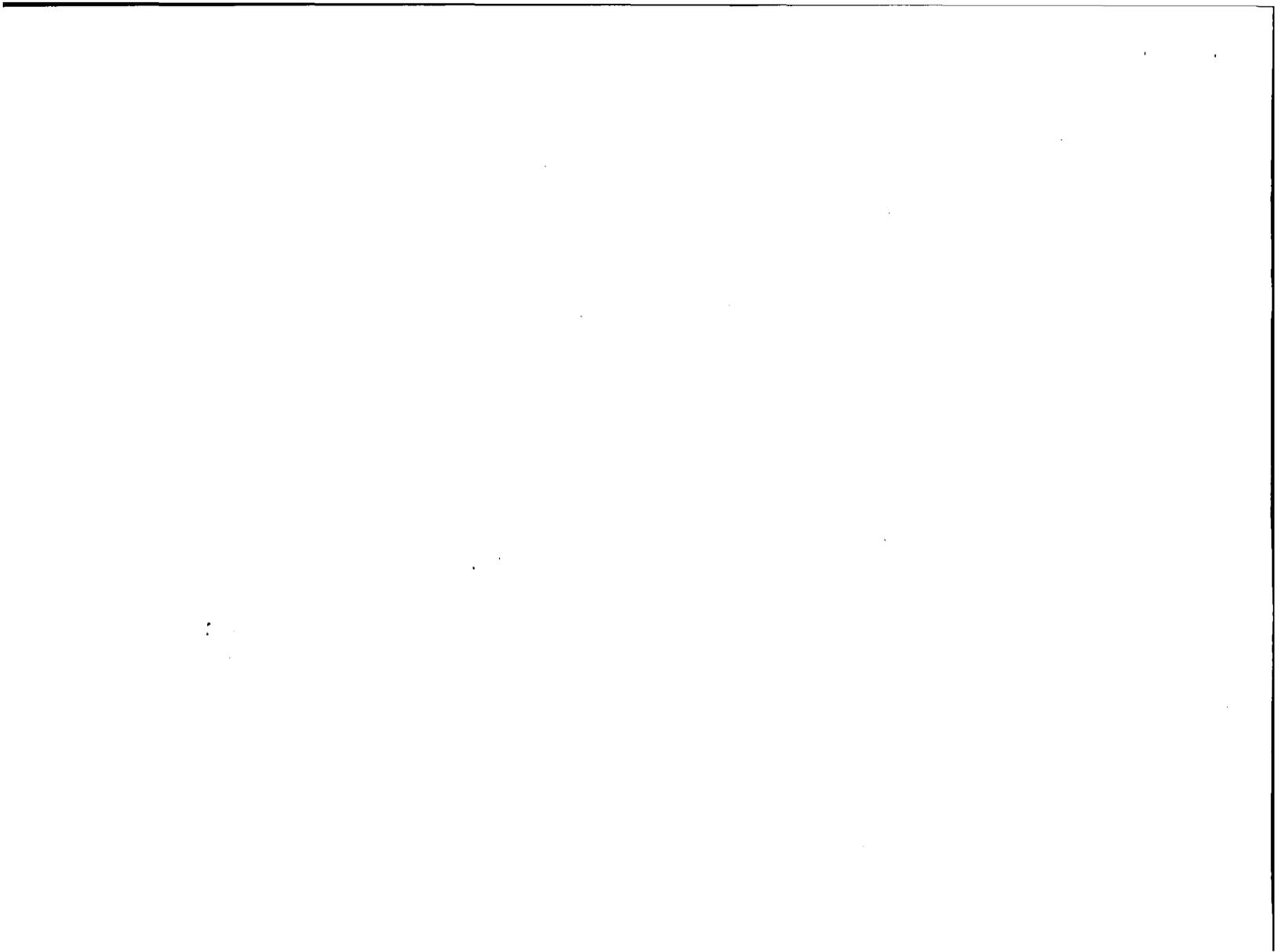
**EXPERIMENTAL - OPERATING LIMITATIONS**  
**RESEARCH AND DEVELOPMENT, MARKET SURVEY AND CREW TRAINING**

<b>REGISTERED OWNER NAME:</b> HONEYWELL INTERNATIONAL	<b>AIRCRAFT BUILDER:</b> HONEYWELL INTERNATIONAL
<b>REGISTERED OWNER ADDRESS:</b> 9201 SAN MATEO BLVD, NE ALBUQUERQUE, NM 87113-2227	<b>YEAR MANUFACTURED:</b> 2007
<b>AIRCRAFT DESCRIPTION:</b> MICRO UNMANNED AIR VEHICLE gMAV MODEL	<b>AIRCRAFT SERIAL NUMBER:</b> 07010320
<b>AIRCRAFT REGISTRATION:</b> N3047W	<b>AIRCRAFT MODEL DESIGNATION:</b> MICRO UNMANNED AIR VEHICLE
	<b>ENGINE MODEL:</b> 3W56iB2-CS
	<b>PROPELLER MODEL:</b> N/A AAI# 38573-4190-1 P/N for FAN

**The following conditions and limitations apply to all Honeywell Micro Unmanned Air Vehicle, gMAV Model flight operations while operating in the National Airspace System (NAS):**

**1. GENERAL**

a. For the purposes of the **Special Airworthiness Certificate and Operating Limitations**, the Micro Unmanned Air Vehicle, gMAV Model (gMAV) Unmanned Aircraft System (UAS), owned and operated by Honeywell, is considered to be an integrated system. The integrated system is comprised of the gMAV Model aircraft, S/N: 07010320, unmanned aircraft (UA) control station(s) (fixed or mobile), telemetry, navigation and communications equipment. This equipment includes ground, air and space-based equipment that is used for control of the gMAV Model UA.



12/06/07

b. Unless otherwise specified in this document, the Pilot-in-Command (PIC) and Honeywell shall comply with all applicable sections and parts of 14 CFR including, but not limited to, parts 61 and 91. Alternative methods of compliance with specific regulations shall be annotated in this document as required.

c. No person may operate this UAS for other than the purpose of Research and Development (R&D) or Crew Training or Market Survey to accomplish the flight operation outlined in Honeywell Program Letter dated 12/06/07, which describes compliance with §21.193(d), and has been made available to the pilot in command of the UAS. These operating limitations are a part of Form 8130-7, and must be made available to the pilot in command at all times. In addition, this UAS must be operated in accordance with applicable air traffic and general operating rules of part 91, and all additional limitations herein prescribed under the provisions of §91.319(e).

d. The PIC must determine that the UAS is in a condition for safe operation, and in a configuration appropriate for the intended purpose of the flight.

e. When changing between operating purposes of a multiple-purpose certificate, the operator must determine that the aircraft is in a condition for safe operation and appropriate for the purpose intended. A record entry will be made by the PIC to document that finding in the aircraft logbook.

f. No person may operate this UA to carry property for compensation or hire.

g. This UA must be marked with its U.S. Registration number N3047W in accordance with 14 CFR part 45, or an alternative procedure approved by the Federal Aviation Administration.

h. This UA must display the word "EXPERIMENTAL" in accordance with §45.23(b) or an alternative procedure approved by the Federal Aviation Administration.

i. Prior to conducting the initial gMAV flight operations, Honeywell must forward a copy of the gMAV Special Airworthiness Certificate, Operating Limitations and Program Letter to Mr. Roger Trevino, System Support Specialist, FAA Central Service Area, System Support Group, AJO2-C2, email: [roger.trevino@faa.gov](mailto:roger.trevino@faa.gov), fax: 817-222-5547.

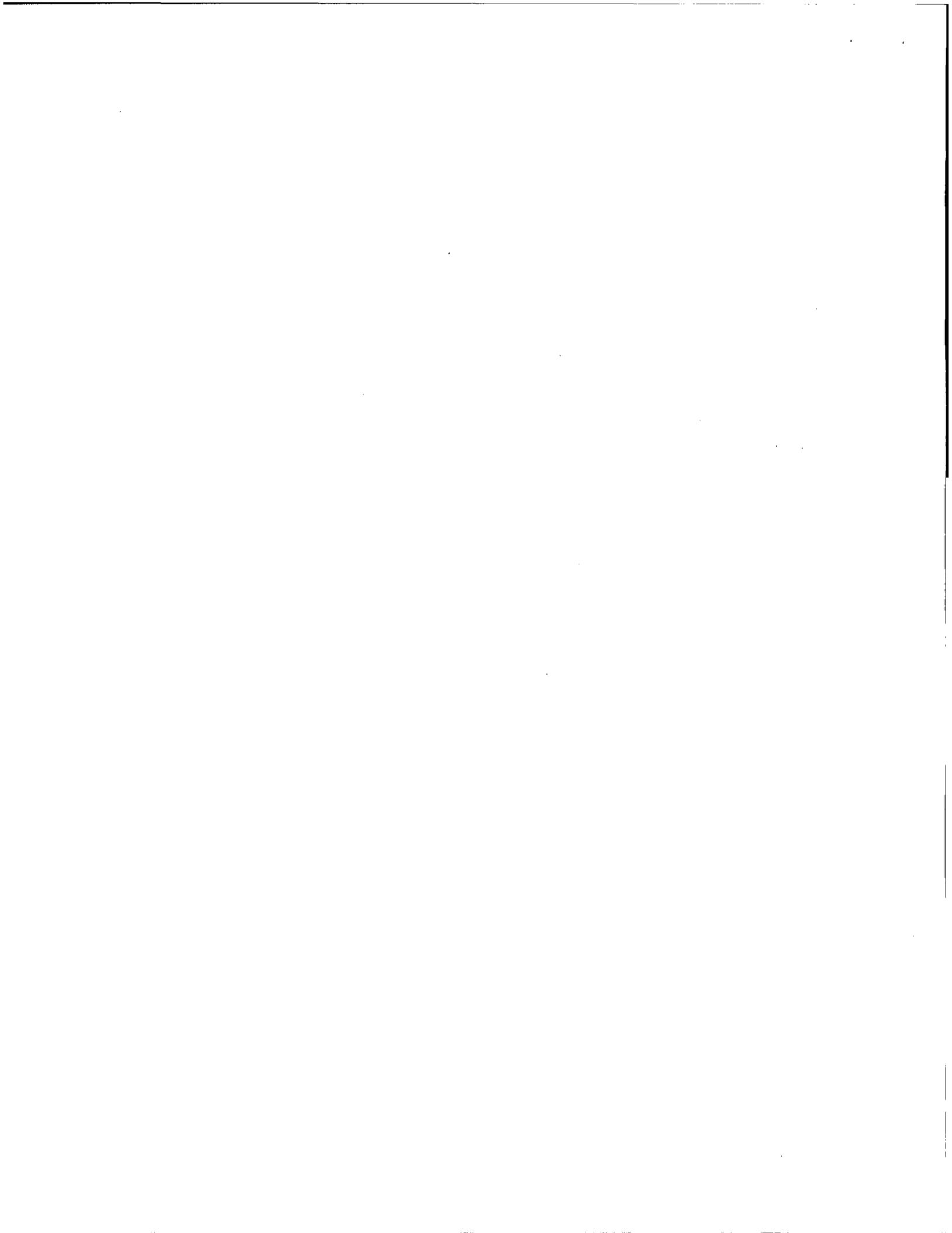
j. Section 47.45 requires that the FAA Aircraft Registry must be notified within 30 days of any change in the aircraft registrant's address. Such notification is to be made by submitting Form 8050-1 to AFS-750 in Oklahoma City, Oklahoma.

## **2. PROGRAM LETTER**

The Honeywell Program Letter, dated 12/06/07 was used as a basis for determining the operating limitations prescribed in this document. All flight operations must be conducted in accordance with the provisions contained in these operating limitations.

## **3. INITIAL FLIGHT TESTING**

Flight operations shall be conducted within visual line of sight of the pilot/observer. Initial flight-testing shall be completed when the pilot in command can certify compliance with § 91.319(b).



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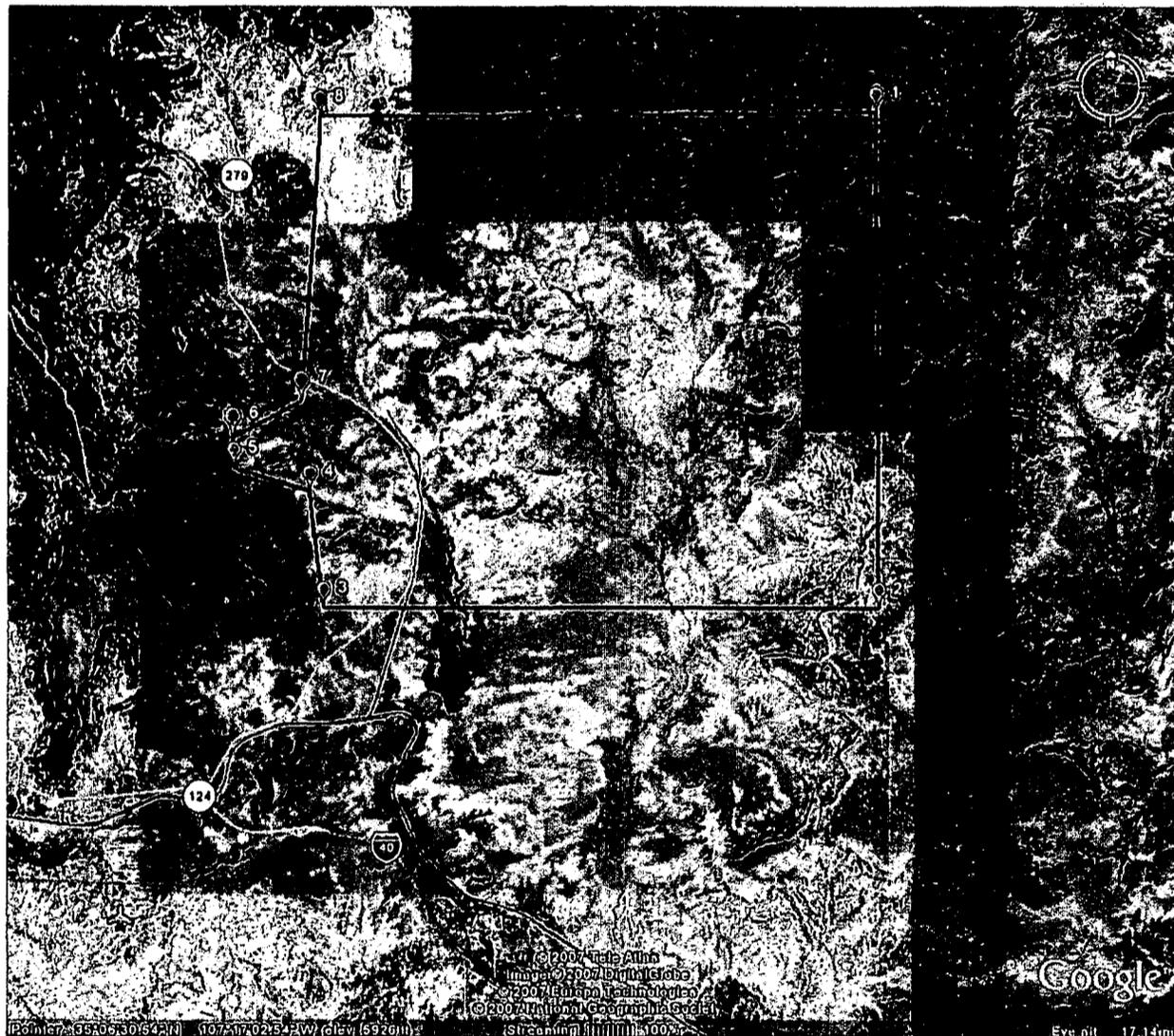
Compliance with § 91.319(b) must be recorded in the aircraft records with the following, or a similarly worded, statement:

**“I certify that the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous operating characteristics or design features, and is safe for operation.”**

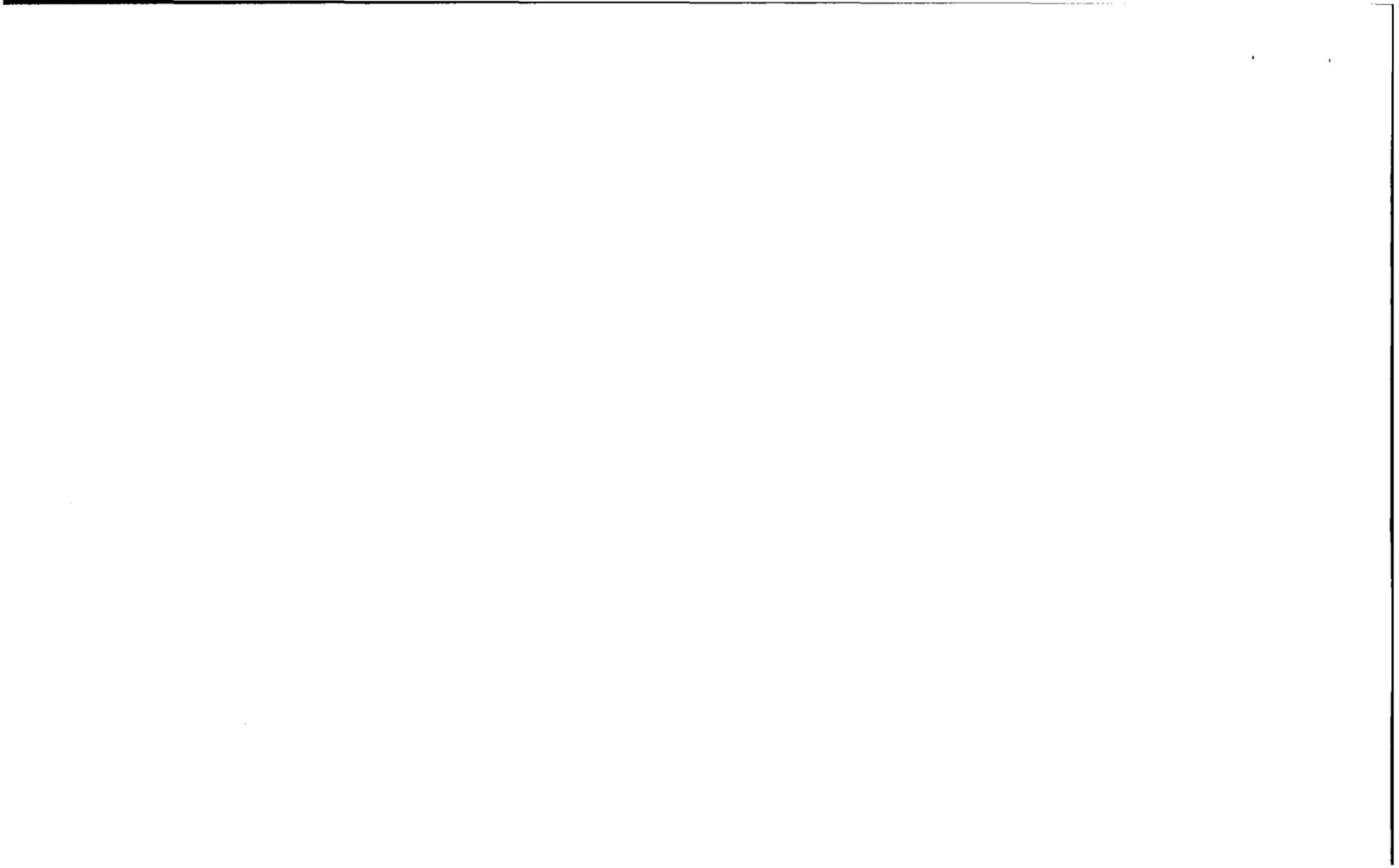
#### **4. AUTHORIZED FLIGHT TEST OPERATIONS AREA**

a. The containment area for flight test will be on the property of the Laguna Pueblo, New Mexico. This area is approximately 60 miles from the Honeywell facility. It is a remote, desert terrain area with restricted access controlled by the government of the Laguna Pueblo. The attached map shows the layout and the operational area.

Population areas near the site are (1) State Hwy 279 which runs through the southwest section, (2) a small housing community approximately 0.5 miles to the northwest, and (3) Interstate 40 approximately 5.5 miles to the south.



Boundary for Flight Operations



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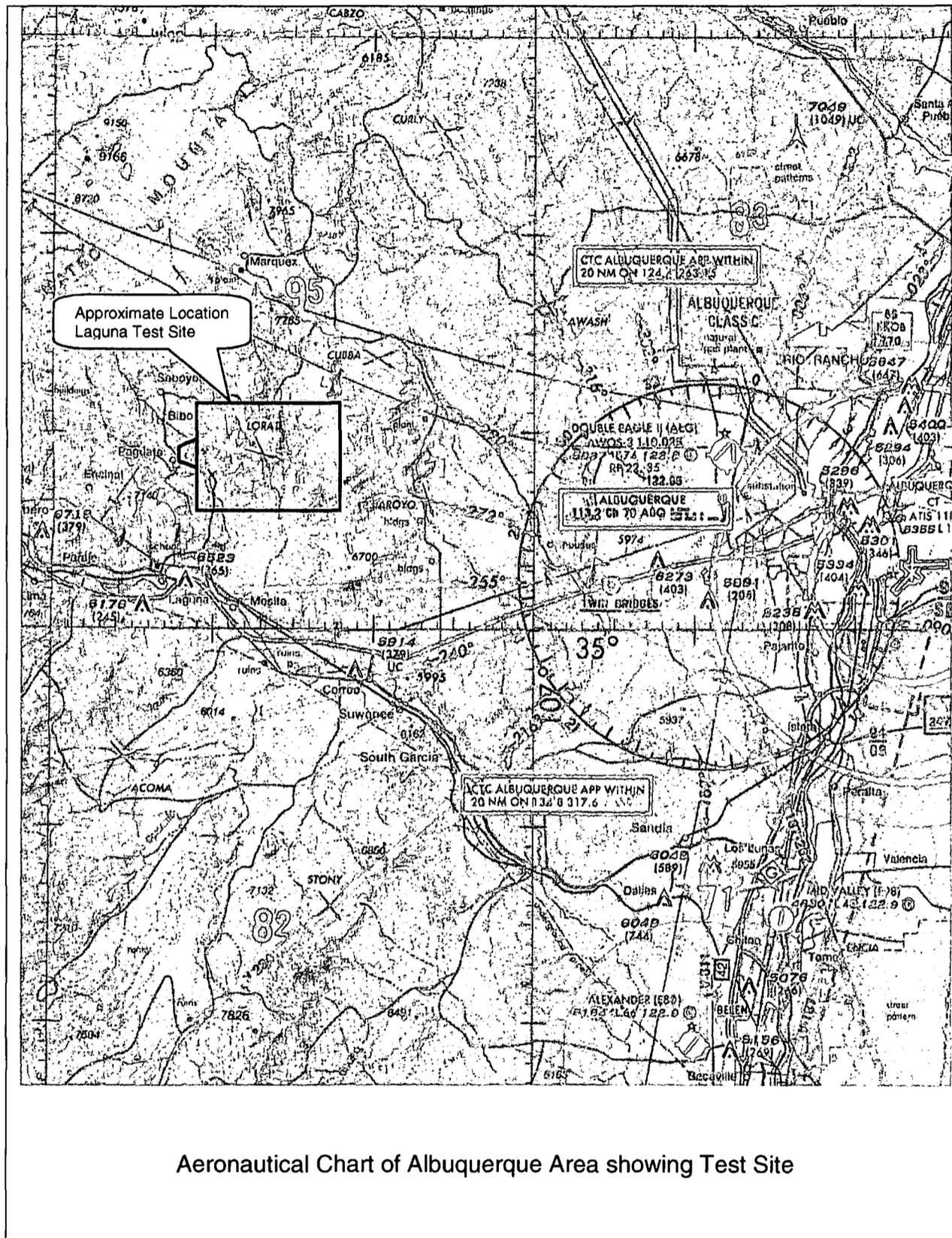
Boundary for Flight Operations

b. The containment area is in Class G airspace. **The aircraft shall not be flown above an altitude of 400 ft AGL.** The corner points of the area are shown below:

**Laguna Flight Test Area**

<b>WPT</b>	<b>Latitude</b>	<b>Longitude</b>	<b>(Leg) Distance</b>
1	35°12'5.17"N	107°12'27.57"W	(1-2) ~7.732
2	35° 5'21.43"N	107°12'23.70"W	(2-3) ~8.710
3	35° 5'21.25"N	107°21'37.06"W	(3-4) ~1.833
4	35° 6'56.33"N	107°21'50.36"W	(4-5) ~1.230
5	35° 7'15.29"N	107°23'5.06"W	(5-6) ~0.466
6	35° 7'39.59"N	107°23'6.48"W	(6-7) ~1.207
7	35° 8'9.70"N	107°21'59.07"W	(7-8) ~4.440
8	35°12'1.02"N	107°21'39.65"W	(8-1) ~8.678





Aeronautical Chart of Albuquerque Area showing Test Site

c. The PIC shall ensure that all UA flight operations remain within the lateral and vertical boundaries of the flight test operations area or any restricted area approved by the using

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agency. Furthermore, the PIC shall take into account all factors that may affect the capability of remaining within the containment areas. This includes, but is not limited to, considerations for wind and gross weight.

**d. Incident / Accident Reporting.** Any incident / accident and any flight operation that transgresses the lateral or vertical boundaries of the Containment Area or any restricted airspace shall be reported to the FAA, as soon as practicable, but always within 24 hours. The point of contact to report this information to the FAA is the Manager of the Unmanned Aircraft Program Office, AIR-160, Mr. Doug Davis. Mr. Davis can be reached by phone at 202-385-4636, fax at 202-385-4651, or by e-mail at [Kenneth.d.davis@faa.gov](mailto:Kenneth.d.davis@faa.gov). Accidents shall be reported to the National Transportation Safety Board per instructions contained on the NTSB website: [www.nts.gov](http://www.nts.gov). Further flight operations shall not be conducted until the incident / accident is reviewed by ATO, AFS, and AIR-160, and authorization to resume operations is received.

## **5. UA PILOT AND OBSERVER**

**a.** All flight operations conducted in the flight test operations area shall have an observer to perform traffic avoidance and visual observation to fulfill the "see and avoid" requirement of §91.113.

**b.** The UA PIC shall hold, at a minimum, an FAA Private Pilot certificate and have it in his/her possession.

**c.** All observers shall:

- 1) Hold at a minimum, an FAA Private Pilot certificate, or
- 2) Successfully complete Honeywell-specific observer training acceptable to the FAA.

**d.** The UA PIC shall maintain currency in manned aircraft per 14 CFR §61.57.

**e.** All UA pilots shall maintain currency in unmanned aircraft in accordance with Honeywell company procedures.

**f.** The UA PIC shall have a Flight Review in manned aircraft every 24 calendar months per 14 CFR §61.56.

**g.** All UA pilots shall have a Flight Review in unmanned aircraft every 24 calendar months in accordance with Honeywell company procedures.

**h.** The UA PIC shall have operational override capability over any Supplemental Pilot, regardless of position.

**i.** The Supplemental Pilot need not be a certificated pilot. If the Supplemental Pilot is not a certificated pilot, the Supplemental Pilot must have successfully completed a recognized Private Pilot ground school or successfully completed the private pilot written test within 90 days of the issuance of these limitations.

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j. Pilots and observers shall have successfully completed applicable manufacturer training for high level systems and operational understanding of the UAS.

k. Pilots and observers must have in their possession a valid third class (or higher) airman medical certificate that has been issued under 14 CFR part 67.

l. A PIC must be designated at all times and be responsible for the safety of the UAS and persons and property along the UA flight path. This includes, but is not limited to, collision avoidance and the safety of persons and property in the air and on the ground. The PIC shall avoid densely populated areas (14 CFR § 91.319) and exercise increased vigilance when operating within published airway boundaries.

m. UA pilots and observers shall perform crew duties for only one UA at a time.

n. All observers must be thoroughly trained, familiar with, and possess, operational experience with the equipment being utilized for observation and detection of other aircraft for collision avoidance purposes.

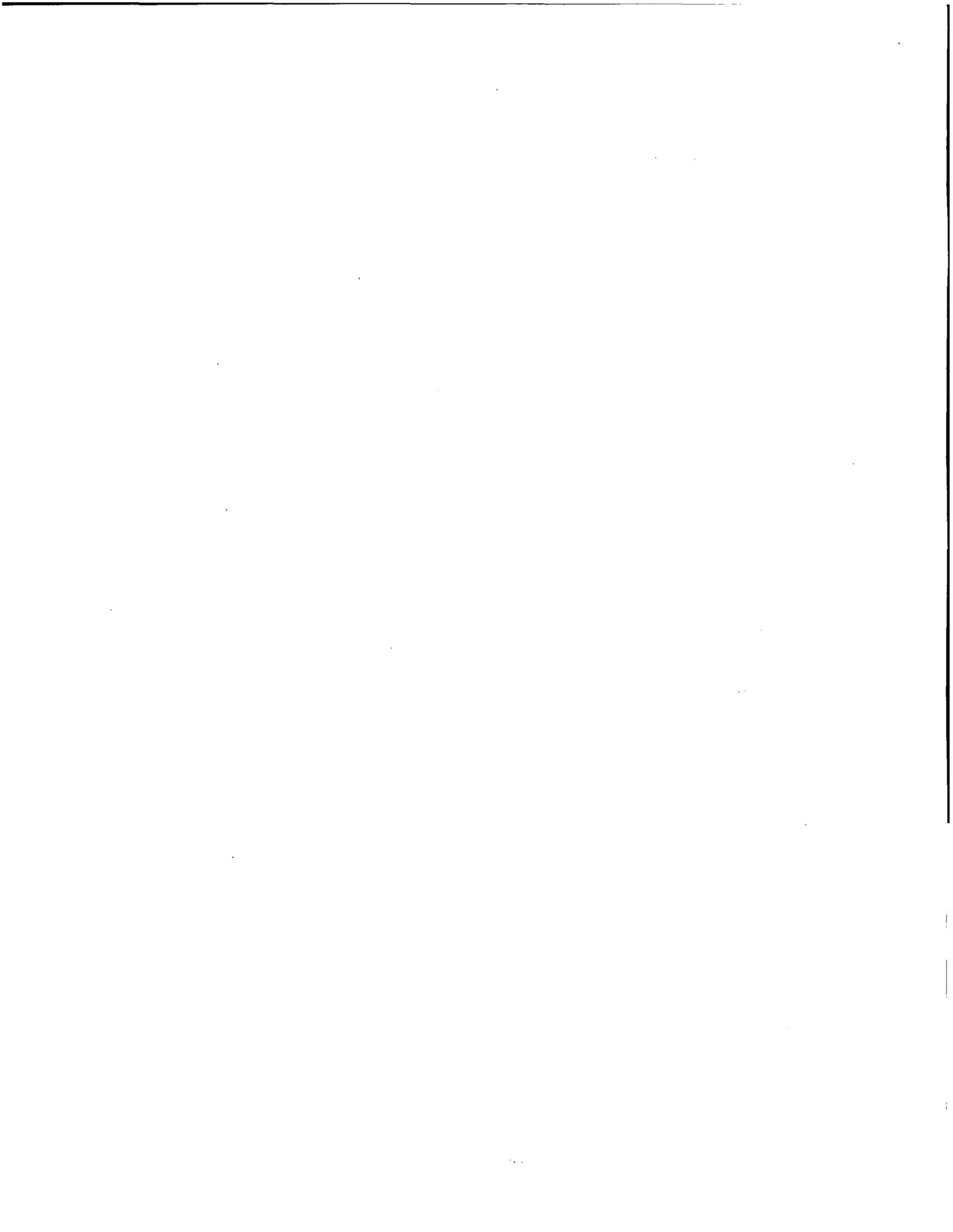
o. Visual Observer Responsibilities: The task of the observer is to provide the pilot of the UA with instructions to maneuver the UA clear of any potential collision with other traffic. Visual observer duties require continuous visual contact with the UA at all times in such a manner as to be able to discern UA attitude and trajectory. At no time shall the visual observer permit the UA to operate beyond line-of-sight necessary to ensure that maneuvering information can be reliably determined. At no time shall visual observers conduct their duties more than **2000 ft** laterally and 400 ft vertically from the UA. Observers must maintain continuous visual contact with the UA. The small size of this particular UA may not allow for adequate observation at the 2500 ft limit. It should be understood that this limit is the maximum range allowed and that a practical distance may be something less, with the determination of such at the discretion of the applicant. Therefore, it will remain the responsibility of the applicant to insure the safety of flight and adequate visual range coverage to mitigate any potential collisions.

## **6. COMMUNICATIONS**

a. Honeywell shall contact Albuquerque Air Route Traffic Control Center (ARTCC) at 505-856-4571 in the event of a fly-away that breaches the containment area.

b. A distant (D) Notice to Airmen (NOTAM) shall be issued when UAS operations are being conducted. Honeywell shall contact the Automated Flight Service Station (FSS) no less than 48 hours prior to the operation and provide:

- 1) Name, address, and telephone number of the person giving notice.
- 2) Nature of the activity.
- 3) Date, time, and duration of the activity.
- 4) Size of the affected area in nautical mile radius and affected altitudes.
- 5) Location of center of affected area.
- 6) Location of center of affected area in relation to nearest VOR/DME or VORTAC.



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c. The PIC and observer(s) must maintain two-way communications with each other during all operations.

d. If communications cannot be maintained between the PIC and observer(s), the UA will expeditiously return to its base of operations while remaining within the flight operations area, and conclude the flight operation.

e. Radio frequency spectrum used for operation and control of the UA must be approved by the FCC or other appropriate government oversight agency prior to operations being conducted.

## **7. FLIGHT CONDITIONS**

a. All flight operations must be conducted under visual flight rules (VFR) in visual meteorological conditions (VMC), including cloud clearance minimums as specified in 14 CFR § 91.155. Flight operations under instrument flight rules (IFR) or in instrument meteorological conditions (IMC) are not authorized. Flight operations shall not be conducted under the Special VFR criteria specified in 14 CFR § 91.157, nor shall flight operations be conducted when flight visibility is less than three statute miles.

b. All flight operations within the flight operations area as specified in Section 4b shall be conducted during daylight hours only.

c. The UA is prohibited from aerobatic flight, that is, an intentional maneuver involving an abrupt change in the UA's attitude, an abnormal acceleration, or other flight action not necessary for normal flight (§91.303).

d. Flight operations must not involve carrying hazardous material or the dropping of any objects or external stores.

e. The UA shall be equipped with strobe/anti-collision lights and shall be illuminated at all times.

## **8. FLIGHT TERMINATION & LOST LINK PROCEDURES**

a. Flight operations must be discontinued at any point when the approved flight operations area is breached and/or the control of the UA is questionable. If it is determined that the UA is still under control of the PIC, the UA shall return to base (RTB).

b. In the event of lost link, the UA must provide a means of automatic recovery that ensures airborne operations are predictable and that the UA remains within the flight operations area.

## **9. MAINTENANCE**

a. This UAS must not be operated unless it is inspected and maintained in accordance with the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100, dated 12/06/07. Each inspection must be recorded in the UAS maintenance records.



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b. No person may operate this UAS unless within the preceding 12 calendar months it has had a condition inspection performed in accordance with FAA-accepted, Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100, dated 12/06/07, and been found to be in a condition for safe operation. This inspection will be recorded in the UAS maintenance records.

c. Only those individuals authorized by Honeywell, and acceptable to the FAA, may perform inspections required by these operating limitations.

d. Inspections of the UAS must be recorded in the UAS maintenance records showing the following, or a similarly worded, statement: "I certify that this UAS has been inspected on [insert date] in accordance with the scope and detail of the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100 dated 12/06/07, and found to be in a condition for safe operation." The entry will include the UA's total time-in-service, the name, signature, type of certificate and certificate number of the person performing the inspection.

e. UAS instruments and equipment installed must be inspected and maintained in accordance with the requirements of the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100 dated 12/06/07. Any maintenance or inspection of this equipment must be recorded in the UAS maintenance records.

## **10. EQUIPAGE**

- a. Reserved.

## **11. INFORMATION REPORTING**

Honeywell shall provide the following information to [donald.e.grampp@faa.gov](mailto:donald.e.grampp@faa.gov) on a monthly basis. A copy of the report shall be provided to AIR-200.

- a. Number of flights conducted under this certificate.
- b. Pilot duty time per flight.
- c. Unusual equipment malfunctions (hardware or software), if any.
- d. Deviations from ATC instructions.
- e. Unintended entry into lost link flight mode that results in a course change.

## **12. REVISIONS**

a. The experimental certificate, Honeywell's FAA-accepted program letter, and operating limitations cannot be reissued, renewed, or revised without application being made to the San Antonio MIDO, and coordinated with the Albuquerque Flight Standards District Office, and the Production and Airworthiness Division, AIR-200. AIR-200 will be responsible for headquarters internal coordination with the Aircraft Certification Service, Flight Standards Service, Air Traffic, Office of Chief Council, and Office of Rulemaking.

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12/06/07

**b.** No Certificate of Authorization or Waiver may be issued in association with this Experimental Certificate unless coordinated with the San Antonio MIDO and the Production and Airworthiness Division, AIR-200.

**c.** The provisions and limitations annotated in this operational approval may be amended or cancelled at any time as deemed necessary by the FAA.

**d.** All revisions to the Honeywell Maintenance Manual for Small Unmanned Aerial Systems (SUAS) Micro Air Vehicle (MAV) MMTM8532075-100 dated 12/06/07, must be reviewed and accepted by the Albuquerque Flight Standards District Office.

### **13. UA MODIFICATIONS**

**a.** All software and system changes will be documented as part of the normal maintenance procedures and be available for inspection. All software and system changes shall be inspected and approved per the Honeywell Quality Management System. All software changes to the aircraft and GCS are categorized as major modifications, and shall be provided in summary form at the time they are incorporated.

**b.** All major modifications, whether performed under the experimental certificate, COA, or other authorizations, that could potentially effect the safe operation of the system, shall be documented and shall be provided to the FAA prior to operating the aircraft under this certificate.

**c.** All information requested shall be provided to AIR-200.

End of Limitations.

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12/06/07



12/06/07  
Issued at Albuquerque, NM

James Fote  
Aviation Safety Inspector (Mfg)  
San Antonio Manufacturing Inspection District  
Office, MIDO-43  
10100 Reunion Place  
Suite 650  
San Antonio, Texas 78216

I certify that I have read and understand the operating limitations and conditions that are a part of the Special Airworthiness Certificate, FAA Form 8130-7 issued on 12/06/07, for the purpose of Research and Development, Crew Training, or Market Survey.

This Airworthiness Certificate is issued for Honeywell International, Micro Unmanned Air Vehicle, gMAV Model, serial number 07010320, registration number N3047W. This certification expires on 12/5/08.

Note: If the stated limitations or conditions cannot be complied with, Honeywell International Micro Unmanned Air Vehicle, gMAV Model flight operations shall be discontinued.



Applicant (signature)  
Name: Vaughn Fulton  
Title: Honeywell Unmanned Aerial Systems Program Manager  
Company: Honeywell International

Date: 12/06/07

