

## Sample SUA Emergency Procedures

### Pilot Incapacitation

Symptom/ Issue	Warning	Pilot Action	Crew Action	Remarks
Pilot incapacitation		Activate RTH (Return to Home) or BL (Back Landing) if possible.	<p>Pick up controller.</p> <p>Confirm launch area clear.</p> <p>Monitor video display (if still functioning).</p> <p>Initiate Return to Home procedure, OR land the SUA if trained to do so.</p> <p>Administer First Aid to pilot as appropriate</p> <p>Call Emergency Services if required</p>	<p>Administer first aid to pilot.</p> <p>When Return to Home is initiated: If below 20m the SUA will climb to 20m (if already above 20m the SUA will stay at the same height)</p> <p>The SUA will return directly to the launch position, hover for 15 seconds then gradually descend until it lands and the motors will automatically disarm.</p> <p>Complete CAP 382 MOR ECCAIRS.</p>

### Airspace Incursion

Symptom/ Issue	Warning	Pilot Action	Crew Action	Remarks
Airspace Incursion	Visible or audible signs of another air user in the location.	<p>Climb or descend as appropriate.</p> <p>Alert crew to issue.</p> <p>When location of other air user has been identified move directly away, land if safe to do so.</p>	<p>Crew to prioritise the identification of the location of the other air user.</p> <p>Crew to keep pilot aware of what they can see.</p> <p>Ensure landing location is clear.</p>	<p>Record any relevant information relating to the airspace incursion for UK AirProx Board.</p> <p>Complete AirProx Form CA1904</p>

## Loss of Control Data Link

Symptom/ Issue	Warning	Pilot Action	Crew Action	Remarks
Loss of Control Data Link	<p>SUA unresponsive</p> <p>Poor signal strength.</p> <p>SUA shows fast flashing amber lights</p>	<p>Alert crew to issue.</p> <p>Attempt to regain control of the SUA by changing flight mode from its current mode to an alternate and back.</p>	<p>Ensure landing location is clear.</p> <p>Monitor video display (if still functioning).</p> <p>Provide pilot with appropriate updates on status.</p>	<p>SUA will enter a 'failsafe' mode in this situation after 3 seconds.</p> <p>When failsafe is initiated: If below 20m the SUA will climb to 20m (if already above 20m the SUA will stay at the same height)</p> <p>The SUA will return directly to the launch position, hover for 15 seconds then gradually descend until it lands and the motors will automatically disarm.</p> <p>If SUA re-acquires link at any time the pilot can change the flight mode to regain control of the RPA by cycling the flight mode switch.</p> <p>Pilot must land the RPA as soon as it is safe to do so to investigate the issues.</p> <p>Complete CAP 382 MOR ECCAIRS.</p>

## Rogue SUA

Symptom/ Issue	Warning	Pilot Action	Crew Action	Remarks
SUA flying without response from Person in Charge and uncontrollable	SUA unresponsive	<p>Alert crew to issue.</p> <p>Attempt to regain control of the SUA by changing flight mode switch.</p> <p>Attempt to initiate Return to Home using switch.</p> <p>Turn off Pilot Controller to attempt to force a failsafe. If this does not work turn controller back on again and try to regain control.</p> <p>If control regained, bring SUA home and land.</p> <p>If control not regained, prepare for crash landing.</p> <p><i>Call "CLEAR"</i></p> <p>Proceed to crash site if possible</p> <p>Inform local ATC if required</p> <p>Inform emergency services if required</p>	<p>Identify a landmark on the horizon to assist with identifying direction of flight, from launch area or mark location.</p> <p>Monitor video display (if still functioning). Provide pilot with appropriate updates on status.</p> <p>Take a bearing of the direction of flight.</p> <p>Inform local ATC if required</p> <p>Inform emergency services if required</p>	<p>Dependent on outcome possibly inform the relevant agencies and personnel.</p> <p>Complete CAP 382 MOR ECCAIRS.</p>

## Loss of Power (SUA)

Symptom/ Issue	Warning	Pilot Action	Crew Action	Remarks
Loss of power (SUA)	Unexpected descent	<p>Alert crew to impending crash.</p> <p>Attempt to regain control by changing flight mode switch.</p> <p>If control regained, bring SUA home and land.</p> <p>If control not regained, prepare for crash landing.</p> <p><i>Call "CLEAR"</i></p> <p>Proceed to crash site if possible</p> <p>Inform local ATC if required</p> <p>Inform emergency services if required</p>	<p>Identify a landmark on the horizon to assist with location of SUA.</p> <p>Monitor video display (if still functioning).</p> <p>Provide pilot with appropriate updates on status.</p> <p>Proceed to crash site if possible</p> <p>Inform local ATC if required</p> <p>Inform emergency services if required</p>	<p>Carry out post crash management procedure.</p> <p>Complete CAP 382 MOR ECCAIRS.</p>

## Loss of Power (Ground Control Equipment)

Symptom/ Issue	Warning	Pilot Action	Crew Action	Remarks
Loss of power (ground control equipment)	<p>Tablet screen extinguished.</p> <p>Green connection light and / or white power lights on RC extinguish.</p> <p>SUA shows fast flashing amber lights.</p>	<p>Alert crew to the loss of control.</p> <p>Ensure landing site is cleared.</p> <p>Watch behaviour of machine to ensure failsafe is operating correctly. If not initiate Rogue SUA procedure.</p>	<p>Monitor video display (if still functioning).</p> <p>Provide pilot with appropriate updates on status.</p>	<p>If SUA experiences control data loss for more than 3 sec it will enter the failsafe mode.</p> <p>If SUA experiences control data loss for more than 3 seconds it will enter a failsafe mode.</p> <p>When failsafe is initiated: If below 20m the SUA will climb to 20m (if already above 20m the SUA will stay at the same height)</p> <p>The SUA will return directly to the launch position, hover for 15 seconds then gradually descend until it lands and the motors will automatically disarm.</p> <p>If SUA re-acquires link at any time the pilot can change the flight mode to regain control of the SUA.</p> <p>Pilot must land the SUA as soon as it is safe to do so to investigate the issues.</p> <p>Complete CAP 382 MOR ECCAIRS.</p>

## Unexpected Behaviour In Flight

Symptom/ Issue	Warning	Pilot Action	Crew Action	Remarks
Unexpected behaviour in flight	<p>Deviation from expected flight path</p>	<p>Alert crew to the loss of control.</p> <p>Ensure landing site is cleared.</p> <p>Pilot must land the SUA as soon as it is safe to do so to investigate the issues.</p>	<p>Monitor video display (if still functioning).</p> <p>Provide pilot with appropriate updates on status.</p>	

## Lithium Polymer Battery Fault

Symptom/ Issue	Warning	Pilot Action	Crew Action	Remarks
Swelling of battery or overheating  From impact damage following aircraft crash, dropping of battery or charging malfunction	Smoke or sparking	Alert crew to the fault.  <i>Call "CLEAR"</i>  If RPA is in flight and still under control land immediately in a safe area away from public.  Inform emergency services as required.  Cordon off area from battery/ SUA.  <i>If necessary and safe to do so use extinguisher.</i>	Crew to keep location of fire clear.    Inform emergency services as required.  Cordon off area from battery/ SUA.  <i>If necessary and safe to do so use extinguisher.</i>	LiPo batteries are highly dangerous and can explode  Keep distance until safe to approach  First on scene of SUA: approach battery with extreme caution, wearing PPE (goggles, fire resistant gloves), LiPo bag and with fire extinguisher to hand.  Dispose of battery in accordance to safety guidelines OR safely discharge battery.  Complete CAP 382 MOR ECCAIRS.

## SUA Fire

Symptom/ Issue	Warning	Pilot Action	Crew Action	Remarks
Smoke / fire	Flame	Alert crew to the fire.  <i>Call "CLEAR"</i>  If RPA is in flight and still under control land immediately in a safe area away from public.  Inform emergency services as required.  Cordon off area from battery/RPA/ crash site.  <i>If safe to do so use extinguisher.</i>	Crew to keep location of fire / crash site clear.    Inform emergency services as required.  Cordon off area from battery/RPA/ crash site.  <i>If safe to do so use extinguisher.</i>	LiPo batteries are highly dangerous and can explode  Keep distance until safe to approach  First on scene of RPA: approach battery with extreme caution, wearing PPE (goggles, fire resistant gloves), LiPo bag and with fire extinguisher to hand.  Dispose of battery in accordance to safety guidelines.  Complete CAP 382 MOR ECCAIRS.