SUBJ/NPS INSTANTEYE (IEMK2) UAS CAT 3 IFC FOR LAND AND SHIPBOARD OPERATIONS IN RESTRICTED AND WARNING AREAS AND INTL AIRSPACE

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NARR/REF A IS INTERIM FLIGHT CLEARANCE REQUEST.
REF B IS PREVIOUS INTERIM FLIGHT CLEARANCE.
REF C IS PSI INSTANTEYE MK-2 SUAS TRAINING MANUAL REV12.
REF D IS PSI INSTANTEYE SUAS BROCHURE.
REF E IS PSI GEN2 AND GEN3 CONFIGURATION DESCRIPTION.
REF F IS VAISALA RADIOSONDE RS92-SGP BROCHURE.
REF G IS NPS INSTANTEYE AND PAYLOAD OVERVIEW.
REF H IS NPS RANGE SAFETY QUESTIONNAIRE FOR INTERNATIONAL AIRSPACE OPERATIONS.
REF I IS NPS LITHIUM POLYMER BATTERY SOP VER 1.4A.
REF J IS NOSSA CERTIFICATION FOR LITHIUM BATTERIES N841/1039.
REF K IS INSTANTEYE SOP FOR MARINE OPERATIONS.
REF L IS NATOPS GENERAL FLIGHT AND OPERATING INSTRUCTIONS.
REF M IS DOD INSTRUCTION FOR USE OF INTERNATIONAL AIRSPACE BY U.S. MILITARY AIRCRAFT AND FOR MISSILE AND PROJECTILE FIRINGS.
REF N IS OPAV POLICY FOR OPERATIONAL RISK MANAGEMENT.
REF O IS NAVAL AVIATION SAFETY MANAGEMENT SYSTEM.
REF P IS NAVAL AVIATION MAINTENANCE PROGRAM.
REF Q IS NPS HIGHER PROBABILITY OF LOSS STATEMENT.

REF R IS AIRWORTHINESS AND CYBERSECURITY SAFETY POLICIES FOR AIR VEHICLES AND AIRCRAFT SYSTEMS.

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GENTEXT/REMARKS/1. IRT REF A, NAVAIR UAS CATEGORY 3 INTERIM FLIGHT CLEARANCE (IFC) IS GRANTED FOR NAVAL POST GRADUATE SCHOOL INSTANTEYE UAS FOR LAND AND SHIPBOARD OPERATIONS IN RESTRICTED AND WARNING AREAS AND INTERNATIONAL AIRSPACE. REF B IS CANCELLED AND SUPERSEDED WITH THE FOLLOWING CHANGES:
   A. UPDATED IFC EXPIRATION DATE.
   B. ALL OTHER CHANGES ARE ADMINISTRATIVE.

FLIGHT OPERATIONS IN RESTRICTED AND WARNING AREAS AND INTERNATIONAL AIRSPACE ARE SUBJECT TO THE FOLLOWING CONFIGURATION, LIMITS, PROCEDURES, WARNINGS, CAUTIONS AND NOTES.

2. CONFIGURATION: IAW REFS C THROUGH G AND AS FOLLOWS:
   A. AIR VEHICLE: GEN2 OR GEN3 IAW REFS D THROUGH F, H AND AS FOLLOWS:
      (1) ELECTRICAL POWER:
          (A) LITHIUM BATTERIES: IAW REFS I AND J.
      (2) DATALINKS: IAW REFS C AND G.
      (3) SOFTWARE: PHYSICAL SCIENCES INC SOFTWARE VERSION 3.2841.
      (4) PAYLOAD (WITH/WITHOUT): IAW REF F, G AND AS FOLLOWS:
          (A) RADIOSONDE RS92-SGP.
   B. GROUND CONTROL STATION: IAW REF C.
      (1) PHYSICAL SCIENCES INC SOFTWARE VERSION 3.2841.
   C. SHIPBOARD INTERFACE: IAW REF K.

   A. MAXIMUM ALTITUDE: 300M AGL.
   B. WEATHER: IAW REFS C, D, H, K, AND L AND AS FOLLOWS:
      (1) VISUAL FLIGHT RULES IN DAY VISUAL METEOROLOGICAL CONDITIONS (VMC) ONLY.
      (2) FLIGHT OPERATIONS WITHIN 20 NM OF THUNDERSTORMS OR OBSERVED LIGHTNING: PROHIBITED.
      (3) FLIGHT OPERATIONS IN FORECASTED OR OBSERVED ICING CONDITIONS: PROHIBITED.
      (4) FLIGHT OPERATIONS IN VISIBLE MOISTURE: PROHIBITED.
   C. WIND LIMITS (LAUNCH, RECOVERY, AND FLIGHT):
      (1) GUSTS ARE CONSIDERED ANY WIND VARIATIONS ABOVE THE MEASURED SUSTAINED VALUE.
      (2) MAXIMUM WINDS, INCLUDING GUSTS (KTS): 25.
         (A) FOR SHIPBOARD OPERATIONS RELATIVE WIND (VECTOR SUM OF SHIP SPEED AND TRUE WIND SPEED) SHALL BE USED.
      (3) MAXIMUM GUSTS (KTS): 5.
   D. AIRSPACE OPERATIONS:
      (1) U.S. NATIONAL AIRSPACE:
         (A) FLIGHT OPERATIONS IN RESTRICTED OR WARNING AREAS IN
U.S. NATIONAL AIRSPACE SHALL BE IAW USING AGENCY PROCEDURES, REF L, AND AS FOLLOWS:

1) FLIGHT OPERATIONS SHALL BE OVER WATER OR OVER SPARSELY POPULATED OR UNPOPULATED AREAS ONLY.

2) INTENTIONAL FLIGHT OVER PERSONNEL, CONGESTED AREAS, OPEN AIR ASSEMBLIES OF PEOPLE, AND HEAVILY TRAFFICKED ROADS: PROHIBITED.

3) THE AIR VEHICLE SHALL BE OPERATED WITHIN VISUAL LINE OF SIGHT OF THE AIR VEHICLE OPERATOR (AVO) OR QUALIFIED SAFETY OBSERVER AT ALL TIMES.

4) SAFETY OBSERVERS SHALL MAINTAIN CONTINUOUS VOICE CONTACT WITH AVO.

5) IF A SAFETY OBSERVER LOSES VISUAL CONTACT WITH THE AIR VEHICLE, THE OBSERVER SHALL NOTIFY THE AVO IMMEDIATELY.

(B) FLIGHT OPERATIONS IN U.S. NATIONAL AIRSPACE OUTSIDE OF RESTRICTED AREAS OR WARNING AREAS: PROHIBITED.

(2) INTERNATIONAL AIRSPACE OPERATIONS SHALL BE IAW REF L, PARA 7.C, AND AS FOLLOWS:

(A) FLIGHT OPERATIONS SHALL BE OVER WATER, OR OVER SPARSELY POPULATED, OR UNPOPULATED AREAS ONLY.

(B) INTENTIONAL FLIGHT OVER PERSONNEL, CONGESTED AREAS, OPEN AIR ASSEMBLIES OF PEOPLE, AND HEAVILY TRAFFICKED ROADS: PROHIBITED.

(C) THE AIR VEHICLE SHALL BE OPERATED WITHIN VISUAL LINE OF SIGHT OF THE AVO OR QUALIFIED SAFETY OBSERVER AT ALL TIMES.

(D) SAFETY OBSERVERS SHALL MAINTAIN CONTINUOUS VOICE CONTACT WITH AVO.

(E) IF A SAFETY OBSERVER LOSES VISUAL CONTACT WITH THE AIR VEHICLE, THE OBSERVER SHALL NOTIFY THE AVO IMMEDIATELY.

(F) FLIGHT OPERATIONS IN WARNING AREA AIRSPACE IN INTERNATIONAL AIRSPACE SHALL BE IAW USING AGENCY PROCEDURES, REF M DUE REGARD PROCEDURES (OPERATIONS NOT CONDUCTED UNDER ICAO PROCEDURES) AND REF L.

(G) FLIGHT OPERATIONS IN INTERNATIONAL AIRSPACE SHALL BE IAW ICAO FLIGHT PROCEDURES OR, IF CONDUCTING FLIGHT OPERATIONS NOT UNDER ICAO PROCEDURES, OPERATIONS SHALL BE IAW REF M DUE REGARD PROCEDURES AND REF L.

E. SAFETY HAZARD KEEPOUT ZONES (LAUNCH, RECOVERY AND GROUND OPERATIONS):


(2) NON-ESSENTIAL PERSONNEL WITHIN SAFETY KEEPOUT ZONES: PROHIBITED.

(3) DURING LAUNCH AND RECOVERY OPERATIONS ABOARD VESSEL, NON-
ESSENTIAL PERSONNEL SHALL MAINTAIN A 50FT RADIUS STAND-OFF DISTANCE UNLESS PROTECTED BY SAFETY BARRIER.

F. LAUNCH/RECOVERY: HAND LAUNCHES/RECOVERY PROHIBITED.

G. SIMULTANEOUS OPERATION OF AIR VEHICLE FROM MULTIPLE GCS: PROHIBITED.

H. SIMULTANEOUS OPERATION OF TWO OR MORE AIR VEHICLES FROM A SINGLE GCS: PROHIBITED.

I. SHIPBOARD OPERATIONS: IAW REF K AND THE FOLLOWING:
   (1) MANUAL SHIPBOARD LAUNCH AND RECOVERY OPERATIONS: PROHIBITED.
   (2) ALT MODE WITH APPROPRIATE ALTITUDE SETTING SHALL BE ENABLED FOR ALL SHIPBOARD LAUNCHES.
   (3) NAV MODE ENABLED SHIPBOARD LAUNCHES ARE AUTHORIZED. SEE WARNING 4.Q(7).
   (4) INTENTIONAL FLIGHT OVER SHIP: PROHIBITED. INTENDED FLIGHT PATH AND CONTINGENCY PATHS, SUCH AS WAVEOFF, SHALL NOT CROSS OVER THE DECK EDGE DURING ANY PHASE OF FLIGHT EXCEPT LAUNCH AND RECOVERY.

J. GROUND OPERATIONS OF THE AIR VEHICLE SHALL BE CONDUCTED AT THE GREATEST DISTANCE PRACTICAL (NO LESS THAN 50 FEET) FROM ALL OTHER AIRCRAFT AND FUEL DEPOTS.

K. OPERATIONS NEAR ACTIVE ANTENNAS OF OTHER-SYSTEM RADIO TRANSMITTERS AND RADARS, ESPECIALLY THOSE WHICH EMIT HIGH LEVELS OF POWER (SEE PARA 4.J FOR POTENTIAL EMI HAZARDS):
   (1) MAINTAIN A SLANT RANGE STANDOFF DISTANCE OF 2 NM (3,700 METERS) FROM OPERATING MAIN BEAMS OF VERY-HIGH-POWERED AIR-SEARCH AND FIRE-CONTROL RADARS, AND SATCOM UPLINK TERMINALS, ESPECIALLY THOSE WHICH EMIT HIGH LEVELS OF POWER (GREATER THAN 1 KW AND ANTENNA GAINS GREATER THAN 20 DBI).
   (2) IN ALL CASES FOR FLIGHT OVER LAND AND AT SEA, BOTH AIR VEHICLE AND GCS MUST MAINTAIN A STAND-OFF DISTANCE OF 100 FT (30 METERS) OR MORE FROM OPERATING HF/VHF/UHF COMMUNICATIONS TRANSMITTERS (FROM 400W TO 1 KW OR LESS) WITH LOW-GAIN ANTENNAS.
   (3) DURING FLIGHT IN PROXIMITY WITH NAVAL COMBATANT SHIPS, FLIGHT WITHIN 3.0 NM OF SHIPS EQUIPPED WITH SPN-43, SPS-48, SPS-49, AND SPY-1 RADARS: PROHIBITED.
   (4) FOR RESEARCH VESSEL OPERATIONS, OPERATE THE GCS AS FAR AWAY FROM WHIP ANTENNAS AND NAVIGATION RADAR AS POSSIBLE. FLIGHT PATH DURING LAUNCH AND RECOVERY SHALL REMAIN AWAY FROM VESSEL PILOT HOUSE AND DECK EMITTERS.

L. SYSTEM OPERATION IN THE PRESENCE OF FLAMMABLE VAPORS IS PROHIBITED. AIR VEHICLE AND GCS SHALL BE UN-POWERED IF LOCATED LESS THAN 50 FT FROM ANY REFUELING OR DEFUELING OPERATIONS.

M. AN ELECTROMAGNETIC COMPATIBILITY (EMC) SAFETY-OF FLIGHT TEST (SOFT) SHALL BE PERFORMED PRIOR TO FIRST FLIGHT (AS WELL AS PRIOR TO FLIGHT OF ANY VARIANT OF ELECTRICAL/ELECTRONIC
CONFIGURATION AUTHORIZED BY THIS CLEARANCE). FLIGHT CRITICAL SYSTEMS SHALL BE CHECKED AGAINST ALL NEWLY INSTALLED EQUIPMENT FOR EMC. THIS INCLUDES NEW TRANSMITTER FREQUENCIES THAT HAVE NOT BEEN PREVIOUSLY CHECKED FOR COMPATIBILITY:

(1) THE EMC SOFT SHALL BE CONDUCTED WHILE THE NEARBY RF EMITTERS (RADIOS/RADARS/CREW SYSTEMS) THAT WILL BE PROXIMATE TO THE AIR VEHICLE OR GCS DURING AIR VEHICLE OPERATIONS ARE ACTIVATED.

(2) AN EMC SOFT IS NOT COMPLETE UNTIL ALL UNACCEPTABLE EMC ANOMALIES HAVE BEEN CORRECTED.

4. PROCEDURES, WARNINGS, CAUTIONS, AND NOTES: IAW REFS C THROUGH E, H THROUGH J AND THE FOLLOWING:

A. EMERGENCY PROCEDURE: CRITICAL SYSTEM FAILURE.
   A CRITICAL SYSTEM FAILURE CAN LEAVE THE AIR VEHICLE IN AN UNCONTROLLED STATE WHILE OPERATING WITHIN THE PARA 3 USAGE ENVELOPE. SUCH A FAILURE MAY RESULT IN THE AIR VEHICLE UNINTENTIONALLY DEPARTING THE OPERATING AREA OR SAFE-FOR-FLIGHT BOX.
   (1) IN THE EVENT OF AN ENGINE FAILURE OR OTHER CATASTROPHIC FAILURE, LOCAL AIR TRAFFIC CONTROL (ATC)/RANGE CONTROL AUTHORITY SHALL BE NOTIFIED IMMEDIATELY AND THE AIRCRAFT DITCHED OVER A PRE-SELECTED POINT.
   (2) IF NOT POSSIBLE TO MAKE THE PRE-SELECTED POINT, EVERY EFFORT SHALL BE MADE TO VISUALLY INSPECT THE PROBABLE IMPACT AREA PRIOR TO EXECUTING THE FLIGHT TERMINATION PROCEDURE.

-------------------------- WARNING --------------------------
A CRITICAL SYSTEM FAILURE MAY RESULT IN THE LOSS OF AIR VEHICLE, INJURY OR DEATH TO PERSONNEL, AND/OR DAMAGE TO PROPERTY EITHER INSIDE OR OUTSIDE OF THE OPERATING AREA OR SAFE FOR FLIGHT BOX.

---------------------------- NOTE ---------------------------
NO SECONDARY METHOD OF TERMINATING/CONTROLLING THE VEHICLE EXISTS.

----------------------------- END WARNING -----------------------------

B. NORMAL PROCEDURE: PREFLIGHT INSPECTION.
   PRIOR TO EACH FLIGHT THE AVO SHALL CONDUCT A PREFLIGHT INSPECTION AND DETERMINE THAT THE UAS IS IN A CONDITION FOR SAFE OPERATION.

C. NORMAL PROCEDURE: MID-AIR COLLISION AVOIDANCE WITH MANNED AIRCRAFT.
   THE INSTANTEYE UAS DOES NOT HAVE A SENSE AND AVOID SYSTEM. TO MINIMIZE THE RISK OF MID-AIR COLLISION:
   (1) AVO SHALL COORDINATE AIRSPACE USE WITH THE AIRSPACE CONTROLLING AUTHORITY AND BE IN COMMUNICATION WITH THIS AUTHORITY TO ACTIVELY DECONFLICT THE AIRSPACE WHEN OPERATING THE AIR VEHICLE.
   (2) AVO SHALL INITIATE AN RTB OR EXECUTE FLIGHT TERMINATION PROCEDURES, AS CONDITIONS PERMIT, IF THE LOCATION OF THE
AIR VEHICLE IS IN QUESTION.

(3) IN THE EVENT OF LOSS OF COMMUNICATIONS BETWEEN THE AVO AND LOCAL ATC/RANGE CONTROL, THE AVO SHALL FOLLOW LOCAL PROCEDURES.

-------------------------- WARNING --------------------------
A MID-AIR COLLISION WITH A MANNED AIRCRAFT MAY RESULT IN LOSS OF THE AIR VEHICLE, INJURY OR DEATH TO PERSONNEL, AND/OR DAMAGE TO OR LOSS OF THE MANNED AIRCRAFT.

---------------------------- NOTE ---------------------------
THE AVO IS RESPONSIBLE FOR ENSURING THAT THERE IS A SAFE OPERATING DISTANCE BETWEEN MANNED AIRCRAFT AND THE AIR VEHICLE.

D. NORMAL PROCEDURE: SAFETY OBSERVERS.
A SAFETY OBSERVER IN VERBAL COMMUNICATION WITH THE AVO SHALL MAINTAIN VISUAL LINE OF SIGHT CONTACT WITH THE AIR VEHICLE DURING ALL LAUNCH AND RECOVERY OPERATIONS.

(1) THE SAFETY OBSERVER SHALL BE CAPABLE OF INITIATING A TAKEOFF ABORT OR WAVEOFF BY DIRECT COMMUNICATION (RADIO, ETC.) WITH THE AVO.

(2) DURING RECOVERY OPERATIONS, THE SAFETY OBSERVER SHALL ASSESS THE VEHICLE FLIGHT PATH FOR EXCESSIVE ERRORS IN VEHICLE TRACKING OR NAVIGATION, AND IF THE ERRORS APPEAR TO BE UNREASONABLY LARGE OR GROWING QUICKLY, THE SAFETY OBSERVER SHALL INITIATE A WAVEOFF CALL TO THE AVO.

---------------------------- NOTE ---------------------------
THE EFFECTIVENESS OF THE SAFETY OBSERVER DURING NIGHT RECOVERY OPERATIONS IS VERY LIMITED AND ADDITIONAL CONSERVATISM SHOULD BE USED WHEN ASSESSING THE NEED TO PERFORM A WAVEOFF DURING NIGHT RECOVERY OPERATIONS.

E. NORMAL PROCEDURE: LITHIUM BATTERIES CHARGING, HANDLING, AND STORAGE.
BATTERY CHARGING, HANDLING, AND STORAGE PROCEDURES SHALL BE IAW REFS C, I, J, AND LOCAL PROCEDURES/SOPS.

-------------------------- WARNING --------------------------
THE INSTANTEYE UTILIZES COMMERCIAL OFF THE SHELF LITHIUM CHEMISTRY BATTERIES. LITHIUM CHEMISTRY BATTERIES HAVE THE POTENTIAL TO RELEASE VAPOR CLOUDS OF CHEMICALLY ACTIVE TOXIC, FLAMMABLE, OR CORROSIVE MATERIALS WHICH MAY CAUSE INJURY TO PERSONNEL, DAMAGE TO EQUIPMENT, AND/OR LOSS OF AIR VEHICLE.

F. NORMAL PROCEDURE: WATER EXPOSURE.
(1) REMOVE ALL LITHIUM BATTERIES FROM THE SYSTEM.
(2) STORE LITHIUM BATTERIES IN A FIRE RESISTANT CONTAINER AWAY FROM FLAMMABLE SUBSTANCES.
(3) DISPOSE OF BATTERIES IAW LOCAL HAZMAT PROCEDURES.

-------------------------- WARNING --------------------------
LITHIUM BATTERIES IMMERSED IN WATER MAY OUTGAS, RESULTING IN
OVERHEATING AND/OR FIRE CAUSING DAMAGE TO THE AIR VEHICLE AND/OR INJURY TO PERSONNEL.

G. NORMAL PROCEDURE: USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE).
(1) PROTECTIVE EYEWEAR SHALL BE WORN WITHIN 25 FT OF THE AIR VEHICLE WHILE THE ROTORS ARE TURNING.
WARNING
A CATASTROPHIC ROTOR/PROPELLER FAILURE OR LOSS OF AIR VEHICLE CONTROL MAY RESULT IN INJURY TO PERSONNEL.

(2) EAR PLUGS SHOULD BE WORN DURING GROUND OPERATIONS, LAUNCH AND RECOVERY OF THE AIR VEHICLE EXCEPT FOR SUCH TIMES THAT HEARING PROTECTION WOULD INTERFERE WITH SAFE OPERATIONS.
WARNING
NOISE CHARACTERIZATION TESTING HAS NOT BEEN COMPLETED ON THIS SYSTEM. PROLONGED EXPOSURE TO AIR VEHICLE NOISE AT CLOSE PROXIMITY MAY CONTRIBUTE TO HEARING LOSS.

H. NORMAL PROCEDURE: DEGRADED GPS.
(1) PROPER OPERATION OF THE GPS SHALL BE VERIFIED PRIOR TO EACH FLIGHT. THE GPS SHALL BE FREE OF DEGRADING INTERFERENCE PRIOR TO FLIGHT.

(2) IF GPS JAMMING IS SUSPECTED, THE AVO SHOULD COMMAND THE AIR VEHICLE TO A SAFE ALTITUDE AND EXIT THE AREA OF SUSPECTED JAMMING TO MINIMIZE THE POSSIBILITY OF UNEXPECTED NAVIGATION ERRORS.
NOTE
THE EFFECT OF GPS JAMMING ON THE AIR VEHICLE NAVIGATION SYSTEM HAS NOT BEEN FULLY CHARACTERIZED. IT IS POSSIBLE THAT GPS ALTITUDE AND NAVIGATION REFERENCE CAN BE IN ERROR.
NOTE
FLIGHT OPERATIONS WITHOUT GPS, OR WITH DEGRADED GPS DATA, INCREASES AVO WORKLOAD AND INCREASES THE UNCERTAINTY IN REPORTED AIR VEHICLE POSITION. WITHOUT A FUNCTIONING GPS, IT WILL BE NECESSARY TO RELY ON ALTERNATE NAVIGATION TECHNIQUES.
NOTE
GPS ACCURACY IN BOTH ALTITUDE AND LOCATION CAN BE EXPECTED TO BE SIGNIFICANTLY DEGRADED AT HIGHER LATITUDES DUE TO SATELITE GEOMETRY AND ATMOSPHERIC EFFECTS. IN ADDITION MAGNETIC COMPASS ACCURACY CAN ALSO BE UNRELIABLE AT HIGHER LATITUDES. THIS SYSTEM HAS NOT BEEN SPECIFICALLY EVALUATED TO DETERMINE ABILITY TO FLY AT HIGH LATITUDES. EVALUATION OF GPS ACCURACY SHOULD BE MADE PRIOR TO FLIGHT ON A GIVEN DAY. USE OF ALTERNATE ALTITUDE AND NAVIGATION SOURCES OR TECHNIQUES SHOULD BE CONSIDERED OR FREQUENTLY CROSS CHECKED.

I. NORMAL PROCEDURE: SAFE-FOR FLIGHT BOX.
A UAS OPERATING AREA OR SAFE-FOR-FLIGHT BOX SHALL BE
Established within the airspace and/or range boundaries that ensures that the air vehicle is contained within the airspace boundaries at all times. The following should be considered when constructing the UAS operating area or safe-for-flight box:

1. Above ground level operating altitudes.
2. Loss of communication/loss of link/GPS time out periods.
3. Loss of communication/loss of link profiles.
4. Air vehicle engine-out glide ratios.
5. Return home profiles.
6. Air vehicle maximum airspeed.
7. Air vehicle maximum range/endurance.
10. Command and control communication ranges.
11. RF emitters stay clear distances, etc.

--------------------------- Note ---------------------------
A system failure, environmental factor, or lack of UA performance can leave the air vehicle in an uncontrolled state resulting in the vehicle unintentionally departing the operating area or safe-for-flight box, and/or excursions into personnel safety hazard keepout zones.

--------------------------- Warning ---------------------------
Operation near active antennas may result in loss of link, motor RPM reduction and uncommanded shut down, flight control surface fluctuation, and autopilot disruption, leading to loss of air vehicle, injury to personnel, and/or damage to property.

--------------------------- Warning ---------------------------
Navair has not characterized the instaneye UAS for susceptibility to internal or external electromagnetic fields, including those produced by radio transmitters and radars. Radio-frequency (RF) energy may disrupt motor control, GPS receiver function, C2 datalinks, or flight control and may cause loss of air vehicle control, or degraded navigation. Operation near antennas of active radio transmitters and SATCOM, and radars, especially those operating at high power levels (greater than 1 kW and antenna gains greater than 20 dbi) may result in loss of air vehicle, injury to personnel, and/or damage to property. Observe para 3.K emitter stand-off limits.
K. NORMAL PROCEDURE: FREQUENCY COORDINATION.
THE AVO SHALL COORDINATE FREQUENCIES WITH ANY OTHER UAS OR
MANNED SYSTEMS IN THE OPERATING AREA IAW LOCAL SPECTRUM
MANAGEMENT PROCEDURES.
-------------------------- WARNING --------------------------
COMMAND AND CONTROL DATALINK INTERFERENCE MAY OCCUR WHEN
OTHER UAS CONFIGURED WITH SIMILAR COMMAND AND CONTROL
DATALINKS ARE OPERATING WITHIN THE SAME FREQUENCY BANDS OR
HOPSETS, AND ARE WITHIN RECEPTION RANGE. DATALINK
INTERFERENCE MAY CAUSE LOSS OF THE COMMAND AND CONTROL
DATALINK AND MAY RESULT IN LOSS OF THE AIR VEHICLE.

L. NORMAL PROCEDURE: LOSS OF LINK AVOIDANCE.
FLIGHT BEYOND VISUAL LINE-OF-SIGHT OR BEHIND OBJECTS AND
TERRAIN FEATURES INCREASES THE RISK OF LOSS OF LINK: AIR
VEHICLE OPERATOR SHOULD AVOID INTENTIONAL FLIGHT IN A LOSS-
OF-LINK CONDITION.
-------------------------- WARNING --------------------------
LOSS OF LINK MAY RESULT IN COLLISION WITH AIRCRAFT,
FLIGHT INTO TERRAIN, INJURY TO PERSONNEL, AND/OR
LOSS OF AIR VEHICLE.

M. NORMAL PROCEDURE: WAVEOFF.
THE AVO SHALL BE PREPARED TO RECEIVE A WAVEOFF COMMAND FROM
THE SAFETY OBSERVER AND INITIATE A WAVEOFF IN A TIMELY
MANNER.
-------------------------- WARNING --------------------------
EXCESSIVE DELAY INITIATING A WAVEOFF MAY RESULT IN LOSS OF
AIR VEHICLE, INJURY OR DEATH TO PERSONNEL AND/OR DAMAGE TO
PROPERTY.
-------------------------- NOTE --------------------------
THE SAFETY OBSERVER SHOULD CONSIDER THE TIME REQUIRED TO
ASSESS A WAVEOFF CONDITION AND COMMAND A WAVEOFF.

N. NORMAL PROCEDURE: RECOVERY PARAMETER CHECKS.
WHEN INPUTTING OR CHANGING RECOVERY PARAMETERS AND SETTINGS,
THE AVO SHALL FOLLOW THE APPROVED CHECKLIST AND VERIFY THE
SETTINGS TO BE CORRECT AND PROPER PRIOR TO SENDING TO THE
AIR VEHICLE.
-------------------------- WARNING --------------------------
INCORRECT ENTRY OF RECOVERY PARAMETERS INTO THE GCS CAN
RESULT IN LOSS OF THE AIR VEHICLE, INJURY TO PERSONNEL,
AND/OR DAMAGE TO PROPERTY.

O. ADDITIONAL WARNINGS, CAUTIONS AND NOTES:
(1) ------------------------ WARNING ------------------------
CATEGORY 3 UAS HAVE AN INCREASED LIKELIHOOD OF FLIGHT
CRITICAL FAILURES WHICH MAY LEAD TO LOSS OF CONTROL OR
LOSS OF AIR VEHICLE, INCREASING THE RISK OF INJURY OR DEATH TO PERSONS ON THE GROUND. THE AIR VEHICLE OPERATOR IS RESPONSIBLE FOR ENSURING THAT AIR VEHICLE OPERATIONS WILL POSE NO UNDUE HAZARD TO OTHER AIRCRAFT, PEOPLE OR PROPERTY IN THE EVENT OF LOSS OF CONTROL OF THE AIRCRAFT FOR ANY REASON.

(2) ------------------------ WARNING ------------------------
THIS INTERIM FLIGHT CLEARANCE (IFC) BASES ITS LAUNCH, RECOVERY AND FLIGHT LIMITATIONS ON OEM DOCUMENTS THAT HAVE NOT BEEN VALIDATED BY NAVAIR. FLIGHT CHARACTERISTICS AND PERFORMANCE OF THE INSTANTEYE UAS HAVE NOT BEEN INDEPENDENTLY ASSESSED BY NAVAIR OR VERIFIED AGAINST ESTABLISHED AIRWORTHINESS STANDARDS. LOSS OF AIR VEHICLE CONTROL RESULTING IN LOSS OF AIR VEHICLE MAY OCCUR WHILE OPERATING WITHIN THE PARA 3 USAGE ENVELOPE.

(3) ------------------------ WARNING ------------------------
THE INSTANTEYE UAS HAS NOT UNDERGONE SAFETY OF FLIGHT EXPLOSIVE ATMOSPHERE TESTING. A SERIOUS FIRE OR EXPLOSION MAY OCCUR IF THE AIR VEHICLE IS POWERED WHILE FLAMMABLE VAPORS ARE PRESENT DURING GROUND OR FLIGHT OPERATIONS RESULTING IN INJURY OR DEATH TO PERSONNEL AND LOSS OF AIRCRAFT.

(4) ------------------------ WARNING ------------------------
THE AUTOPILOT SOFTWARE HAS NOT BEEN VALIDATED BY NAVAIR AGAINST ESTABLISHED AIRWORTHINESS STANDARDS. NAVAIR HAS NOT ASSESSED SOFTWARE AND/OR EXISTING DEFECTS THAT AFFECT FLIGHT OPERATIONS. LOSS OF AIR VEHICLE CONTROL RESULTING IN LOSS OF VEHICLE, INJURY OR DEATH TO PERSONNEL, AND/OR DAMAGE TO PROPERTY MAY OCCUR WHILE OPERATING WITHIN THE PARA 3 USAGE ENVELOPE.

(5) ------------------------ WARNING ------------------------
ENVIRONMENTAL QUALIFICATION OF THE INSTANTEYE UAS HAS NOT BEEN CONDUCTED. INADVERTENT FLIGHT IN RAIN MAY RESULT IN LOSS OF AIR VEHICLE.

(6) ------------------------ WARNING ------------------------
WHEN ATTEMPTING TO LAUNCH THE AIR VEHICLE FROM A MOVING VESSEL IN NAV MODE, THE AIR VEHICLE WILL ATTEMPT TO HOLD ABSOLUTE POSITION WHILE THE VESSEL CONTINUES TO MOVE. IF THERE IS ANY LAG BETWEEN WHEN THE AIR VEHICLE COMMITS ITS POSITION AND WHEN IT ACHIEVES FLIGHT THE POTENTIAL EXISTS FOR LARGE ATTITUDE TRANSIENTS AS THE CONTROLLER SEEKS THE HELD POSITION. THIS COULD LEAD TO INJURY TO PERSONNEL, DAMAGE TO EQUIPMENT, AND/OR LOSS OF AIRCRAFT.

(7) ------------------------ WARNING ------------------------
THE INSTANTEYE AIR VEHICLE EXHIBITS DEGRADED MANEUVERING CAPABILITIES WHEN INDICATED FLIGHT TIME REMAINING IS LESS THAN APPROXIMATELY 3 MINUTES. ATTEMPTING TO FLY WITH LESS THAN 3 MINUTES INDICATED FLIGHT TIME REMAINING MAY CAUSE LOSS OF CONTROL OF THE AIR VEHICLE AND POSSIBLE INJURY TO
PERSONNEL OR DAMAGE TO EQUIPMENT ON THE GROUND.

(8) ------------------------ WARNING ------------------------
WHEN ATTEMPTING TO LAUNCH THE AIR VEHICLE FROM A MOVING VESSEL IN NAV MODE, THE AIR VEHICLE WILL ATTEMPT TO HOLD ABSOLUTE POSITION WHILE THE VESSEL CONTINUES TO MOVE. IF THERE IS ANY LAG BETWEEN WHEN THE AIR VEHICLE COMMITS ITS POSITION AND WHEN IT ACHIEVES FLIGHT THE POTENTIAL EXISTS FOR LARGE ATTITUDE TRANSIENTS AS THE CONTROLLER SEeks THE HELD POSITION. THIS COULD LEAD TO INJURY TO PERSONNEL, DAMAGE TO EQUIPMENT, AND/OR LOSS OF AIRCRAFT.

(9) --------------------- NOTE -----------------------------
SUCCESSFUL COMPLETION OF AN EMC SOFT IS A CHECK, BUT NOT A GUARANTEE, THAT SYSTEM OPERATION WILL NOT BE DISRUPTED BY ITS OWN, OR NEARBY, ELECTRONIC EQUIPMENT.

(10) --------------------- NOTE -----------------------------
ALL ANOMALIES OBSERVED WITH THE INSTANTEYE UAS THAT RESULT IN, OR HAVE THE POTENTIAL OF CAUSING, AN AIR VEHICLE MISHAP SHALL BE REPORTED TO AIR 4.1.1 (SEE PARA 6.A).

5. TIME PERIOD: THIS IFC EXPIRES 30 NOV 2018.
6. POINTS OF CONTACT:
   A. RICHARD SHADDEN, UAS NON-POR CLASS DESK. TEL: 760-939-3263, EMAIL: RICHARDS.SHADDEN@NAVY.MIL.
   B. SARAH SMITH, FLIGHT CLEARANCE FACILITATOR, TEL: 301-757-4900, EMAIL: SARAH.G.SMITH.CTR@NAVY.MIL.
   C. AIRWORTHINESS GLOBAL CUSTOMER SUPPORT TEAM, TEL: 301-757-0187, EMAIL:AIRWORTHINESS@NAVY.MIL.
7. OTHER REMARKS:
   A. REQUEST TYCOM READDRESS THIS MESSAGE TO APPROPRIATE ACTIVITIES FORAC.
   B. THIS IFC MAY NOT TO BE USED AS A STATEMENT OF AIRWORTHINESS IN SUPPORT OF ANY CERTIFICATE OF AUTHORIZATION (COA) FROM THE FEDERAL AVIATION ADMINISTRATION (FAA).
   C. THE AIR VEHICLE OPERATOR IS RESPONSIBLE FOR OBTAINING RADIO FREQUENCY SPECTRUM APPROVAL FOR OPERATION, COMMAND AND CONTROL OF THE UAS IN ACCORDANCE WITH APPLICABLE NAVY POLICY.
   D. THE AIR VEHICLE OPERATOR IS RESPONSIBLE FOR COMPLIANCE WITH REF L UAS POLICIES AND OPERATIONS INCLUDING GENERAL FLIGHT RULES, AIRCREW QUALIFICATIONS AND AEROMEDICAL QUALIFICATIONS.
   E. THE AIR VEHICLE OPERATOR IS RESPONSIBLE FOR ASSESSING OPERATIONAL RISKS, INCLUDING BUT NOT LIMITED TO MIDAIR COLLISION, AIRSPACE CONTAINMENT, AND HAZARDS TO PERSONNEL (OPERATORS, SAFETY OBSERVERS, AND THIRD PARTIES), DURING GROUND, LAUNCH, FLIGHT, AND RECOVERY OPERATIONS. OPERATIONAL RISK SHALL BE ASSESSED BY THE OPERATOR IAW REF N.
   F. THE AIR VEHICLE OPERATOR IS RESPONSIBLE FOR COMPLIANCE WITH THE NAVAL AVIATION SAFETY POLICIES, PROVISIONS, AND REPORTING REQUIREMENTS IAW REF O.
G. THE UAS SHALL BE OPERATED AND MAINTAINED IAW APPLICABLE MANUFACTURER OPERATING MANUALS, MAINTENANCE MANUALS, SERVICE BULLETINS, SAFETY BULLETINS, OPERATIONAL ADVISORIES.

H. THE UAS SHALL BE MAINTAINED IAW APPLICABLE MANUFACTURER MAINTENANCE, OVERHAUL, REPLACEMENT, INSPECTION AND LIFE LIMIT REQUIREMENTS FOR THE UAS. THE OPERATOR IS RESPONSIBLE FOR DOCUMENTING AND MAINTAINING RECORDS OF UAS MAINTENANCE, PREVENTIVE MAINTENANCE, STATUS OF REPLACEMENT/OVERHAUL COMPONENT PARTS. REFER TO REF P FOR POLICY.

I. PER REF Q, THE SPONSOR ACKNOWLEDGES HIGHER PROBABILITY OF LOSS OF THE UAV, AS DEFINED IN REF R.

J. PER REF R, THIS FLIGHT CLEARANCE PROVIDES A NAVAIR CATEGORY 3 AIRWORTHINESS CERTIFICATION SUBSEQUENT TO AN ENGINEERING REVIEW AND RISK ASSESSMENT TO ENSURE SAFETY OF FLIGHT AND REDUCE RISK TO PERSONNEL AND PROPERTY, AND/OR ENVIRONMENT.

K. THIS IFC DOES NOT AUTHORIZE AIRCRAFT/SYSTEM MODIFICATION, NOR DOES IT SATISFY NAVAIR REQUIREMENTS FOR CONFIGURATION MANAGEMENT. AS DIRECTED BY OPNAVINST 4790.2J, REFER TO CNAFINST 4790.2B CH-1 FOR POLICY GUIDANCE ON CONFIGURATION MANAGEMENT AND MOD AUTHORITY.

L. INFORMATION REGARDING THE AIRWORTHINESS PROCESS, INCLUDING A LISTING OF ALL CURRENT INTERIM FLIGHT CLEARANCES, NATOPS AND NATIP PRODUCTS ISSUED BY NAVAIR 4.0P, CAN BE FOUND AT OUR WEBSITE: AIRWORTHINESS.NAVAIR.NAVY.MIL.

M. E.POWER FOLDER 1284079, TRACKING NUMBER 74946.//

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