

USER GUIDE

Mach 1
Mach 1.C
Mach 1.S



LIGHTSPEED

www.lightspeedaviation.com

800.332.2421



Features Overview

- *Cell/satellite phone interface with patch cord*
- *Music input with patch cord*
- *Up To 40dB Passive noise attenuation*
- *Stereo/Mono switchable*
- *Total head-worn weight of 11 grams (0.38 oz)*
- *4 types of multi-use ear tips
(enough tips for several months of flying)*
- *Noise canceling electret microphone*
- *Adjustable Mic Gain*
- *Headset case*
- *5-year warranty*



Getting Started: Ear Tip Selection

The LightSPEED Mach 1 (M1) headset comes equipped Standard with Blue MATRIX™ 'No Roll' foam ear tips and white triple - flange silicone to accommodate most pilots' needs for comfort and attenuation. Custom fitted ear molds are recommended for the best noise attenuation, sound quality, and comfort. The foam ear tips provide the best attenuation while the silicone tips are better suited for frequent removal and insertion.

Custom Ear Mold

We recommend custom ear molds for your Mach 1 headset. LightSPEED Aviation, and our partner Sensaphonics Hearing Conversation, partner to offer a headset with a fit unique to your ear canals. Sensaphonics sound-isolating custom ear plugs are uncompromising. Working from impressions taken by an audiologist, our in-house artisans create precision earphones that ensure perfect fit, maximum comfort and full isolation. Molds are custom molded using soft gel silicone, the only ear molds on the market using this material. That means a better seal and a more comfortable fit. The point of all this is to provide hearing protection for pilots. By isolating the ear from unwanted sound, custom ear Molds allow our pilots to hear only what they want or need to hear with exceptional sound quality.



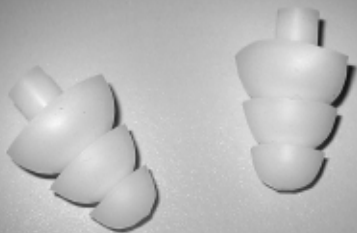
Fitting the Ear Tips

Before inserting the ear tips, attach lapel clip to clothing. Do not force the ear tip into the ear canal. Using ear tips correctly requires a little practice. The M1 boom is designed to be worn on the left side. Start with the ear tip that is not connected to the boom. Be sure your hands are clean and that the tiny tube inside the ear tip does not extend beyond the fitting material.

Foam Ear Tips

The blue MATRIX™ foam is a 'no roll' foam. Rolling or compressing it prior to inserting into the ear canal is not necessary. To fit it into the ear canal, simply follow the instructions on the previous page 'Fitting The Ear Tips'. If working with a slow recovery roll form, hold the foam with the thumb, pointer and middle finger. Roll gently and evenly back and forth to compress the foam into a dense cylinder around the imbedded tube. Fit the left ear first, reach around the back of the head with the right hand (reverse hand placement if starting with the right ear), take hold of the top of the ear and gently pull towards the back of your head to optimize ear canal clearance. With the ear tip in your left hand, insert the compressed foam into the ear canal, release of the top of the ear with the right hand. Hold the ear tip in place for 5-10 seconds while the foam fully expands to block outside noise. If placed correctly,

the ear tip adapter should be flush with the ear canal entrance. Very little ear tip material should be visible. Repeat the steps on the other side using the ear tip connected to the boom assembly. Position the microphone boom at nose level; it will "drop" to proper level when released. After inserting tip, hold it and the boom in place for about 15 seconds until the foam fully expands. When the boom is released it should be off center to the mouth approximately 1/4 inch from the lips.



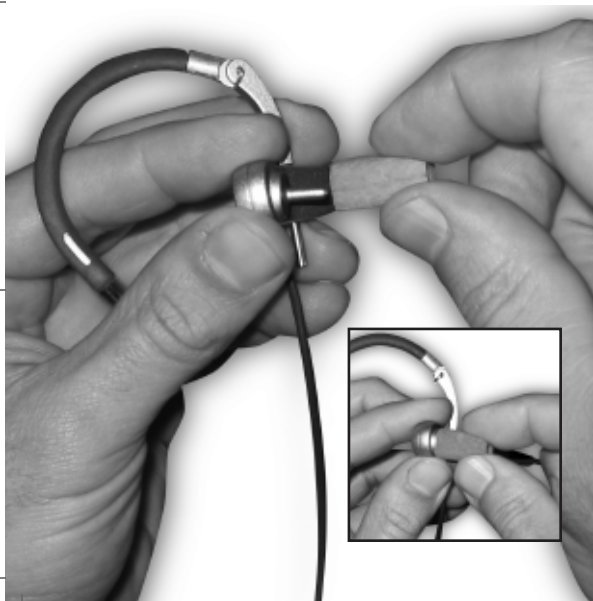
Silicone Ear Tips

If the ear tips are frequently removed and re-inserted, the triple flange silicone ear tips may be the best selection for the user. If fitting the left ear first, reach around the back of the head with the right hand (reverse hand placement if starting with the right ear), take hold of the top of the ear and gently pull towards the back of your head to optimize ear canal clearance. With the ear tip in your left hand, insert the triple flange ear tip into the ear canal, let go of the top of the ear with the right hand and release the ear tip. If placed correctly, the ear tip adapter should be flush with the ear canal entrance. Very little ear tip material should be visible. Repeat the steps on the other side using the ear tip connected to the boom assembly. Position the microphone boom at nose level; it will "drop" to proper level when released. When the boom is released it should be off center to the mouth at approximately 1/4 inch from the lips.



Ear Loop Placement

While inserting the ear tip, the ear loop should be hinged in the 'up' position. Once the ear tip is fitted and the mic positioned, the ear loop can be hinged down behind the ear.



Changing Ear Tips

Use clean hands. Grasp the speaker assembly firmly with one hand and with the other hand, pull the ear tip off with a twist. The triple flange ear tips will easily slide onto the post. The foam ear tips require a little effort and technique. Hold the foam ear tip on the end that goes into the ear and squeeze it flat so that the throat of the hard plastic tube that extends from the ear tip opens up slightly. Firmly slide tube onto the speaker assembly's post. It is not necessary to slide the plastic tube all the way to the base of the post.



Disk Battery

Mic Gain

Note: For best results we recommend Eveready Energizer ECR2032 3 Volt Lithium batteries

Replacing The Disk Battery

A disk battery is required for powering the cell phone/aux audio features only. This battery is located in the back of the control box, under the battery door cover. To remove the disk battery, using a fingernail, or small jewelry type screwdriver, gently lift on the bottom edge of the battery until it leaves out of it's holder. To insert the new battery angle the left side at about 45 degrees, slid into place making sure not to crush the left side contacts, then snap in the right side.

Mic Gain

The M1 comes with an adjustable mic gain. It is located just below and to the left of the disk battery. With a small Philips head screwdriver you can increase the mic gain by turning the screw clockwise. You can decrease the mic gain by turning the gain counter clockwise.

Dip Switches

The dip switches are where you set your Mono/Stereo, and your Comm Priority. Switch 3 is the Mono/Stereo switch. It should be set according to your intercom type. Headset is shipped preset to "Mono" and will distribute audio to both ears if used with a mono intercom. If using a mono intercom with the stereo setting, the audio will only come through to one ear. Change the setting to stereo if using a stereo intercom. To change the setting, move dip switch number 3 down, or to the OFF position. When using cell/satellite phone or music interface, audio will come through to both ears regardless of selection of mono or stereo. Dip switch 2 is the Comm Priority setting. It comes set in the ON position meaning that all Comm. Audio takes priority over AUX audio. Any radio communications will cause the AUX audio to mute down about 70% so that you may hear the

transmission. This feature can be turned OFF by moving dip switch number 2 down, or to the OFF position. Dip switch 1 is Power, and should be left in the ON position unless instructed otherwise by a factory authorized service technician. NOTE: A change in a dip switch setting only takes effect after power is recycled. Do this by turning the AUX ON/OFF off then back on again.

Dip Switch:
1= Power
2= Com Priority
3= Stereo/Mono





Cell/Satellite Phone and Music Interface

The Mach 1 headset is equipped with a cell phone and music interface. Select the appropriate patch cord provided and insert one end into the jack on the top of control box. (One disk battery included) is required to use these features. The cords are labeled, indicating their use. Connect the other end to the phone or music device; slide the Aux On/Off switch on the opposite side of the battery box to the ON position. Adjust the volume on the auxiliary device as needed.

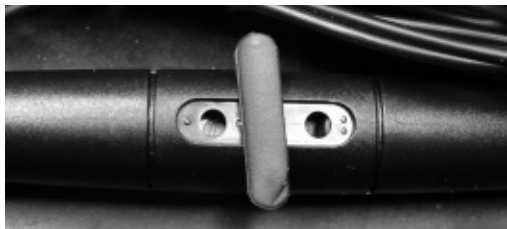


*Comm
Isolate
Button*

Comm Isolate Button

By pressing the Comm isolated button your cell/satallite phone call is isolatd from the intercom system. All outgoing transmissions from your mic will be isolated from the intercom. By pressing the button again you are reactivated into the intercom. Note: An audible tone indicates when you turn 'on' Comm isolate and again when you turn 'off' Comm isolate.

For Mach 1.S users

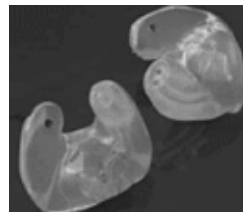


Potentiometer Operations

- Mic gain adjustment
 - a. Clockwise to increase
- Headset volume adjustment
 - a. Clockwise to increase

For Mach 1.C users

Mach1.C Headset with Custom Ear Mold



The purchase of your M1.C headset includes custom ear molds. To get your custom ear molds made:

- 1) Call us with the S/N of your Mach 1.C headset
- 2) We will direct you to an audiologist in your area
- 3) You will go to the audiologist for impressions
- 4) The audiologist will send the impressions to the lab
- 5) The lab ships molds back to audiologist
- 6) You follow up with the audiologist to pick up molds

FAQ's

Problem: Ear tips do not deaden sound.

Solution: This is likely the result of improper ear tip selection or insertion. Read the Fitting the Ear Tips section.

Problem: Only one earphone seems to work.

Solution: Change mono/stereo switch position. See Mono/Stereo Switch section. Make sure the ear tip is not clogged with debris.

Problem: Sound is too loud or too soft.

Solution: Due to both the high fidelity and proximity of the speakers, the audio volume might need to be adjusted to balance the M1 with other headsets. First lower the volume wheel on the control module to provide comfortable listening levels. Make additional adjustments to the intercom or radio to increase or decrease the overall system audio volume.

Problem: Mic is weak or intermittent.

Solution: Since the M1 uses a special noise canceling element, it is important to get proper and consistent placement. Since this is typically a problem associated with either mic positioning or the intercom/radio squelch setting, the mic element housing should be positioned within 1/8 - 1/4 inches from the mouth, off-center on the boom side, not directly in front of the mouth. Properly placed, you can now adjust the squelch setting to get optimal performance. Adjust the squelch control to minimum (open mic) and begin to turn it up. When the ambient noise level drops away, speak in a normal voice and you should break through and be clear and audible. If that does not resolve issue, return unit to manufacturer for repair. Call **800-332-2421** for shipping instructions.

Ordering Replacement Ear Tips

Ear or custom molds are available in three different styles and may be ordered at **www.lightspeedaviation.com** or by calling **1-800-332-2421**.

LightSPEED Aviation

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