

EMTEC LABORATORIES - CUSTOM MADE NOISEBREAKER EAR DEFENDERS

EMTEC LABORATORIES (is situated at Downton, near Shrewsbury in Shropshire. The company was founded by Alec Sneyd F.S.H.A.A. who developed and refined personalised ear defenders known as "NOISEBREAKERS." For the last twenty years these have been regarded in the industry as market leaders in hearing protection. Emtec Laboratories is responsible not only for manufacturing, but also, direct marketing, aided by a network of agents, nationwide and international.

We have a national client base which includes many big name companies, such as Guinness, British Aerospace, Shell, Corus, Kelloggs, Polestar Group and numerous police forces; and we are looking to increase our market penetration throughout the UK.

The fact that NOISEBREAKERS are individually tailored has a number of advantages; namely they are comfortable and therefore achieve a high level of acceptance by the wearer, in contrast to the conventional disposable plugs and ear muffs. Also they allow the wearer to communicate easily, but at the same time afford excellent protection.



It has been said that the ideal personal hearing protection should:

- 1 Allow the wearer to hear conversation, the telephone, radio, and essential sounds, whilst automatically providing protection against dangerous or distressing noise;
- 2 Be custom made from a soft grade material to give hygienic comfort over prolonged periods
- 3 Be vented to minimise the 'plugged up' feeling, or the sensation of isolation;

The NOISEBREAKER has such desired features plus

- 1 No moving parts to wear out or injure the ear;
- 2 Can be conveniently carried in pocket or purse at all times;
- 3 Can be worn under headphones or helmets;
- 4 Virtually indestructible, and being easily cleaned and non-disposable will (with reasonable care) be very cost effective, as they have an expected life of approximately seven years.

Such ear defenders are ideal for all kinds of users i.e. people in factories, oil rigs, laboratories, offices, the Armed Forces, all types of transportation, heavy plant and agriculture etc. along with sportsmen, pop enthusiasts and in fact anyone who finds themselves in a noisy environment and who wishes to converse in normal speech whilst protecting their hearing.

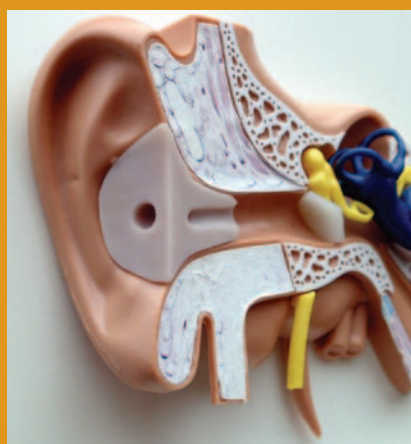
Noisebreaker Product Description

The Emtec NOISEBREAKER is a personally moulded and vented earplug. The NOISEBREAKER carries BS 5108 and has been accredited with the CE mark. It is a silicone rubber moulding which is moulded to each individual ear. The plug incorporates a central drilled channel in which a filter is placed which allows pressure equalisation.

The acoustic filter attenuates all sounds going to the ear but attenuates more in the mid-band range (approximately 1kHz-6kHz). Because of the through hole in the "ear plug" a person is not completely isolated from his surroundings and conversations and warning signals may be heard.

You should gradually get used to wearing the Noisebreakers - wear them for 1 hour +, the first time, and gradually build up how long you wear them for; after about a week you should be able to wear them all day.

To clean the Noisebreakers, simply wash them in mild soapy water.



Left



Right

To insert the Noisebreakers :

1. Place the ear canal part (with the hole in) just into your ear canal, with the top of the Noisebreaker twisted forward of your ear, figure 1
2. Twist the top of the Noisebreaker backwards, figure 2
3. Continue twisting the top of the Noisebreaker until its top sits under the helix part of the ear, figure 3



Durham Constabulary
POLICY ADVISORY GROUP
Hearing Protection

Police Scientific Development Branch (PSDB)

Emtec Laboratories Noisebreakers
125-8000 Hz (all frequencies) overall attenuation performance = 28.3 db

Advantages of EMTEC Noisebreakers

- 1) Individual fit, comfortable and with a 100% efficiency all of the time.
- 2) Allows individuals to communicate (via an acoustic filter fitted inside the protector) and be protected at the same time.
- 3) Has the ability to be worn under headphones or helmets.
- 4) Has no moving parts to wear out and is virtually indestructible.
- 5) Is extremely cost effective against other products. Life expectancy is 7 years.
- 6) Sits below flush of Ear Lobe and does not impede use of firearms. Allows more flexibility/ accuracy when quick response of aim is needed.
- 7) Easy to carry in pocket as they are small/compact and should be readily available for use (as the situation demands).



THE 'REAL WORLD' ATTENUATION OF HEARING PROTECTORS
(testing both muffs and disposable ear plugs)

This research does not apply to custom moulded earplugs, which are equally as effective in the real world as they are in the laboratory.

“It has long been felt that due to a number of variables between the industrial (real world) situation and the test conditions that workers do not get the level of protection suggested by the standard data test.

The Health and Safety Executive sponsored this research project ...to establish the level of protection actually achieved by workers wearing such protectors in industry and to compare these 'real world' results with the test data.”

“The testing of hearing protection in laboratory conditions tends to give an unrealistically high estimate of their performance as, the subjects are usually familiar with the objectives of the test and are given precise instructions on the fitting of the device. Also the protector is usually new, and the subjects do not wear spectacles, and care is taken to ensure that beards or long hair do not impair the effectiveness of the device.”

A number of muffs and disposable ear plugs were tested and “in general, there is a degradation in mean attenuation and an increase in the standard deviation associated with all the protectors when the 'field' data is compared with that quoted by the manufacturers.”

The report concluded that for muffs “the degradation in performance is slightly more severe at the higher frequencies and that the average overall reduction is about 5 dB(A),” and that “for plugs the degradation in performance is more uniform across the whole range of frequencies giving a reduction in overall attenuation of approximately 7-15 dB(A).”

There are several reasons to explain the poorer protection in the real world of hearing protectors, including,

- * Attitude and education of the workforce, (“almost certainly due to improper use of the plugs in terms of inadequate fitting.”)
- * “the use of spectacles impairs the effectiveness of muffs”

The report concluded that “The results of this study confirm the often stated belief that the field performance of hearing protectors is markedly less than that which is predicted from the manufacturer's specification of their performance.”



SOME NOISEBREAKER USERS.

AGGREGATE INDUSTRIES
AIRBUS UK
ALCAN PACKAGING
ALLIED BREWERIES
AMBULANCE SERVICE
ANGLESEY ALUMINIUM
BALMORAL ESTATE
BASS BREWERS LTD
BP
Bae SYSTEMS PLC
BRITISH ROLL MAKERS
BRADFORD TELEGRAPH
BULMERS
CALEDONIAN PAPER
CARLSBERG TETLEY
CHEVRONTEXACO
CEMENTATION MINING
CENTRAL BANK OF IRELAND
COCA COLA
CONOCOPHILLIPS
CONTINENTAL CANS LTD
CORUS
COURTAULDS PLC
CUMMINS ENGINES
DAILY MAIL
EXXONMOBIL
E.M.C. LTD
FRAM FILTERS LTD
FORESTRY COMMISSION
FRANKS INTERNATIONAL
G.E. AIRCRAFT ENGINES
GEORGIA PACIFIC
G.K.N.
GLAXOSMITHKLINE
GUERNSEY ELECTRICITY CO.
GUINNESS PLC
HANSON BRICK
HEIDELBERG LTD
HOLLAND & HOLLAND
IRISH RAIL
IRISH TIMES
J.C.B. TRANSMISSIONS
KELLOGGS
KINGS TROOP R.H.A. (M.O.D.)
LANSING LINDE
LIVERPOOL POST & ECHO
MARLEY BUILDING MATERIALS
MEB

MIRROR NEWS GROUP
MORGAN VINCI
NESTLE-ROWNTREE
NEWS INTERNATIONAL PLC
PERKINS ENGINES
PHILLIPS COMPONENTS
POLESTAR GROUP
POWERGEN
QUEBECOR
R.A.F.
REXAM PACKAGING
ROLLS ROYCE
ROYAL MINT
ROYAL ORDNANCE
ROYAL SCHOOL of MILITARY ENGINEERING
S.A.S. METALS
SANDWELL B.C.
SCHLUMBERGER
SHELL (U.K.) LTD
SCOTTISH POWER
SCOTSMAN PUBLICATIONS LTD
STENA LINE
ST IVES PLC
TARMAC PLC
UK POLICE
UNITED GLASS
WARWICK INTERNATIONAL LTD
WESTMINSTER GUN CLUB
WEST LONDON SHOOTING SCHOOL
WHITBREAD BREWERY
WILLIAM CLOWES LTD
WILLIAM GRANT & SONS

“the ear plug is both comfortable to wear, has adequate attenuation, but more importantly in today’s stringent budgetary climate, is clearly a money saver. I can confirm that the noise-breaker has saved my company a substantial amount of money compared with the disposal plugs that were supplied. We now have supplied the plug to over 700 of our employees from a current workforce of >820.” Rexam Beverage Packaging

Changes to the Noise at Work regulations 2006

Hearing loss caused by exposure to noise at work continues to be a significant occupational disease. Recent research estimates that 170,000 people in the UK suffer deafness, tinnitus or other ear conditions as a result of exposure to excessive noise at work.

Currently (under the Noise at Work Regulations 1989) the first action level (link to heading Action levels) is a daily personal noise exposure of 85 dB(A), the second action level is a daily personal noise exposure of 90 dB(A), and the peak action level is a peak sound pressure of 200 pascals.

When the Physical Agents (Noise) Directive is implemented with new regulations in early 2006, the first action level will be 80 dB(A) and a peak value of 112 pascals, the second action level will be 85 dB(A) and 140 pascals, and there will be a limit value of 87 dB(A) and 200 pascals.



Attenuation details on Noisebreakers tested at Salford University, Dept of Applied Acoustics EN352-2 : 1993 Report No. HP/95/15

Frequency	63	125	250	500	1000	2000	4000	8000
Mean Attenuation	13.9	16.1	19	22.7	25	32.2	41.1	36.9
Mean - 1 S.D.	7.9	11.9	14.5	18.2	21.6	27.2	36.3	31.9
Mean + 1 S.D.	19.9	20.3	23.5	27.2	28.4	37.2	45.9	41.9

H = 28 M = 21 L = 17 SNR = 25
CE 95 0194

Emtec Laboratories - Noisebreaker

HEARING PROTECTION : COST COMPARISON.

FIGURES AS COMPILED BY ST IVES GROUP
(SUPPLIED 2005).

CURRENT METHOD OF HEARING PROTECTION
VERSUS EMTEC NOISEBREAKERS.

<u>2009 Prices - Disposable plugs</u>	<u>2009 Prices Noisebreakers</u>
25p per pair	£75 per pair
Usage (on average) 3 pairs per day per person = 75p	
Therefore cost per 5 day week = £3.75	
Cost over a 5 year period (ignoring inflation) = £900	
With a workforce of 70 personnel, cost = £63,000	£5250

COST SAVING TO YOUR DEPARTMENT £57,750 OVER 5 YEARS.

Current typical plc break-even cost comparison is 12-18 months.





NEAR MIRACLE

John Humphreys marvels at a little known innovation he'll be relying on to preserve his aural senses in future years shooting

THE NICE man made me sit on a kitchen chair, eyes firmly to the front. He peered into my ears with a light on a stick, inserted a foam plug, pushed it well in and stood back. His assistant advanced menacingly like the malignant dentist in *Marathon Man*, clutching the sort of hypodermic they use to inject horses, and before I could move I had squirted into my ear a glutinous brew the consistency of putty.

He went round to the nearside and repeated the performance. I sat there dead to the world, all sound gone, an appreciation of what it must be like to be profoundly deaf and a taste of what awaits a shooting man who does not take good care of his hearing.

Five minutes passed the assistant stepped forward and removed the moulds which had now gone rubbery, took out the plug with a pair of forceps and, now that hearing was restored, he said, "That'll do nicely. You'll get your new ear plugs in a week." You see?

It was not menacing at all, but just that nice Maurice Davison and his helper, come all the way from Shrewsbury in Shropshire to fit me with the last word in ear protection for shooters. To his words, less than a week later the new plugs arrived in their special box. I had mine coloured bright blue, just in case I dropped one into the grass where flesh tints might go chameleon in the tangle.

This visit was the end of a two-year crusade in search of the perfect ear defence. Regulars will know that I was becoming slightly tense about the problems of hearing damage to shooters and the fact that so many of my friends cupped a hand round their better ear before they could catch my drift. We tried all sorts from lumps of cotton wool, the disposables - one of which vanished down the ear-hole of a fellow contributor - the ones with a small valve, and the Rolls Royce sort which contained electronic microphones and cost an arm and a leg.

All were less than perfect for one reason or another. At best were the electronics, but they were so bulky and many sounds were distorted. It was a job to know what to do with them between drives, your choice of



"The end of a two-year crusade in search of the perfect ear defence"

headgear was limited to a cloth cap, many cost in excess of £150 and the batteries had a habit of dying on you at the most awkward moments.

I speak of what I know, for I gave them a fair try last season and a shooting life spent wearing things which par-boiled your lobes made you think that even a loss of hearing was not all bad.

Best to date

HOWEVER, I am happy to share with readers what I considered to be the best to date - the Noisebreakers from Emtec Laboratories. The device is a model of your ear which will fit nobody else, with a specially designed hole through the middle. In crude layman's terms - my sort of language - little sounds make small ripples and get straight through, but big bangs, Re the double discharge of your 8-bore, make tidal waves which are baffled by the aperture and filtered. There are no batteries or working parts. They are virtually indestructible, cost about £50 a throw and when necessary you wash

them in mild soapy water. What is more, they keep your unique mould back at HQ so in the event of your losing them or wanting a duplicate set, they simply pull them from the shelf and there you are. Maurice tells me that within five minutes he can find any set of specially coded moulds from among thousands.

As usual the shooting fraternity was slow to discover this marvel. The secret is well known to workers on oil rigs, in factories, newspaper print shops, among police motorcyclists, breweries, and anywhere where loud noises are an occupational hazard. The list of individual users runs from Lord Jim Prior to The Duke of Kent and HRH Prince Abdorezza of Saudi Arabia, while the brother of the Sultan of Brunei ordered 24 sets.

The British Association for Shooting and Conservation did a field test and found them excellent but I suspect their findings did not reach the eyes of enough of our fraternity. My own opinions concurred entirely with theirs and I have no hesitation in

recommending them to rifle, clay arid field shooters.

I gave them a try-out on a day's decoying. When I had worked out which were left and right - like the Irishman's boot - I was away and had them in all day. After five minutes I was not aware of their presence but I could hear redlegged partridges calling three fields away, the song of a skylark and the whoosh of wings when a pigeon came unseen from behind and veered at the last minute. Protection is to BS 5108, whatever that might mean, but it is OK by me. The only time I knew they were there was when I ate an apple. So perfect is the seal that the appalling crunching sound inside your head is like Hannibal's army eating celery, complete with elephants.

MoD registered

IN FACT, I was driving home before I thought to take them out. I have tried them while on the telephone and in normal conversation and can hear perfectly but the bang of a gun, while audible, causes no distress, even after a good many shots. The product is registered with the MoD as complying with quality assurance requirements and has an established reputation outside the shooting world.

Fans of heavy metal who like the music but are wary of the decibels could get away with wearing a pair at a concert, whereas ear muffs might give cause for adverse comment. I shall certainly not be seen out shooting without mine from now on. It is my New Year's resolution and one which, for a change, I might keep.

The main thing to remember is to take the box with you each time you go out. Either tie it to the gun sleeve, keep it in the gun case or do as I have done and clip it to the handle of the gun cupboard door. I cannot open the door without putting my hand on it so there's every chance I'll take it.

Whatever course you take, hearing protection is a must if you are to retain that most precious sense. If the Noisebreaker appeals, just-make an appointment for the nice man to pop round with his hypo and get your 60 quid out. For your Noisebreakers contact Emtec on (01743)709480.