

NFPA 1851, 2014 Edition

MSA Compliance Guide for MSA Cairns® Fire Helmets

MSA Cairns®
The Safety Company



WHEN YOU GO IN, WE GO IN WITH YOU.

Introduction

The National Fire Protection Association Standard NFPA 1851, “Standard for the Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Firefighting”, provides guidelines for record keeping, accessory use, cleaning, inspection, repair, and retirement of ensemble elements.

MSA has reviewed the NFPA 1851 standard carefully and noted which regulations relate to MSA Cairns Fire Helmets. The following guide will support agencies working to meet the specifications of the NFPA 1851 standard. However, MSA strongly recommends that you obtain a copy of NFPA 1851, 2014 Edition from the NFPA to ensure complete compliance.

Much of the information regarding inspection criteria, cleaning criteria, repair, and retirement of your MSA Cairns Fire Helmet is also available in the MSA Cairns Fire Helmet Operating Manual. All instruction manuals are available on www.MSAfire.com/Cairns by helmet type (traditional, modern, jetstyle or leather). Additionally, fire helmets manufactured after August 2018 also have a QR code that can be scanned to read and download the applicable manual.

MSA has made available an optional online quiz and training certificate for those organizations requiring documentation of NFPA 1851 compliance training for MSA Cairns Fire Helmets. To access MSA Cairns Fire Helmets NFPA 1851 Compliance Training, visit <http://msau.msasafety.com>.

Record Keeping

The first element of the standard to be considered is record keeping. The standard specifies that the following basic records be kept for each MSA Cairns Fire Helmet:

- ❶ Person to whom the helmet is issued
- ❷ Date and condition when issued
- ❸ Manufacturer and model name or design
- ❹ Manufacturer’s identification, lot or serial numbers
- ❺ Month and year of manufacture
- ❻ Date(s) and findings of advanced inspection(s)
- ❼ Date(s) and findings of advanced cleaning or decontamination
- ❽ Reason for advanced cleaning or decontamination and who performed cleaning or decontamination
- ❾ Date(s) of repair(s), who performed repair(s) and brief description of repair(s)
- ❿ Date of retirement
- ⓫ Date and method of disposal

Organizations should have a system for keeping these minimal records for their MSA Cairns Fire Helmets.

To aid with record keeping guidelines, MSA has created an easy-to-use Fire Helmet Tracking Form (ID 3600-46, or as located on pages 8–11 of this Guide).



Routine Cleaning

MSA Cairns Fire Helmets must be cleaned after each use, but before routine inspection, to limit exposure to possible contamination that may be present on the fire helmet after firefighting activities. Always practice safe PPE including eye protection and proper protective gloves. The Routine Cleaning procedure is referred to in NFPA 1851 as "Routine Cleaning." These instructions are referenced in the MSA Cairns Fire Helmet Operating Manual. All manuals are available on www.MSAfire.com/cairns. Specific instructions for proximity gear can be found separately (MSA P/N 10042222), also available on www.MSAfire.com. Reference these instructions as a routine cleaning guide for fire helmets after each use.

General Routine Cleaning Notes:

- Always wear protective gloves and eye protection
- Use water temperature under 105°F
- For detergent use, pH factor between 6 and 10.5
- Before cleaning the helmet shell, remove the faceshield/goggles/Bourkes/Defender Visor lens and set aside. Helmets that are not thoroughly cleaned and dried should NOT be worn.

To clean eye and face protection

- Use mild cleaning agents such as ethyl alcohol or mild detergent and water, and a soft sponge or cloth
- NEVER use abrasives, solvents, paint removers, acetone, paint or lacquer thinner, or any chlorinated organic solvents

To clean leather shells

(N6A® Houston & N5A® New Yorker Helmets)

- Use a soft sponge or cloth dampened with a solution of warm water and mild detergent to wipe the shell.
- To remove tar drippings, use a tar or adhesive remover. Use the cleaner only on the spot of tar, not on the entire surface of the fire helmet shell
- To do touchups, use a good quality enamel. NEVER use alcohol, cleaning solvents, oils, varnishes, or polishes to clean leather components

To clean fiberglass composite shells (Cairns 1010, Cairns 1044, 660C Metro®, Invader 664®, & Commando HP3® Helmets)

- Use a soft sponge or cloth dampened with a solution of warm water and mild detergent, a mild solvent such as ethyl alcohol, or a tar or adhesive remover to wipe the shell

To clean thermoplastic shells (XF1, 880 Traditional®, 360S® Structural, 360R-13, & 360R Rescue Helmets)

- Use a soft sponge or cloth dampened with a solution of warm water and mild detergent or a cleaning agent such as ethyl alcohol to wipe the shell.
- To remove light scratching and smoke stains, use Meguiars Mirror Glaze Plastic Cleaner (P/N M1708) and Clear Plastic Polish (P/N M1008). Visit www.meguiars.com to find locations where these products can be purchased.
- NEVER use abrasives, solvents, paint removers, acetone, paint or lacquer thinner, or any chlorinated organic solvents

To clean soft goods (Ear Cover [Earlap], Ratchet Cover, and Liner, Defender Visor heat Shield (If equipped))

- A second set of softgoods is recommended
- Exchange and place the soiled components in the mesh bag from the applicable MSA Soft Good Replacement Kit
- Machine wash and dry on low settings. Refer to product instructions for laundering

Leather Fire Helmet models N5A and N6A (Non-Removable Soft Goods)

- Refer to MSA Cairns Operating Manual

Leather Fire Helmet models N5A and N6A (Removable Soft Goods)

- Refer to MSA Cairns Operating manual and (select the following link for instructions on how to remove the liner/ear cover from the leather helmet: <http://www.MSASafety.com/Cairns>).

To clean the proximity bonnet and shroud

- Remove the bonnet and shroud from the helmet. Use mild soap or detergent to wash the shroud in warm soapy water.
- Rinse thoroughly with clean water.
- Air dry at room temperature.

To clean the 6" gold-coated proximity faceshield

- Clean the faceshield with mild detergent.
- Rinse with clean water and dry with a soft cloth.
- Do not use cleaner or polish on gold-coated eye/face protection. The cleaner may remove the gold coating.

Routine Inspection

After each use and after cleaning, inspect your MSA Cairns Fire Helmet. The Routine Inspection procedure is referred to in NFPA 1851 as "Routine Inspection." These instructions are referenced in the MSA Cairns Fire Helmet Operating Manual. All manuals are available on www.MSAfire.com/cairns.

Inspect MSA Cairns Fire Helmets and all helmet accessories after each use for impact, thermal and general damage. A damaged helmet must NEVER be used.

If your MSA Cairns Fire Helmet has been exposed to excessive heat, taken an impact or sustained damage, the helmet must be disassembled and have an advanced inspection performed. Use the following criteria to inspect your MSA Cairns Fire Helmet after each use:

Helmet Shell

Replace if any of these conditions exist:

Leather shell (Houston N6A® & New Yorker NSA® Helmets)

- Shell is punctured
- Rib stitching is cut or broken
- Reinforcing wire is exposed

Fiberglass composite shells (MSA Cairns 1010, MSA Cairns 1044, 660C Metro®, Invader 664®, & Commando™ HP3 Helmets)

- Cracks are longer than one inch
- Any size crack goes completely through shell material
- Soft spots are equal to or larger to than a thumb pad. Smaller soft spots require removal of the impact cap and advanced inspection.

Thermoplastic shells (XF1, 880 Traditional®, 360S, 360R-13, & Rescue 360R Helmets)

- Shell has a crack of any size, blisters or bubbles
- Shell has a dull or chalky finish (*NOTE: XF1 is offered in matte finish, which has a flat finish appearance.*)
- Reinforcing wire is exposed (880 Traditional Helmet)

Edge Trim

- Reattach if trim is separated but intact
- Replace if trim is broken or aluminum core is exposed

Reflective Trim

Replace if any of these conditions exist:

- Trim is charred, partially detached, non-reflective, or missing

Faceshield & Hardware

Replace if any of these conditions exist:

- Faceshield is blistered, bubbled, cracked, or charred
- E-ring is missing
- Shaft is not intact

Defender Visor Lens, XF1 Ocular Visor

Replace if any of these conditions exist:

- Lens is blistered, bubbled, cracked, or charred
- Quick-connect clips are broken
- Lens will not stay in stowed position and cannot be adjusted

Goggle

Replace if damage exists on:

- Ventilation and filtration areas
- Lens, frame, straps, adjustment assembly, and mounting hardware

Breakaway Tabs (models with shell release only)

Replace if any of these conditions exist:

- Any tabs are missing, bent or damaged

Chinstrap

Replace if any of these conditions exist:

- Any parts are frayed, missing or broke
- Any stitching is missing, cut, frayed, or broken
- Velcro fastener is clogged or worn out
- Quick-Release button is brittle, broken or missing
- Postman's slide is loose

Suspension Straps

Ensure that straps lie flat and pass between alignment guides.

Replace if any of these conditions exist:

- Any stitching is missing, cut or broken
- Straps have any tears or abrasions
- Straps show any brittleness
- Straps show any discoloration



Ear Cover (Earlap)

Replace if any of these conditions exist:

- Stitching is missing, cut or broken
- Nomex layer is discolored, charred or perforated
- Flannel liner is torn or seared

Headband

Replace if any of these conditions exist:

- Headband is brittle, torn, cracked, or broken
- Headband shows holes in material
- Ratchet can be opened by tugging on legs

Proximity Firefighting Bonnets & Shrouds

Replace if any of these conditions exist:

- Loss of reflectivity
- Loss of reflective coatings
- Damage or loss of functionality of bonnet to helmet attachment
- Damage or loss of functionality of shroud to helmet attachment
- Distortion of face opening, resulting in gaps around faceshield

The MSA Cairns Fire Helmet Operating Manual (MSA P/N 10043529) is available on www.MSAfire.com/Cairns.

The XF1 Operating Manual MSA Cairns® XF1 Fire Helmet is available at www.MSAfire.com/Cairns.

For specific proximity gear instructions, see MSA P/N 10042222, available on www.MSAfire.com.

Advanced Cleaning

The only difference between routine cleaning and advanced cleaning of MSA Cairns Fire Helmets in the NFPA 1851, 2014 specification is that all detachable items be removed from the helmet and cleaned separately. This requirement includes eye protection, headband liners and impact cap (if applicable).

General Advanced Cleaning Notes:

- Always wear protective gloves and eye protection
- Use water temperature under 105°F
- For detergent use, pH factor between 6 and 10.5.

Advanced cleaning must be performed yearly (or more often as needed). Advanced Cleaning procedures for MSA Cairns Fire Helmets are also available in the Maintenance Section of the Cairns Fire Helmet Owner's Guide (MSA P/N 10043529), and the MSA Cairns XF1 Care and Maintenance section of the XF1 Operating Manual, both available on www.MSAfire.com/cairns.

The following helmet models have impact caps that must be removed and cleaned: MSA Cairns 1010, MSA Cairns 1044, 660C Metro, Invader 664, Structural 360S, Rescue 360R, and Commando HP3 Helmets.

Houston N6A and New Yorker N5A Leather Fire Helmets employ impact caps, but the caps are only factory-removable and are not considered to be detachable items.

NFPA 1851, 2014, "Advanced Cleaning and Decontamination" specifies that advanced cleaning be performed only by members of the organization who have been trained to a level required by the manufacturer.

MSA Cairns Fire Helmets are designed to be simple to repair and maintain, and can be completely disassembled and reassembled by reading, understanding and following instructions in the MSA Cairns Fire Helmet Owner's Guide, and MSA Cairns XF1 Operating Manual.

Records of advanced cleaning should be maintained on MSA Cairns Fire Helmet Tracking Forms (ID 3600-46 or pages 8-11 of this Guide).

Advanced Inspection

NFPA-1851:2014 states that advanced inspection should be performed at least every 12 months, or when routine inspection indicates that a problem may exist. Advanced inspection includes disassembly of helmet components in order for each "layer" to be thoroughly evaluated. Advanced inspection should focus upon soiling, contamination, physical damage (including cracks, dents, abrasions, thermal damage, rips, tears, cuts, etc.), loss of physical integrity (ultraviolet or chemical degradation), missing hardware or components, and impact cap damage, among other criteria. To perform Advanced Inspection refer to the MSA Cairns Fire Helmet Owner's Guide (MSA P/N 10043529), and the MSA Cairns XF1 Care and Maintenance section of the XF1 Operating Manual, both available on www.MSAfire.com/cairns.

The following helmet models have impact caps that must be removed and inspected: MSA Cairns 1010, MSA Cairns 1044, 660C Metro, Invader 664, Structural 360S, Rescue 360R, and Commando HP3 Helmets.

Houston N6A and New Yorker N5A Leather Helmets employ impact caps; however, impact caps are factory-removable only and are not considered to be detachable items.

After removal of the impact cap, use the inspection guidelines shown at right.

NFPA 1851, 2014, "Advanced Inspection," specifies that advanced inspection be performed only by members of the organization who have been trained to a level required by the manufacturer.

MSA Cairns Fire Helmets are designed to be simple to repair and maintain, and can be completely disassembled, inspected and reassembled by reading, understanding and following instructions in the MSA Cairns Fire Helmet Owner's Guide. MSA does not require any additional training to complete advanced inspections.

Records of advanced inspection should be maintained on MSA Cairns Fire Helmet Tracking Forms (ID 3600-46 or pages 8-11 of this Guide).

Impact Inspection

After removal of impact cap, replace if any of these conditions exist:

- You see a *halo* effect (ring of discolored foam)
- You find cracking and/or brittleness
- You see evidence of impact
- TubeLock System is cracked, mishapen or shows any signs of damage
- Defender Visor connection or suspension tie is broken
- Impact cap liner/ring shows holes or blistering
- Ear covers are missing hook & loop
- Impact cap is cracked or deformed

Repair

Your MSA Cairns Fire Helmet is designed to be easy to maintain and repair. Repairs are necessary **ONLY** when inspection criteria are not met for your particular MSA Cairns Fire Helmet type. Replacement parts can be ordered by calling your authorized MSA Cairns Dealer or MSA Customer Service at 1-800-MSA-FIRE.

NFPA 1851, 2014, "Repair," specifies that repairs be performed only by members of the organization who have been trained to a level required by the manufacturer.

MSA Cairns Fire Helmets can be disassembled and reassembled by reading, understanding and following instructions in the MSA Cairns Fire Helmet Owner's Guide (MSA P/N 10043529), and the MSA Cairns XF1 Care and Maintenance section of the XF1 Operating Manual, both available on www.MSAfire.com/cairns. With the exception of MSA MSA Cairns Leather Fire Helmets, MSA does not require any additional training to complete repairs on most MSA Cairns Fire Helmets.

MSA Cairns Fire Leather Helmet repairs can be made **only** by MSA at the MSA Cairns Fire Helmet factory. If the following repairs are needed on a MSA Cairns Leather Helmet, the helmet must be sent to the factor for evaluation. Repair decisions are the at the discretion of the trained personnel at the MSA manufacturing facility:

- *Repaint*
- *Replace earlap*
- *Replace impact cap*
- *Replace chinstrap*
- *Replace faceshield/hardware*
- *Replace D-ring*
- *Replace suspension system*
- *Replace front holder*
- *Replace ratchet*

Records of all helmet repairs should be maintained on MSA Cairns Fire Helmet Tracking Forms. Please call MSA Customer Service at 1-877-MSA-FIRE to initiate the repair process.

Retirement of Fire Helmets

In most cases, MSA Cairns Fire Helmets can be repaired and kept in service. However, if a MSA Cairns Fire Helmet is damaged beyond repair, the helmet must be taken out of service and replaced.

In addition to fire helmet retirement due to damage, NFPA 1851 2014 Edition, specifies that the fire helmet be retired 10 years after date of manufacture. The MSA Cairns Fire Helmet Tracking Form should be used to maintain your helmet's age and repair records. Your helmet must be retired when 10 years of age is reached. **If parts have been replaced throughout the the helmet's life, the helmet must be retired when the oldest component reaches 10 years.**

Records of all helmet retirements should be maintained on MSA Cairns Fire Helmet Tracking Form (ID 3600-46 or pages 8-11 of this Guide) or on www.MSAfire.com.

Optional Online Certification

Optional quiz and training certificate are available if your organization requires documented understanding of MSA Cairns Fire Helmet NFPA 1851 compliance training. This certification can be obtained by successfully completing a short online quiz to demonstrate your knowledge of MSA Cairns Fire Helmets and NFPA 1851.

Online training is available at <https://us.msasafety.com/training/msa-u>

MSA Cairns Product Operations

All MSA Cairns Fire Helmet Instruction manuals, and operational guides can be located on one page. Visit www.msafire.com/Cairns to access all product operation information.

Helmet issued to: _____

Date issued: _____

Condition when issued: _____

Helmet Model

- | | | |
|---|--|--|
| ☐ Houston N6A® Helmet | ☐ 660C Metro® Helmet | ☐ Structural 360S® Helmet |
| ☐ New Yorker N5A® Helmet | ☐ Invader 664® Helmet | ☐ Rescue 360R-13 Helmet |
| ☐ MSA Cairns 1010 Helmet | ☐ Commando HP3® Helmet | ☐ Rescue 360R Helmet |
| ☐ MSA Cairns 1044 Helmet | ☐ 880 Traditional® Helmet | ☐ XF1 Helmet |

Other _____

Helmet serial number: _____

Manufactured on: _____

Month: _____

Year: _____

Date retired: _____

Date disposed of: _____

Disposal method: _____

Advanced Inspection

Date	Performed by	Reason
Findings		
Date	Performed by	Reason
Findings		
Date	Performed by	Reason
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Advanced Cleaning

Date	Performed by	Reason
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Repairs

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Note: This Bulletin contains only a general description of the products shown. While product uses and performance capabilities are generally described, the products shall not, under any circumstances, be used by untrained or unqualified individuals. The products shall not be used until the product instructions/user manual, which contains detailed information concerning the proper use and care of the products, including any warnings or cautions, have been thoroughly read and understood. Specifications are subject to change without prior notice.

MSA operates in over 40 countries worldwide. To find an MSA office near you, please visit [MSAsafety.com/offices](https://www.MSAfire.com/offices).