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Karting Helmet Information Bulletin

From time-to-time we hear of a helmet coming away from a driver's head in an on-track incident.

In 2008 we have had more reports of a similar nature, although the exact details of these incidents are not known or easily able to be determined after the fact.

Speculation in some instances is that the helmet may have been a poor fit, too large for the size of the driver's head. It has been said, in relation to younger drivers, that some purchase a larger helmet than necessary because the driver will "grow into" the helmet. This is not a recommended practice and is to be avoided when fitting a driver for such an important piece of personal safety equipment.

Recently the writer was at an event and witnessed a relatively minor incident where a helmet came off a mid-teens driver.

Upon initial investigation we found that chin strap had been securely fastened.

Further testing with the father of the driver revealed that with the helmet securely fastened on the driver it was possible to grasp the rear of the helmet and roll the helmet forward off the driver's head with relative ease and with little discomfort to the driver.

What we have learned:

- the fitting of a helmet to a driver requires more attention than simply determining the head size.
- the shape of the driver's head is equally important.
- some helmet manufacturers offer a broader range of basic helmet shapes and head sizes than others.
- the helmet vendors may not be as well trained in helmet fitting as they should be.

As a guide to increasing your knowledge of proper helmet fitting, we have checked a few helmet manufacturer's websites. ASN does not endorse any helmet manufacturer... we focus on the FIA approval labelling. However the Arai website is interesting as they provide an excellent helmet fitting guideline.

We are attaching Arai's helmet fitting guideline for your guidance.

We encourage all karting drivers to reference the Arai guideline and to perform a helmet fitting check to determine if you (or an assistant) can pull your helmet off your head by grasping the rear of your helmet and rolling the helmet forward, attempting to roll it off your head.

We urge you to change your helmet if it does not fit properly.

We also encourage the parents and handlers of younger drivers to look into the advantages of the recently FIA-introduced youth helmets product (Snell Standards CMR and CMRS2007). This product affords excellent protection and significantly lighter weight.

Regards,

Paul B. Cooke

ASN Canada FIA

Vice President, Competition & National Karting Director



HOW TO PROPERLY FIT AN ARAI HELMET

This card is designed only as a condensed version of your Arai Fit Video.
It should be used as a reference only after viewing the video.

THE CUSTOMER:

Unless this is your customer's very first motorcycle helmet, be prepared for them to "help" you fit them, like telling you they already know their size, etc. Politely tell them that, to you, it's not a "helmet", it's an "Energy Management System", a device whose main job is to manage the energy of an impact. In order to do its job effectively it must fit a certain way, and your job is to help determine that proper fit. This statement should change their minds and persuade them to let you do your job.

VISUAL EXAMINATION:

Begin with a visual examination of the customer's head shape. Head shape is as important to a proper fit as head size. Is the head round or long? Does the eyebrow area protrude from the forehead, or is it level with the forehead? Does the forehead protrude, is it flat, or does it slope back from the brow? Is the back of the head "pointed" or flat? Does the customer have a lot of hair, or little or none? Are the cheeks full, or even with the facial structure, or sunken? (As the Arai video explains, some customers – especially those who wear helmets that are too large – have full faces, and can make the mistake of wearing helmets that fit their face instead of their head.)



THE MEASUREMENT:

Measuring the customer's head is the starting point for the sizing procedure. Due to varying shapes, heads that are apparently the same size when measured by a tape may not necessarily fit the same size helmet. You are trying to find the longest distance around the customer's head, at eyebrow level, above the ears. It may require several different attempts to establish the longest possible measurement, but it is absolutely essential to getting the right fit.

NOTE: Be sure to use an accurate measuring device that shows inches (in) and centimeters (cm). They are obtainable at any fabric store.



TRYING ON THE HELMET:

- 1 First, have the customer grab the helmet by the chin straps, with the front of the helmet facing him and the top of the helmet facing down.
- 2 He should place the thumbs on the inside surface of the straps and balance the helmet with his index fingers.
- 3 Then, spreading the helmet apart by the straps, have him slip the helmet down over the head. This may take a bit of practice and extra instruction, so pay particular attention to this step.

If you see that the helmet slides down on his head with little or no resistance, you have your first indication that it may be too large. Obviously, if it will not slide down over the head at all it is too small. Many people unfamiliar with proper helmet fit are reluctant to pull down if they meet resistance as the helmet goes on. Only if the helmet is impossible to put on should you move up to the next size larger, since helmets that go on snug generally fit very well once they are all the way on. Remember, most people left to their own devices will select a helmet that is too large for them. The eyes should be approximately in the center of the eye port with the top edge of the liner padding just above the eyebrows.

CHECKING HORIZONTAL AND VERTICAL MOVEMENT:

While the customer is wearing the helmet, look carefully at the way it fits. Check to see if the cheek pads are in contact with the cheeks. Is there excess pressure on the cheeks? In most Arai models the cheekpads/earcups can be removed to verify the fit around the crown of the head if necessary, and replaced with thicker or thinner units to fit the face better. If there is a problem in the fit around the facial areas, you should consider completely removing the cheek pads, and then fit alternate



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cheekpad thickness until the proper comfort level is achieved. You may choose, in the case of a customer with a particularly broad facial structure, to remove the cheekpad set completely to get their head into the interior of the helmet to prove that the circumference is correct. Then, address facial fit by adjusting the thickness of the cheek pads. (Obviously, as a retailer, having a selection of cheekpads in thicknesses to fit the varying models is going to be essential to this process.)



Look for gaps between the temples and the crown padding. Check the back of the helmet where the neckroll makes contact with the neck. Does it touch at all? Or is it pushing the helmet away at the rear, causing it to roll down over the eyes in front? After you have made your visual check, grab the helmet in your hands, one hand on either side, and try to rotate the helmet from side to side. Note any movement of the skin while doing this, as well as the amount of resistance to movement while the customer holds his head steady. The helmet padding should not slide easily over the skin, but should pull the skin in the direction of rotation. Next, check movement up and down, again noting skin movement and resistance. If there was little or no skin movement in either the vertical or horizontal tests, and/or the helmet moved very easily, the helmet is too large. A properly fitted helmet will cause the skin to move as the helmet moves – and the wearer will feel as if evenly-distributed pressure is being exerted around the head.

NOTE: *Helmets are a little like boots, in that they will break-in a bit. For this reason, the best attitude to have when fitting is that the helmet should be as snug as possible, without being painful.*

RETENTION CHECK:

WARNING: This test may be a little uncomfortable for the customer, but it is very important! Have the customer tightly fasten the chin strap so you can check it. After the strap has been tightly fastened, and while holding his head steady, have him reach over the top of the helmet and grab the back of the helmet's bottom edge with one or both hands. Then ask him to try to roll the helmet forward off his head. If it comes off, or comes close to coming off, it is too large or it is not the proper fit.



PRESSURE POINT CHECK:

Have him unfasten the chin strap and remove the helmet. Immediately after the helmet has been removed, observe coloration of the skin at the forehead and cheeks. A reddening of the skin in a small area may indicate a pressure point. Pressure points sometimes are not noticed by the wearer for several minutes, or even hours later. They sometimes cause headaches, and are at the least, uncomfortable. If you notice a pressure point, or the customer experienced discomfort there while wearing the helmet, it's too small or is the wrong interior shape. Before going to a larger size, have the customer try one or more of the other Arai interior shapes in the same size to see if the pressure points are relieved.

THE ROLE OF HEAD SHAPE IN FITTING AN ARAI HELMET

As said above, the shape of the head – the relationship between length and width – are as important as head size in properly fitting a helmet. Arai now offers three interior fit shapes for full-face helmets, based on the following:

The traditional Arai fit - the "Long Oval" — in which the head length is distinctly narrow side-to-side, combined with a longer front to back measurement. Arai's Long Oval shell shape is currently available in the Signet, Renegade and Tracker GT series.

The transitional fit - the "Round Oval" — in which the head is distinctly rounder, length and width being almost even. These shapes are typically very easy to see when you are looking at the consumer face-to-face, from eye to eye, as well as from the profile. Arai's Round Oval shell shape is currently available in the Quantum series. (The RX-7 series has a "relaxed" Round Oval shell shape, which is not quite as pronounced as the Quantum's.)

The bridge fit - the "Intermediate Oval" — a round shape, but with considerably more forehead length in it. This shape "bridges" the gap between the two previous shapes. Arai's Intermediate Oval shell shape is currently available in the Astral series.

Arai's Motocross and off-road helmets – the VX and MXC series - as well as our three-quarter open-face helmet lines - the Classic and SZ Series - do not share the multiple-fit packages. These are built on a single-fit package that runs in the middle of the shape range. This is because Arai has had very little problem fitting customers choosing these products, within the single-fit package.

IN CLOSING:

Arai is widely considered to be the world's best helmet. Let's make sure the customer gets the best service possible in the fitting of their helmet, to provide them with the satisfying, trusting Arai experience.