



RAC™ HEADSET

Operator's Manual

OM101116-00 REV. C



Compatible with: FAST® Maritime, FAST Ballistic High Cut,
FAST Carbon, and FAST Base Jump Helmets

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RAC HEADSET

Operator's Manual

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RAC HEADSET

Headset Features



- **3D Hearing Technology (3DHT)**

By coupling a patented ear simulator design with binaural audio and advanced audio processing the RAC Headset delivers hear-through audio that accurately preserves azimuth and elevation cues to provide situational awareness. Smooth compression algorithms eliminate "clipping."

- **FAST ARC Rail Attachment**

The RAC Headset attaches to the rear of the FAST ARC Rails leaving the top portion of the rails free for mounting accessories, such as lights, cameras, etc.

- **Noise-Cancelling Microphone**

Mounts to left or right earcup.

- **Integrated Microphone Mounting & Connection Point**

Accepts mask microphones with U-173/U standard plug.

- **Arm Articulation/Latch**

Ventilate mode allows the ear cups to be set in ready position, near, but not pressing on the user's head.

- **Single Point Gimbal Attachment**

360° adjustment instead of conventional adjustment systems.

- **On/Off/Volume/Balance Control**

Provides operator full control to personalize the listening experience to suit individual needs. Optional Speaker/Ear Plug Switch used with Inductance Driver System to switch between speaker and earplug.



■ Ear Cushions

High performance to ergonomically fit the head geometry, providing a better seal and increased noise attenuation.

■ Streamlined Stowage

Earcups rotate to the rear of helmet when not in use, creating a very low profile.

■ Quick-Release Download Connection

Helmet/headset can be disconnected from the download, allowing users to easily remove the helmet as there are no excess cables to consider.

■ Inductance Receiver Earplug

Un-tethered double-layer hearing protection provides noise attenuation in excess of typical Active Noise Reduction (ANR) equipped headsets. Earplugs are battery-free.

■ Weight

1.1 lbs (500 g) base version

1.2 lbs (545 g) with earplug option

■ Immersible

IP-67 immersible

IP-68 immersible to 3 m for short durations

■ Environmental

Tested to MIL-STD-810G

■ EMI

Tested to MIL-STD-461E

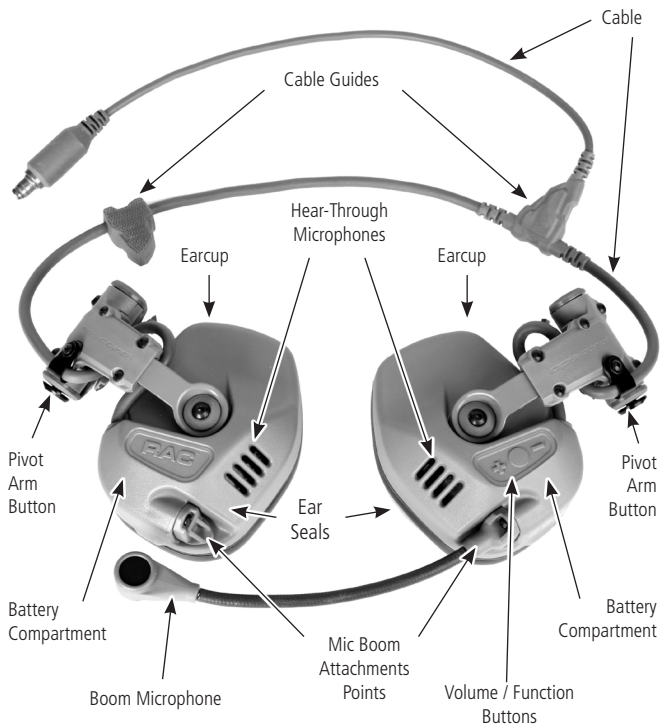
■ Export Classification

EAR-99

■ Available Colors

Tan, Black, Green, and Gray

HEADSET COMPONENTS



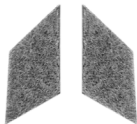
INCLUDED / OPTIONAL ITEMS

Items Included with Headset:

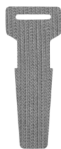
- (2) AAA Batteries (to install into earcups)
- Pile Fasteners (to attach to helmet for cable stowage)
- Cable Loop (for cable stowage)
- Utility Pouch (to store headset)



(2) AAA Batteries



Pile Fasteners



Cable Loop



Utility Pouch

Optional Items (Specify When Ordering Headset):

- Earbuds (wireless and battery-free)
- Foam tips for use with earbuds (three sizes: Standard, Slim, and Large)



Foam Tips



Earbuds

PREPARING HEADSET FOR USE

To prepare the headset for use, you will:

1. Install the AAA batteries (one in each earcup)
2. Attach the headset to the ARC Rails on the helmet
3. Attach the pile fasteners to the helmet
4. Move the microphone to the other earcup (if needed)

INSTALLING BATTERIES

Installing the Batteries:

NOTE: Also follow the applicable steps below to replace the batteries.

1. Remove the (2) AAA batteries from the packaging.
2. Pry the ear seal away from the earcup by pressing the tab at the bottom.



CAUTION: When performing Step 2, be careful not to damage the rubber seal in the groove on the underside of the earseal.

3. Insert the battery into the battery compartment making sure to align the battery so that the polarity marks (+ and -) on the battery align with the corresponding markings in the earcup battery compartment.

NOTE: Always replace batteries from both earcups as a set, do not mix-and-match batteries.



INSTALLING BATTERIES

- 4.** Reinstall the ear seal, ensuring that it is securely snapped to the earcup all around the edges.

CAUTION: Be careful not to pinch the ear seal in the groove when snapping it closed.



- 5.** Repeat Steps 2-4 to install the other battery into the other earcup.

NOTE: Remove batteries before storing RAC Headset for extended periods of time.

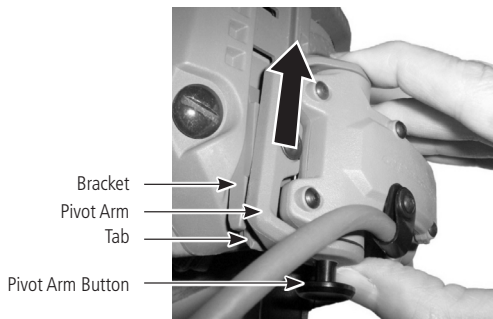
ATTACHING HEADSET TO HELMET

Attaching Headset to ARC Rails on Helmet:

NOTE: Before you begin, ensure that:

- The tab at the bottom of the headset is pointing down.
- The pivot arm button is all the way out (not pushed in) – rotate the pivot arm out to the second click.

1. On one side of the helmet, align the headset in the rail as shown and slide the bracket up into the rail until it clicks into the first slot.



2. Repeat for the other side.

NOTE: To remove the headset from the rails, lift the tab up (using a flat tool if needed) and slide the headset out, moving the pivot arm as necessary to gain access to the tab.

ATTACHING PILE FASTENERS

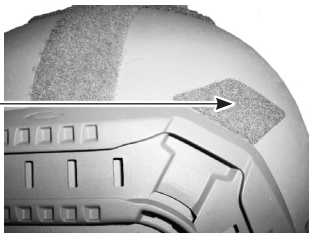
Attaching Pile Fasteners to Helmet:

Use the pile fastener pieces included with the headset to stow the cable.

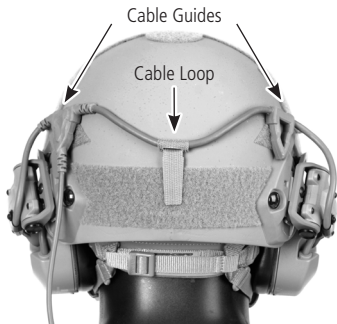
NOTE: Use the headset several times to determine the best position for the pile fasteners. Steps 1 and 2 are provided as a guideline.

1. On both sides of the helmet, attach the adhesive side of the fastener to the helmet near the ARC rail as shown.

Pile Fastener



2. Press the hook side of the cable guides to the fasteners.
3. Thread cable loop around cable and attach to the Velcro on the back of the helmet.



MOVING THE MICROPHONE

Moving Microphone to Opposite Earcup (Optional):

NOTE: To make this task easier, rotate the earcups to the stowed position behind the helmet as shown.



- 1.** Remove the screw that attaches the microphone to the earcup.



- 2.** Unplug the microphone from the earcup.



- 3.** Remove the screw that attaches the cover to the other earcup.



- 4.** Remove the cover.

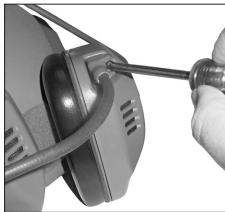


MOVING THE MICROPHONE

- 5.** Plug the microphone into the other earcup.



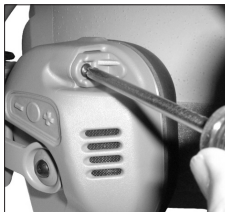
- 6.** Install the screw to attach the microphone.



- 7.** Place the cover at the attachment point on the earcup from which you removed the microphone.



- 8.** Install the screw to attach the cover.



DONNING AND DOFFING

Donning and Doffing Helmet with Headset:

Donning and doffing includes the following tasks:

- Understanding headset positions
- Basic donning
- Using ventilation mode
- Doffing

Understanding Headset Positions

The headset has four positions:



Use Mode
(earcups snug over the ears)



Ventilate Mode
(out one click)



Donning & Doffing
(out two clicks)



Stowed

(out two clicks, then rotated behind the helmet;
can also be used for donning)

DONNING AND DOFFING

Basic Donning

1. With the headset in the stowed position, don the helmet, fasten the chin strap, and tighten all straps.



2. Rotate the headset earcups over the ears.

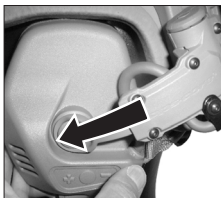


3. On both sides, press the pivot arm buttons all the way in so that the earcups enclose the ears completely and fit snugly against the head.



DONNING AND DOFFING

4. Ensure that the ears are centered within the earcups. If necessary, slide the earcups back or forward within the pivot arms to adjust the earcups over the ears.

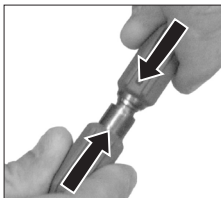


5. Adjust the microphone over the mouth (within ¼ inch) for optimal performance.



6. Align the headset cable connector to the matching alignment indicators on the adapter cable or radio PTT cable and press the connection together.

NOTE: This quick disconnect is designed with a break away force of 10lbs to prevent neck injuries in the event that the cabling becomes snagged.



DONNING AND DOFFING

Using Ventilation Mode

If heat buildup occurs around the ears, pull the earcups away from the ears to the first click.

- The increased airflow will reduce heat buildup.
- The audio will still reach the ears.



DONNING AND DOFFING

Doffing

To doff the helmet, pull the earcups away from the ears to the second click. Unfasten the chin strap, and remove the helmet (this position also permits donning).



USING WIRELESS EARBUDS

Using Wireless Earbuds with Headset (Optional):

Use the optional earbuds to increase hearing protection. The earbuds function wirelessly and contain no batteries.

- 1.** Select the largest tips to start and remove the foam tips from the packaging. Foam tip sizes are Slim, Standard, and Large (in case of fitting problems, try the next smaller size).



- 2.** Thread the foam tips onto the earbuds.

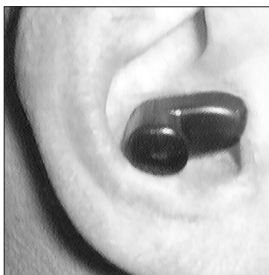


USING WIRELESS EARBUDS

- 3.** Roll the foam tip between your fingers to compress it.



- 4.** Carefully insert the foam tip into the ear, ensuring that the earbud is level in the ear as shown.

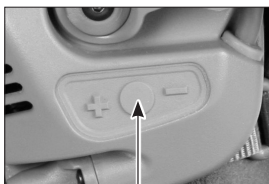


- 5.** Repeat Steps 3-4 to insert the other earbud into the other ear.

- 6.** Don the helmet; adjust and connect the headset (see Basic Donning on page 14).

- 7.** Press the center switch on the left earcup to transfer the audio from the earphone to the earbud.

NOTE: To transfer the audio back to the earphone, press the center switch again.

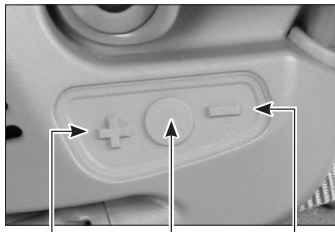


Center Switch

HEADSET FUNCTIONS

Headset Functions:

Headset functions include **Hear-Through 3DHT mode** and **balance mode**, which you can control via the + and – buttons. You can also **toggle the audio between earphones and earbuds** via the center switch (with wireless earbuds only).



+ Button

Center Switch

- Button

Hear-Through 3D Hearing Technology (3DHT) Mode

The Hear-Through 3D Hearing Technology (3DHT) function broadcasts ambient sounds through the earcups for increased situational awareness. The radio/intercom communications function continues with hear-through turned on or off.

To turn Hear-Through 3DHT ON: Press and hold the + and – buttons together once. The headset emits three ascending tones, and the hear-through function activates.

To turn Hear-Through 3DHT OFF: Press and hold the + and – buttons together for two seconds. The headset emits three descending tones, and the hear-through function ceases.

To increase Hear-Through 3DHT volume: Press the + button one or more times. The headset emits a short tone that gets louder as the volume increases.

To decrease Hear-Through 3DHT volume: Press the – button one or more times. The headset emits a long tone that gets softer as the volume decreases.

NOTE: After two hours of Hear-Through 3DHT ON operation without any button presses, the headset emits a shutoff tone, and Hear-Through 3DHT function ceases. To reset the two-hour counter during the shutoff tone, press the + or – button. Otherwise, press the + and – buttons together once to return to Hear-Through 3DHT mode.

HEADSET FUNCTIONS

Balance Mode

Balance mode allows you to personalize the balance between both ears to compensate for differences in your hearing.

To enter balance mode: While the Hear-Through 3DHT is turned on, press the + and – buttons together twice. The headset will emit a constant tone that will increase in volume as described below.

To increase volume to left earphone: Press the + button one or more times; volume will increase with each press.

To increase volume to right earphone: Press the – button one or more times; volume will increase with each press.

To exit balance mode: Press the + and – buttons together once (or wait approximately five seconds without adjusting the balance). The headset will return to Hear-Through 3DHT mode.

Switching Between Earphones and Earbuds

Press the center switch to toggle the headset audio between the earphones and the earbuds.

NOTE: The feature only works with headsets which have been factory configured for optional wireless earbuds. Headsets without this option cannot be upgraded to allow the use of the wireless earbuds.

MAINTENANCE

Maintaining Your RAC Headset:

Simple maintenance will help keep the headset in good operating condition. Complete the following tasks as necessary.

Inspection

Inspect the ear seals regularly to ensure that they have no cracks, which can lead to sound leakage.

Cleaning

1. Clean the headset regularly with a soft cloth dampened with soap and water.
2. Dry thoroughly with a clean cloth.

Replacing the Batteries

When the batteries are low, the headset will emit a four-note warning tone. Replace batteries within two hours. See *Installing Batteries* for details.

NOTE: When the batteries fail, radio and intercom functions continue to work, as do the earbuds. However, the hear-through function ceases. Replace the batteries to restore the hear-through function. Always replace batteries from both earcups as a set, do not mix-and-match batteries.

Recommended: When replacing batteries, inspect the rubber ring around the earseal plate, and wipe away any dust or debris around the groove.

Storage

NOTE: When storing the headset, ensure that the ear seals are not compressed. Long-term compression can deform the ear seals, causing loss of sound attenuation.

- 1.** Remove the batteries before you store the headset.
- 2.** Enclose the headset in the pouch.
- 3.** Store the headset in a cool, dry area. Do not store it in an area prone to excessive heat (for example, near a windshield or a window).

OPERATOR NOTES

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.



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