



Product Instruction Document

for the use of MX14 Aero
(For Rotary Wing Aircraft)

Document No. PID-MX14-002-RW



GENERAL CERTIFICATION NOTES

Flammability.

Additional flammability and antibacterial testing may be required when using this document if there are changes to certification required by the appropriate competent authority.

Document Limitations

“Repairs” certified and referenced in this drawing are limited to parts that have been removed from the aircraft and performed in a suitable component shop. Any repairs performed on wing will be subject to the aircraft operators continued airworthiness and management's organisational procedures

Aerospace Information

This product has been tested on parts and equipment in relation to the following ATA-100 Chapter Only:

- ATA Chapter 25 – Equipment/Furnishings

The use of this product is intended for the removal of random and unintentional surface pigmentation and stain marks on aircraft furnishings including but not exclusive to: Seat covers, Curtains, Carpet, Decorative Coverings. Hard surfaces to include, Tray Tables, High touch areas, Toilet sanitisation areas, Crew seats and Passenger seats fixtures, Side walls, Plexiglas and normal glass surfaces.

And also for the sanitisation and removal of Microbial and Bacterial Surface contamination including but not exclusive to Tray Tables, Side Walls, High Touch areas, Galley areas. Toilet Areas. Plexiglass and normal glass surfaces.

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1. Change/Repair Details

A. Introduction

- 1) This leaflet has been raised for a repair and process procedure for the cleaning of surfaces and furnishings found within a aircraft interior that are utilised by crew and passengers. There are two separate processes
 - a) Removal of stains and pigmentations that have occurred through spillages or unintentional contact with materials or items that have deposited a stain or marked a surface or material.
 - b) Removal of microbial and bacterial surface contamination that may have been introduced by direct and indirect contact with persons that may or may not have a transmittable infection. To ensure that the highest standard of cabin sanitisation is maintained to comply with required hygiene standards documentation issued either by a competent authority or internal documentation.
- 2) This leaflet is issued to give information and instructions to maintenance personal on how to carry out an approved repair and cleaning schedule to remove the stained and pigmented areas and also how to carry out effective microbial and bacterial surface contamination cleaning.

3) Definitions

- a) Stain – A stain is defined as a "mark or discolour with something that is not easily removed"
- b) Sanitise – Sanitisation is defined as "To make something sanitary (free of germs) as by sterilising. sanitisation, sanitation. cleaning, cleansing, clean-up. In simple terms, the act of making something clean.

Note: Please refer to any cabin standard documentation that may be available as part of your inspection criteria. The issue and use of this document is to be controlled by your available quality procedures as issued by the appropriate competent authorities and/or quality systems that you will already have in place or utilise.

Note: If no cabin standard document exists then the following criteria should be utilised as part of the inspection requirements for removal of stains and hygiene cleaning requirements.

2. Inspection

A. Inspection for stained articles, materials and surfaces.

- 1) For Seat Covers, or any Passenger and Crew seating cover and ancillary items located in passenger area, and soft furnishing including carpets and curtains.
 - a) Ink marks – any seat cover, soft furnishing etc that has an ink mark on the surface that is visible while in its normal position or in any passenger or crew area is acceptable up to 1.3cm (0.5in), to a maximum of 2 visible marks per passenger place. Any ink marks that exceed this limitation should be considered outside of limits and the item be scheduled or highlighted for cleaning of contaminated areas.

- b) Stained areas other than ink marks – any seat cover soft furnishings, etc., that has visible stained areas while the seat is in normal position or visible while in operation in any passenger or crewed area greater than 1 inch square and with more than 2 areas of a similar size per pax place should be considered outside of limits and the item should be scheduled or highlighted for cleaning of contaminated areas.
- 2) Inspection for high touch areas, surfaces that are subject to sanitary requirements or have risk of microbial or bacterial transfer or cross contamination.
- a) Any area that is required to comply with either a cabin standard documentation for hygiene or to comply with local, competent authority or international hygiene requirements for microbial and bacterial contamination or risk of cross contamination should be considered as contaminated per flight rotation.
- b) A cleaning schedule should comprise of cleaning highlighted areas and maintained by approved personnel.
- c) These areas include, but are not limited to:
- High touch areas such as arm rests, tray tables, seat covers, internal windows and blinds (if fitted)
 - All door handles
 - All surfaces within the lavatory (including all handles, and extraction and waste water areas that require specialised treatments not available in this document)
 - Galley areas and prep areas (including all handles, and waste disposal areas that require specialised treatment are not available in this document).

3. Repair and Hygiene Cleaning Limitations

- A. If a "Cabin Standard" document is utilised then any limitations that are categorised within that document shall be utilised as part of the operators cleaning and maintenance procedures. Any items that are identified as either unrepairable or not being able to clean due to extent of contamination or require specialised cleaning operations as defined by the equipment's OEM and continued airworthiness requirements, or as defined within the operators "Cabin Standards" document, are to be identified as specified per the relevant documentation.
- B. If no "Cabin Standard" documentation exists then the following limitations will apply:
- 1) On Wing
- a) For stains that cover more than 50% of the total area or to a maximum of 12 inches square for a single stain or for individual marks that total of more than 10 identifiable marks and if the item can be removed from its position then that item is unsuitable to be repaired in situ on the aircraft. These items will be required to be removed and repaired in a suitable repair station or area.
- 2) Off Wing
- a) For items that exceed the 'On Wing' limitations, and have been removed for repair, then there is no size limitation.

3) On and off wing sanitisation

- a) For all items and areas that require to be sanitised as defined in Para 1. A. 1) b) above, there is no size limit or cleaning limit as long as that item does not have a defined limit as directed as by its OEM documentation, if this exists then the OEM limits are to be adhered to.

4. Training Requirements

- A. Only approved operators that have been appointed by the aircraft operator are to conduct any repairs or sanitisation as defined within this document. Training to utilise these procedures and materials is currently only available from the OEM, this is defined as MX14 Aero and its approved distributors. For full details please go to www.mx-14.aero.

5. Health and Safety Requirements

- A. MSDS datasheets are supplied with all cleaning materials and variations. Datasheets are also available from www.mx-14.aero.
- B. It is required that minimal PPE be utilised while performing both repair and the sanitisation of items as defined within this document. This includes but not exclusive to:
- Suitable dust/vapour masks
 - Latex and non-latex hand coverings
 - Coveralls, including footwear covers for on wing
 - Suitable splash guard eyewear.

6. Marking and Recording of Repair and Sanitisation of Areas and Components

Note: For items that are being cleaned as part of an established "Cabin Standard" document then any post cleaning requirement for recoding shall be utilised. If no document exists then the following procedures will be utilised.

- A. For the removal of stains and pigmentations, items will be required to be identified with the following information and marked with indelible ink.
- Document number.
 - Issue number and date.
 - Date of Repair.
 - MRO approval number or stamp.

Note: A label with the required information may be utilised as required and either attached to the item or attached to the main assemble of the item

- B. For areas that have been sanitised and cleaned in accordance with these procedures are to be recorded on an appropriate document as stipulated by the controlling quality system and shall include the following information.
- Document number.
 - Issue number and date.
 - Date and time of cleaning operation
 - Aircraft MSN number

Note: After cleaning or sanitisation operations have been completed it is required that a quality inspection is conducted to ensure the required levels of removal of any surface contamination have been complied with. If no document is available that defines this requirement then it is recommended that process "Post inspection and ATP testing of sanitised and cleaned surfaces.", detailed further in this document, be utilised to record and control this requirement.

7. Aircraft Applicability

AUGUSTA WESTLAND	AW 119, 139, 159, 169, 189, 249, 609
BELL	47, 204, 205, 206, 210, 212, 214, 222, 230, 407, 412, 427, 429, 430, 525, 505
EUROCOPTER (AIRBUS)	ALL
ROBINSON	R22, R44, R66
SIKORSKY	ALL
WESTLAND	ALL

8. Material Requirements

A. The following materials are to be utilised while performing the processes as defined within this document for repairs and sanitisation as required. Any alternatives will also be listed.

Part number	Description	Vendor	Alternative
MX14-SPT-00100	Concentrate for spot and heavy duty clean	MX-14.aero for current authorized distributors	None
MX14-HVY-00401	Spot cleaning and heavy duty clean	MX-14.aero for current authorized distributors	None
MX14-HDS-00801	Heavy duty sanitiser/cleaner	MX-14.aero for current authorized distributors	None
MX14-GDS-01601	General duty sanitiser/cleaner	MX-14.aero for current authorized distributors	None
None	Paper towel	Commercially Available	As required
None	Absorbent Cloth or hand sponge.	Commercially Available	As required
MX14-ATP-RLUSWABS	ATP quick swap analysis collection tool	MX-14.aero for current authorized distributors	None
MX14-ATP-PORT01	Portable ATP analysis device	MX-14.aero for current authorized distributors	None
MX14-BX-010203	Carry on box with various content	MX-14.aero for current authorized distributors	None
MX14-EXTRAC-001	Water extraction system	MX-14.aero for current authorized distributors	None
MX14-SPT-00100-PEN	Pen spot clean dispenser	MX-14.aero for current authorized distributors	None

Note: Items MX14-SPT-00100, MX14-HVY-00401, MX-HDS-00801 and MX14-GDS-01601 are supplied in various sizes: 250mL (8oz), 500ml (16oz) 1L (32oz) 5L (1.32 US Gal) 10L (2.64 US gal) and 25L (6.6 US Gal) purchaser to define requirements prior to shipment from supplier.

Note: Items MX14-HDS-00801 and MX14-GDS-01601 can be supplied in spray bottles at 1L (32oz) Only if requested.

Note: Solution MX14-SPT-00100 can be utilised and dispensed as a spot cleaner contained in the pen system MX14-SPT-00100-PEN. Purchaser to define requirements prior to shipment from supplier.

CAUTION: IT IS A REQUIREMENT THAT ITEMS MX14-SPT-00100, MX14-HVY-00401, MX-HDS-00801 AND MX14-GDS-01601 IN WHATEVER CONTAINER THAT IT IS STORED IN, IS TO BE KEPT IN AN ENVIRONMENT AWAY FROM DIRECT SUNLIGHT AND THAT DOES NOT EXCEED 23C MAX (74F) OR 1C MIN (33F) FOR EXTENDED PERIODS OF TIME

CAUTION: ITEM MX14-ATP-RLUSWABS MUST BE STORED IN A REFRIGERATED AREA FROM 2C TO 5C (35F TO 41F) PRIOR TO USE IN THE ATP HYGIENE MONITOR SYSTEM. THESE ITEMS REQUIRE REMOVAL FROM STORED AREA AT LEAST 15 TO 20 MINUTES SO AS TO ACHIEVE ROOM TEMPERATURE BEFORE TESTING AND MEASUREMENTS UNDERTAKEN. IT IS RECOMMENDED THAT THEY ARE TRANSPORTED IN A COOLING BOX TO AN ON SITE TEST AND THAT THE 15 TO 20 MINUTES REMOVAL BEFORE TEST MUST BE ADHERED TO.

9. Procedures for Stain Removal and Sanitisation

Note: Stains defined as a "mark or discolour with something that is not easily removed". This process is applicable to soft coverings such as leather or cloth seat covers etc, hard surfaces such as tray tables, arm rests and side walls etc.

Note: Sanitisation is defined as "To make something sanitary (free of germs) as by sterilising, sanitisation, sanitation, cleaning, cleansing, clean-up – the act of making something clean.

CAUTION: THE UTILISATION OF MX14-SPT-00100 AND MX14-HVY-00401 WILL REQUIRE THAT THE OPERATOR REMOVE THE SOLUTION FROM THE AREA AFTER TREATMENT VIA WATER RINSING AND MAY REQUIRE A MECHANICAL EXTRACTION SYSTEM IF THE STAINED AREA IS OF A LARGE SURFACE AREA. A SIMPLE WET CLOTH OR SPONGE CAN BE USED IF THE STAINED AREA IS IN A SMALL LOCALISED AREA. PLEASE ENSURE INSPECTION HAS IDENTIFIED THE EXTRACTION REQUIREMENTS PRIOR TO APPLICATION OF CLEANING SOLUTION.

CAUTION: THE DECORATIVE LAMINATE SURFACE OR VARIOUS INTERIOR COMPONENTS CAN BE DAMAGED BY THE USE OF INCORRECT CLEANING MATERIALS, INCORRECT EQUIPMENT OR INCORRECT MIXING OF THE SPECIFIED CLEANING MATERIALS OR INCORRECT MIX RATIOS AS RECOMMENDED BY THE MANUFACTURER.

CAUTION: DO NOT USE ABRASIVE MATERIALS ON ANY DECORATIVE SURFACES. DO NOT USE OR SCRAPE ANY SURFACE WITH SHARP TOOLS.

CAUTION: ALWAYS UTILISE PPE EQUIPMENT AS SPECIFIED IN PARA 5 OF THIS DOCUMENT.

CAUTION: ALWAYS ENSURE THAT THE ITEMS ARE COLOUR FAST; IF UNSURE TRY ON A HIDDEN AREA FIRST BEFORE UTILISING IN AN EXPOSED OR PUBLIC AREA.

A. Materials Required

1) Cleaning solution MX14-SPT-00100.

2) Cleaning solution MX14-HVY-00401.

Note: This solution can either be purchased as already processed in a form ready to use or can be created by reducing MX14-SPT-00100 by the following method:

- a) Based on 500ml (16oz). Add 375ml (12oz) of normal, room temperature tap water to a suitable container.
- b) Then add 125ml (4oz) of MX14-SPT-00100 to the water.
- c) Seal container and gentle agitate to disperse the mix, try not to shake too much as this will create a large amount of foam and pressurise the container.
- d) After 15 minutes the solution is ready to be used. Add the following details to the container:
 - Mix ratio
 - date of mixing
 - batch number of MX14-SPT-00100

3) Cleaning solution MX14-HDS-00801.

Note: This solution can either be purchased as already processed in a form ready to use or can be created by reducing MX14-SPT-00100 by the following method:

- a) Based on 500ml (16oz). Add 437ml (14oz) of normal, room temperature tap water to a suitable container.
- b) Then add 63ml (2oz) of MX14-SPT-00100 to the water.
- c) Seal container and gentle agitate to disperse the mix, try not to shake too much as this will create a large amount of foam and pressurise the container.
- d) After 15 minutes the solution is ready to be used. Add the following details to the container:
 - Mix ratio
 - date of mixing
 - batch number of MX14-SPT-00100

4) Cleaning solution MX14-HVY-01601

Note: This solution can either be purchased as already processed in a form ready to use or can be created by reducing MX14-SPT-00100 by the following method.

- a) Based on 500ml (16oz). Add 469ml (15oz) of normal, room temperature tap water to a suitable container.
- b) Then add 31ml (1oz) of MX14-SPT-00100 to the water.
- c) Seal container and gentle agitate to disperse the mix, try not to shake too much as this will create a large amount of foam and pressurise the container.

- d) After 15 minutes the solution is ready to be used. Add the following details to the container:
 - Mix ratio
 - date of mixing
 - batch number of MX14-SPT-00100
- 5) Clean and dry paper towel, sponge.
- 6) Mechanical water extraction MX14-EXTRAC-001 as required and dependant on availability and processes followed.
- 7) Pen spot clean dispenser MX14-SPT-00100-PEN as required and dependant on availability and processes followed.

B. General Clean for Stains that are Especially Hard to Remove and Been Place for an Undetermined Time. Sanitisation of Cleaned Areas

Note: The following method has found to be effective against the following stains:

Biro Ink, Fountain pen Ink, Permanent Ink, Chocolate, Coffee, Coke, Soft Drinks, Cosmetic Foundation, Face Cream, Lipstick, Ketchup, Machine Oil, Mayonnaise, Butter, Milk, Red Wine, Liquor, Salad Oil, Shoe Polish, Steak Sauce, Soy Sauce, Suntan Lotion.

Note: Make sure that the item to be cleaned is dry and free of debris and can be accessed easily.

Note: For small stain marks it is recommended that the MX14-SPT-00100-PEN is utilised. Due to its size and ease of application it be a quicker method of combating stains within the cabin and during can be utilised during normal operating times.

Note: Utilise cleaning solution MX14-SPT-00100

- 1) Apply the cleaning solution to the stained area either directly pouring onto the stained area if position permits and by applying directly with a sponge or cloth that has been soaked with the solution. Ensure an even amount has been applied and that the stain is completely immersed in the cleaning solution. If the MX14-SPT-00100-PEN is utilised please push dab the area with the pen nib dispenser to disperse the cleaning solution into the stained area.
- 2) Leave the MX14-SPT-00100 or MX14-SPT-00100-PEN solution in place for 8 hours minimum to allow surface penetration and breakdown of the stain into a water-soluble solution.
- 3) Wash the area with clean water to remove the cleaning system, this can be accomplished by either utilising a mechanical water/solution extraction system (MX14-EXTRAC-001) or by using wet cloths and sponges to effectively "rinse out" the solution. Once the area has been rinsed, dry surfaces with a clean, dry cloth or paper towel, make sure area is completely dry before utilising item.
- 4) If the stain remains after the area has dried repeat the process.

Note: Some stains may be more persistent than others. If the stain is fading after the process above has been applied, the solutions being used are considered effective, therefore continue the previous procedural steps until area is to a suitable standard. If the stain is not fading, the stain may be such that it cannot be removed. In this instance the part being processed may need to be replaced. For further instruction refer to the process below for 'Heavily Soiled Areas'.

Note: Areas that have been cleaned utilising this method are considered sanitised and free from bacterial and microbial contamination

CAUTION: IF THIS METHOD HAS ONLY BEEN UTILISED ON A SMALL PERCENTAGE OF THE ITEMS SURFACE AREA THEN TO ENSURE FULL SURFACE BACTERIAL AND MICROBIAL CONTAMINATION REMOVAL IT IS REQUIRED THAT THE PROCESSES FOR 'GENERAL CLEAN & SANITISATION' BELOW ARE FOLLOWED.

C. General Clean for Stains That Have Been in Place for No More Than 7 Days.
Sanitisation of Cleaned Areas

Note: The following method has found to be effective against the following stains.

Chocolate, Coffee, Tea, Coke, Soft Drinks, Cosmetic Foundation, Face Cream, Lipstick, Ketchup, Machine Oil, Mayonnaise, Butter, Milk, Red Wine, Liquor, Salad Oil, Shoe Polish, Steak Sauce, Soy Sauce, Suntan Lotion, Urine.

Note: Make sure that the item to be cleaned is dry and free of debris and can be accessed easily.

Note: For small stain marks it is recommended that the MX14-SPT-00100-PEN is utilised. Due to its size and ease of application it be a quicker method of combating stains within the cabin and during can be utilised during normal operating times.

Note: Utilise cleaning solution MX14-HVY-00401 or prepare solution as described in item 9. A. 2) above.

- 1) Apply the cleaning solution to the stained area either directly pouring onto the stained area if position permits and by applying directly with a sponge or cloth that has been soaked with the solution. Ensure an even amount has been applied and that the stain is completely immersed in the cleaning solution. If the MX14-SPT-00100-PEN is utilised please push dab the area with the pen nib dispenser to disperse the cleaning solution into the stained area.
- 2) Leave the MX14-HVY-00401 or MX14-SPT-00100-PEN solution in place for 1 hour minimum to allow surface penetration and breakdown of the stain into a water soluble solution, if 1 hour is not possible due to operational requirements allow as much time as possible.
- 3) Wash the area with clean water to remove the cleaning system, this can be accomplished by either utilising a mechanical water/solution extraction system (MX14-EXTRAC-001) or by using wet cloths and sponges to effectively "rinse out" the solution. Once the area has been rinsed, dry surfaces with a clean, dry cloth or paper towel, ensure area is completely dry before utilising item.
- 4) If the stain remains after the area has dried please repeat the process no more than 3 times. If the stain remains after application identify the area to be treated in accordance with process 9. B. above.

Note: Some stains may be more persistent than others. If the stain is fading after the process above has been applied, the solutions being used are considered effective, therefore continue the previous procedural steps until area is to a suitable standard, but no more than 3 times. If the stain is not fading, the stain may be such that it cannot be removed. In this instance the part being processed may need to be replaced. For further instruction refer to the process below for 'Heavily Soiled Areas'.

Note: Areas that have been cleaned utilising this method are considered sanitised and free from bacterial and microbial contamination

CAUTION: IF THIS METHOD HAS ONLY BEEN UTILISED ON A SMALL PERCENTAGE OF THE ITEMS SURFACE AREA THEN TO ENSURE FULL SURFACE BACTERIAL AND MICROBIAL CONTAMINATION REMOVAL IT IS REQUIRED THAT THE PROCESSES FOR 'GENERAL CLEAN & SANITISATION' BELOW ARE FOLLOWED.

D. General Clean and Sanitisation of Heavily Soiled Area's

Note: The following method has found to be effective against the following stains when stains have been treated in a timely manner within 3 days.

Chocolate, Coffee, Tea, Coke, Soft Drinks, Cosmetic Foundation, Face Cream, Lipstick, Ketchup, Machine Oil, Mayonnaise, Butter, Milk, Red Wine, Liquor, Salad Oil, Shoe Polish, Steak Sauce, Soy Sauce, Suntan Lotion, Urine.

Note: Removal of surface bacteria and microbial surface contamination from areas that are very high traffic areas and are not cleaned on a regular basis or have aged surface contamination or excessive surface contamination that requires additional time to remove.

Note: Utilise cleaning solution MX14-HDS-00801 or prepare solution as described in item 9. A. 3) above.

- 1) Apply the cleaning solution to the stained or contaminated area either directly pouring onto the stained area if position permits or by applying directly with a sponge or cloth with the solution embedded on it its surface or by spraying the area from an appropriate spray bottle. Ensure an even amount has been applied and that the stain/contamination has sufficient solution to start to break down the stain or contamination, ensure that the entire surface has a mist covering of MX14-HDS-00801 solution on it. Try not to over-wet.
- 2) Leave the MX14-HDS-00801 solution in place for as long as possible to allow surface penetration and breakdown of the stain/contaminants into a water-soluble solution.
- 3) Remove the MX-HDS-00801 solution from the area but wiping the surfaces with an absorbent material, either a clean dry cloth or paper towel. Care must be taken to remove all the solution from the surfaces treated.
- 4) If there are stains remaining after the area has been dried then it is recommended to attempt procedures 9. A. or 9. B. above, when time and conditions permit. Areas that have been cleaned utilising this method are considered sanitised and free from bacterial and microbial contamination.
- 5) After completing sanitisation of areas, it is recommended that a quality control procedure be implemented on random sections of cleaned areas to ensure compliance with a national, competent authority or OEM hygiene standards to ensure that antibacterial and antimicrobial treatment has been effective. If there is a document that has instructions and procedures that complies with the required regulations, then that should be utilised at this point to ensure compliance. If there is no such document or procedure, then it is recommended that processes in Para 10. below are now be implemented to ensure that hygiene standards are complied with.

E. General Clean and Sanitisation.

Note: The following method has found to be effective against the following stains when stains have been treated in a timely manner within 24 hours

Chocolate, Coffee, Tea, Coke, Soft Drinks, Cosmetic Foundation, Face Cream, Lipstick, Ketchup, Machine Oil, Mayonnaise, Butter, Milk, Red Wine, Liquor, Salad Oil, Steak Sauce, Soy Sauce, Suntan Lotion.

Note: Removal of surface bacteria and microbial surface contamination from areas that are in high traffic areas and that have the risk of cross contamination, transfer contact risk, hard surface contamination accumulation and other areas deemed to at risk from forms of bacterial, viral or microbial accumulation.

Note: Utilise cleaning solution MX14-GDS-001601 or prepare solution as described in item 9. A. 4) above.

- 1) Apply by spraying the area from an appropriate spray bottle. Ensure an even amount has been applied and that the stain/contamination has sufficient solution to start to break down the stain or contamination, ensure that the entire surface has a mist covering of MX14-GDS-001601 solution on it. A light spray is sufficient to clean and sanitise the surfaces as required
- 2) Leaving the MX14-GDS-001601 solution in place for as long periods is not required.
- 3) Remove the MX-GDS-001601 solution from the area but wiping the surfaces with an absorbent material, either a clean dry cloth or paper towel. Care must be taken to remove all of the solution from the surfaces treated.
- 4) If there are stains remaining after the area has been dried then it is recommended to attempt procedures 9. A. or 9. B. above, when time and conditions permit. Areas that have been cleaned utilising this method are considered sanitised and free from bacterial and microbial contamination.
- 5) After completing sanitisation of areas, it is recommended that a quality control procedure be implemented on random sections of cleaned areas to ensure compliance with a national, competent authority or OEM hygiene standards to ensure that antibacterial and antimicrobial treatment has been effective. If there is a document that has instructions and procedures that complies with the required regulations, then that should be utilised at this point to ensure compliance. If there is no such document or procedure, then it is recommended that processes in Para 10. below are now be implemented to ensure that hygiene standards are complied with.

10. Post Inspection and ATP Testing of Sanitised and Cleaned Surfaces

Note: ATP (Adenosine Triphosphate) is an energy molecule found in all plant, animal and microbial cells. It fuels metabolic processes such as cellular reproduction, muscle contraction, plant photosynthesis, respiration in fungi, and fermentation in yeast. All organic matter (living or once-living) contains ATP, including food, bacteria, mold and other microorganisms.

Note: ATP testing is conducted by applying a swab to detect contamination and through analysis readings of RLU (Relative Light Units) are displayed. For recommendation of RLU count on surfaces to be considered hygienic, MX14 Aero utilises the document "Hygiene Management Guide for Environmental Surfaces" Issued by 3M Industries.

A. Materials Required

Part number	Description	Vendor	Alternative
MX14-ATP-RLUSWABS	ATP quick swap analysis collection tool	MX-14.aero for current authorized distributors	None
MX14-ATP-PORT01	Portable ATP analysis device	MX-14.aero for current authorized distributors	None

CAUTION: ITEM MX14-ATP-RLUSWABS MUST BE STORED IN A REFRIGERATED AREA FROM 2C TO 5C (35F TO 41F) PRIOR TO USE IN THE ATP HYGIENE MONITOR SYSTEM. THESE ITEMS REQUIRE REMOVAL FROM STORED AREA AT LEAST 15 TO 20 MINUTES SO AS TO ACHIEVE ROOM TEMPERATURE BEFORE TESTING AND MEASUREMENTS UNDERTAKEN. IT IS RECOMMENDED THAT THEY ARE TRANSPORTED IN A COOLING BOX TO AN ON SITE TEST AND THAT THE 15 TO 20 MINUTES REMOVAL BEFORE TEST MUST BE ADHERED TO.

CAUTION: ALWAYS ENSURE PPE IS WORN TO ENSURE THE RISK OF ANY CROSS CONTAMINATION IS KEPT TO A MINIMAL DURING ANY ATP SWAB TESTING.

B. Preparation

- 1) Switch on the ATP reader, MX14-ATP-PORT01 and allow for the auto calibration feature to operate. Deploy the "foot" of the reader and place the unit on a flat surface so that it is upright.
- 2) Remove ATP swabs from the refrigerated cooling box and allow time for them to reach room temperature, between 10 and 15 mins should be sufficient.

CAUTION: DO NOT USE SWABS DIRECT FROM COOLER AS THIS WILL AFFECT THE RLU COUNT.

C. Selection

- 1) Before testing begins you will need to select 10 random spots to be "tested" throughout the cabin a selection of tray tables, high touch areas, side walls, handles, toilet vanity units, galley surfaces and crew areas should be selected to allow an even test criteria and to ensure the broadest test results.

D. Sampling

- 1) With the swabs now at room temperature utilise the item in the following manner:
 - a) Hold the joint port of the ATP swab and unplug the cap at the unplug point.
 - b) Remove the test tube and pull out the pre moistened swab.
 - c) Gripping the test swap keep an angle of 15 to 30 degrees from sample surface, place the moist tip on sample area and zigzag the area, whilst you continue this movement of the sample area ensure that the swab end is rotated while swabbing to ensure close contact with the sample area.
 - d) A sampling area of approximately 10cm (4in) by 10cm (4in) is suitable.

E. Installation

- 1) After sampling, hold the joint port of the ATP swab and insert the swab end back into the test tube. The end face of the test tube should be aligned with the lower face of the joint port.

F. Injection

- 1) Remove the cap of the ATP swab, make sure it is gripped in an upright position, forcible squeeze the spring cap to several times to introduce the reagent into the test tube and submerge the swab tip.

G. Mixing

- 1) Hold the upper spring cap of the ATP swab and shake for 30 seconds "flicking" the test tube left and right for 5 to 10 seconds to ensure that the reagent has completely mixed with the sample.

H. Analyse

- 1) Insert the ATP swab into the test chamber of the detector which is on the pre-test interface. Close the top cover to start the test and press OK on device.

CAUTION: ENSURE THAT THE DETECTOR IS KEPT IN AN UPRIGHT POSITION DURING TEST AS ANY TILT WILL INVALIDATE THE READING AND THE UNIT WILL SIGNAL AN ERROR. IF THIS OCCURS REMOVE THE SWAB AND REINSERT AS PER ABOVE.

I. Reading

- 1) After approximately 10 seconds the unit will display a RLU (Relative Light Unit) reading, this will take the form of a digital number output. On an appropriate document record area tested and the RLU reading. Repeat these steps and record the results so you that you have 10 separate data points. Record should also show date of tests and aircraft tail number.

J. Analysis

- 1) When all data points have been recorded add up all the RLU amounts and divide by the test sample set this will then give you an average RLU count.
- 2) The hygiene document utilised determines that an average of 250 RLU units is deemed acceptable to be considered clean in accordance with that document.
- 3) If the analysis. Shows that the average RLU count is above this limit then the areas cannot be considered to conform to that standard.

CAUTION: IN THE CASE THAT THE INTERNAL REAGENT OF THE ATP SWAB GETS INTO YOUR EYES OR ONTO SKIN FLUSH AREA IMMEDIATELY WITH CLEAN FRESH WATER.

CAUTION: THE USED ATP SWABS SHOULD BE CONSIDERED A BIOHAZARD CONTAMINATED MATERIAL, ALWAYS DISPOSE OF IN A METHOD THAT COMPLIES WITH APPLICABLE NATIONAL REGULATIONS.

Note: Total time for sampling should not exceed more than 30 seconds per sample area giving a total time of 5 minutes for sampling and 5 minutes for analysis.

- K. After inspection and analysis, it is found that the areas cleaned do not conform to the requirements as indicated in this process then it is required that processes 9. E. be conducted to ensure compliance with the required regulations