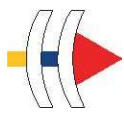


**Gebrauchsanleitung  
Mode d'emploi  
Instructions**

 **omara**



# 1. PRODUCT

## 1.1. PRODUCT DESCRIPTION

OMARA has been developed for pilots and flying crew members in order to ensure the following in very noisy environments (military jets, helicopters, etc.):

- Hearing and understanding of acoustic alarms in the cockpit.*
- Clear perception of all messages.*
- Protection against noise and long-term preservation of hearing.*
- Stress reduction due to clear perception.*
- Ergonomic design thanks to lightness and wearing comfort.*

## 1.2. PATENT

A patent application has been filed.  
(Patent application n° 2005 11 38/5.)

## 1.3. PRODUCT COMPONENTS

The components of the communication system are:

- Two individual custom made soft (silicone) earplugs with integrated filters and receivers (picture 1): The filters protect the ear against damaging noise without reducing the comprehensibility of speech. In addition, they allow the equalization of the air pressure to compensate for the effect of altitude and the aeration of the auditory canal for maximum comfort. The receiver amplifies the intercom messages.*
- Cable and connector to*

*the helmet (picture 1).*

- Integrated helmet set with connector and cables for connecting the Intercom (picture 2).*



Picture 1



Picture 2

## Storage box with cleaning and drying materials

Comprising:

▶ Storage box for the correct storage of the system after use (picture 3).

- . OtoEase for cleaning and disinfecting the system (picture 4).
- . Drying capsules for drying the earplugs after use (picture 4).
- . Transport protection cover (picture 5).
- . Pump for the air-blower test (picture 3)



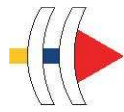
Picture 3



Picture 4



Picture 5



## 2. INSTRUCTIONS FOR USE

### 2.1. FITTING THE SYSTEM

Place the connection cables behind the neck.

Pick up the right earplug (with **the red reference**) with the right hand and place it in the right ear, pushing the ear backwards and downwards. Repeat the procedure for the left ear (blue reference)(picture 6).

Put on the helmet.



Picture 6

### 2.2. CONNECTIONS TO THE HELMET

Plug in the connector to the helmet (picture 7).



Picture 7

2. Attach the cables to the helmet with the Velcro tapes (picture 8).



Picture 8

### 2.3. ADJUSTMENT OF THE HGU-55 HELMET EARPIECE/OMARA

The substantial diameter of the OMARA coaxial cables has been designed to ensure mechanical strength and optimum transmission quality. As a result, particular care must be taken when positioning the earpieces within the pilot's helmet in order to optimize wearing comfort. OMARA can be adapted on all kind of helmets

**The position of the earpieces can be adjusted in 3 ways**

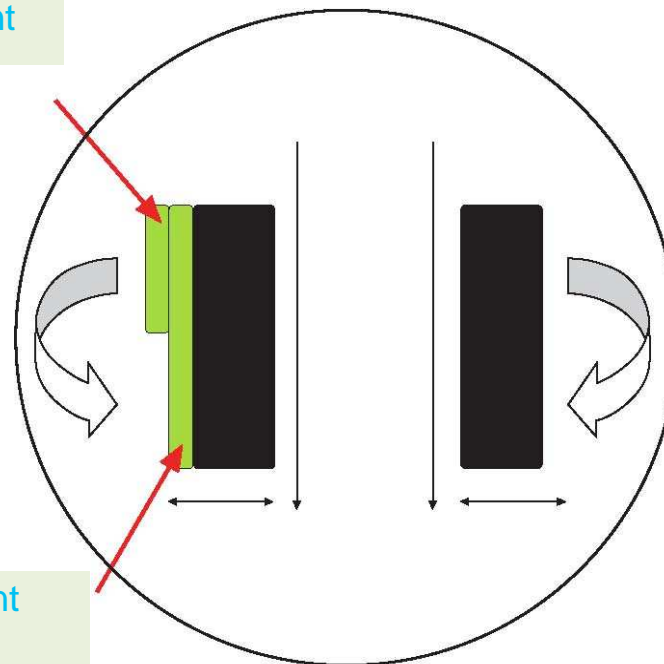


Picture 9

- Height adjustment
- Sideways adjustment
- The angular position

The earpieces are attached by Velcro tape, which allows the height to be adjusted. In addition, it is possible to insert **pads** that provide sideways adjustment (picture 9).

Pad for the angular adjustment



Pad for sideways adjustment (picture 9)

- ▶ *Cutting the pad for lateral adjustment (picture 10).*
- ▶ *Positioning the pad for the angular adjustment (picture 11).*



With the earpiece correctly positioned, there is space at the lower end for the cable to pass through..

As OMARA ensures good noise protection, it is not necessary for the helmet earpieces to be applied too tightly against the ears . Pads do not have to be used.

#### **Selection of the earpiece foam for the helmet**

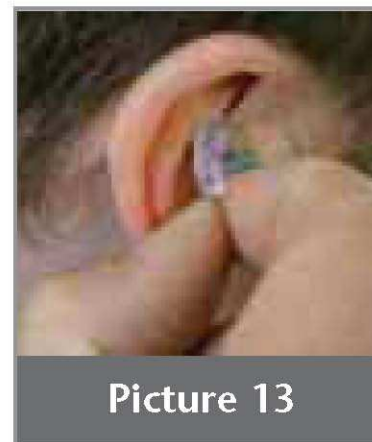


It exists different types of foam. Completely uniform or with a projection at the lower end (picture 12).

The latter must be used with OMARA, because the projection is exactly at the position where the cable runs, and this can cause pressure points and therefore some discomfort.

## 2.4. REMOVING THE SYSTEM

1. Unplug the helmet connector from the Intercom.
2. Undo the Velcro tapes on the helmet.
3. Take off the helmet.
4. Remove the earplugs from the ears (picture 13).



Picture 13

**Caution:** Never pull out the earplugs by the cables.



## 3. CHECKING THE JRENUM FILTER, THE AIR-VENT TOGETHER WITH THE HF3 FILTER ON THE SB MODEL

### 3.1. PURPOSE OF THIS CHECK

To make sure that the OMARA decompression air-vent (see picture 14) is not blocked. The green Jrenum acoustic filter is located in the air-vent. The HF3 filter is integrated in the earplug.

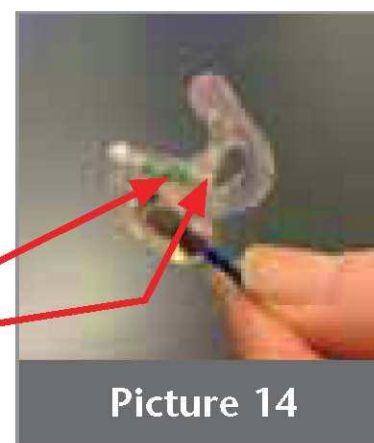
### 3.2. ROLE OF THE FILTERS AND OF THE AIR-VENT

The air-vent has a very important double function.

- *The first function is to enable the air pressure between the outside of the OMARA ear knob and the inside of the auditory canal to be equalised.*

*N.B.: If this filter is blocked, an uncomfortable feeling of pressure or pain may occur in the ear during flight. WARNING: Complete obstruction of the filter can cause damage to the eardrum.*

- *The second function is to enable voice alarms in the cockpit to be heard while at the same time protecting the pilot's hearing by means of the green Jrenum filter.*



Picture 14

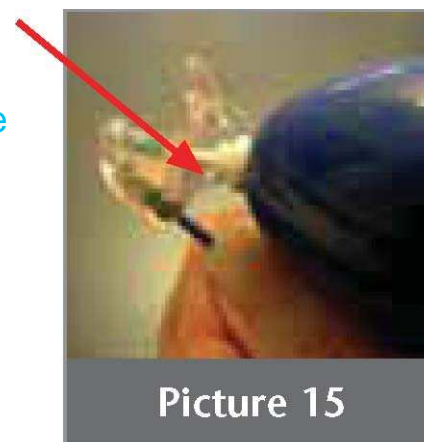
Decompression vent,  
Green Jrenum acoustic filter

### 3.3. HOW TO PROCEED

The pump must be used before each flight. Air is blown into the orifice of the air-vent to check whether it passes freely through the filters, through both Jrenum and HF3 filters. (picture 15)

This free passage of air is confirmed by the audible noise that makes when passing through the filters “Pschiiii ...”

If there is any doubt as to whether the filters and the air-vent are working properly (discomfort or pain when flying), have your OMARA checked by the people in charge of the flight equipment or send it back the OMARA Team for repair.



### 3.4. PRECAUTIONS TO BE TAKEN WITH THE JRENUM FILTER AND THE HF 3 FILTER (SB Model)

**N.B.:** Never insert liquid inside the air-vent, not even the OtoEase cleaning liquid supplied with OMARA. To use OtoEase for cleaning, pour some product onto a tissue and clean the ear knob, making sure that no liquid enters the orifices of the air-vent or of the earpiece output.

Do not touch the Jrenum filter with any sharp objects (such as a paper clip)

On the **SB Model**, remove and replace the **HF 3 filter**, using the appropriate tool if there is any doubt if the HF 3 filter is perfectly free of sweat or earwax.



## 4. CLEANING AND STORAGE

### 4.1. CLEANING

To ensure that the system working correctly, the OMARA earplugs must be cleaned after each use:

*Remove any earwax from the opening of the earplug (picture 16). If necessary remove and replace the **HF3 filter** on the **SB model**.*

*Then place a few drops of OtoEase on a tissue-paper and carefully rub and clean the earplugs (picture 17).*



Picture 16



Picture 17

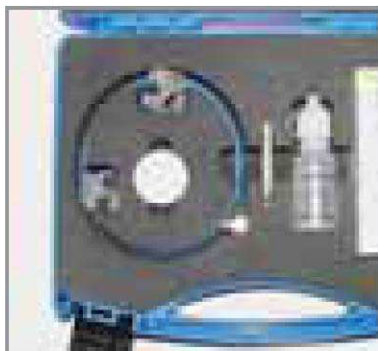
**Caution:** Never clean with water or any other non recommended product.

### 4.2. STORAGE AND DRYING OF THE SYSTEM

In order to ensure that the system works correctly, the earplugs (including the connecting cables) must be stored and dried in the storage box.

*Place the earplugs in the appropriate place in the storage box (picture 18).*

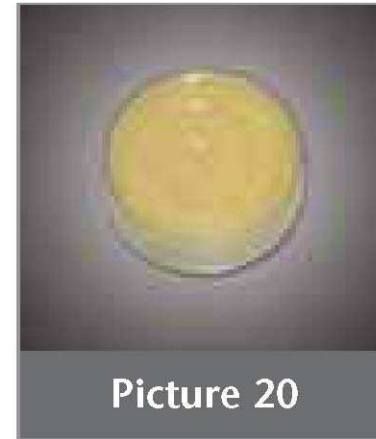
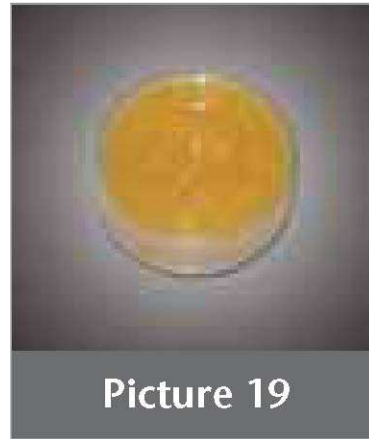
*Ensure that there are no knots in the cables*



Picture 18



Check the color of the drying capsules: Yellow =  
Yellow = OK (picture 19)  
White = replace the drying capsule (picture 20)



## **5. GUARANTEE**

**The guarantee is valid under the following conditions:**

The system is cleaned, dried and stored as described under point 4.

**. The following is excluded from the guarantee :**

Damage caused by improper or careless use (being dropped, etc.)

Damage caused by a failure to clean or to dry the device properly

Damage caused by a failure to check the filters

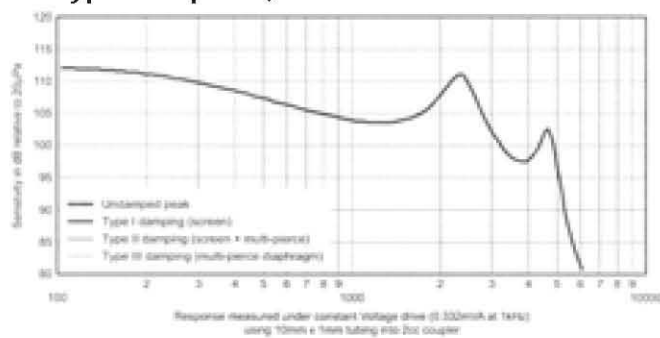
Transport without using the protection cover..



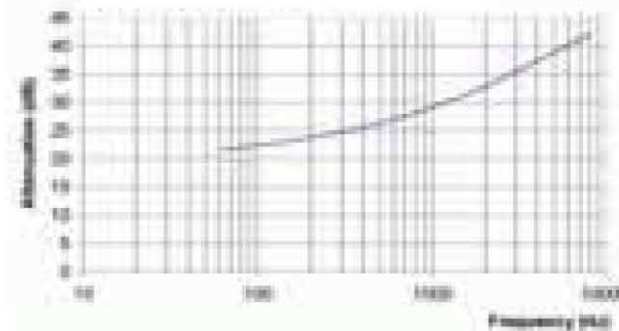
## 6. TECHNICAL DATA

Components	Specifications	Value	Unit
Cable	<ul style="list-style-type: none"> <li>• 50 <math>\Omega</math> radiofrequency coaxial cable</li> <li>• Center conductor</li> <li>• Dielectric: cellular PE</li> <li>• Outer conductor</li> <li>• Halogen-free crosslinked jacket</li> <li>• Minimum static bending radius</li> <li>• Minimum dynamic bending radius</li> <li>• Weight</li> </ul>	0.305	mm
		max. 1.35	mm
		max. 1.84	mm
		5	mm
		20	mm
		6.5	g/m
Connector	<ul style="list-style-type: none"> <li>• Coaxial cable connector SMB</li> <li>• Impedance</li> <li>• Weight</li> <li>• Minimum return loss</li> </ul>	50	$\Omega$
		3.8	g
		22	dB
Receiver	<ul style="list-style-type: none"> <li>• High efficiency and low distortion</li> <li>• Maximum power output</li> <li>• Nominal sensitivity at 500 Hz</li> <li>• Shock resistance (typical) <ul style="list-style-type: none"> <li>– Height</li> <li>– Acceleration</li> </ul> </li> <li>• Sensitivity range</li> </ul>	128	dB SPL
		107	dB SPL
		196	cm
		20'000	g
		$\pm 3$	dB
Filter	<ul style="list-style-type: none"> <li>• Selective protection against noise</li> <li>• Attenuation (EN 352-2 &amp; EN 24869-1) <ul style="list-style-type: none"> <li>• 63 Hz</li> <li>• 125 Hz</li> <li>• 500 Hz</li> <li>• 8000 Hz</li> </ul> </li> </ul>	21.7	dB
		22.8	dB
		26.4	dB
		42.2	dB
Earplug	<ul style="list-style-type: none"> <li>• Customized to user</li> <li>• Material</li> </ul>	(Amplifon-approved) HQ silicone basis	(Amplifon-approved) HQ silicone basis
Complete system	<ul style="list-style-type: none"> <li>• Operating temperature range</li> <li>• Storage temperature range</li> <li>• Traction resistance (reference samples)</li> </ul>	-17, +60	$^{\circ}$ C
		-20, +60	$^{\circ}$ C
		13	N

Typical response, nominal drive



Filter characteristics





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