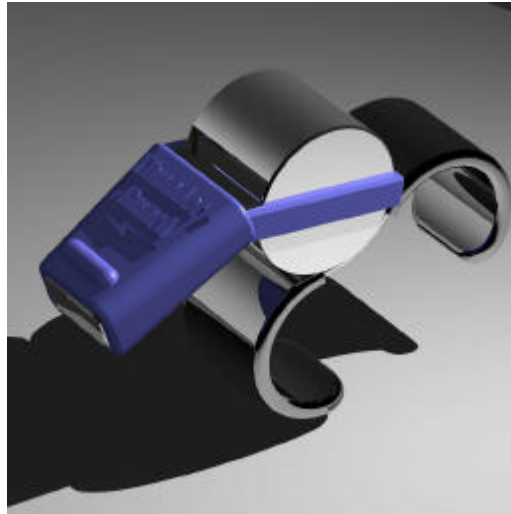


## Renowned Soccer Whistle Designed with VX

What is a soccer game without the high pitched peal of the referee's whistle - the penetrating noise cutting through thousands, carrying for miles - the ultimate in soccer match control.

Selecting the right whistle is therefore essential. For over 100 years, soccer referees throughout the UK have been using ACME whistles, in particular, the famous ACME Thunderer. With their clear penetrating trill, they have become the whistle of choice for international sports federations. ACME whistles are now the world's most successful. There is not a major soccer league that has not been graced by them.



With increasing demand for a pealess whistle from referees worldwide, ACME decided it was time to update the design of the Tornado with a more contemporary design that was in vogue with the modern soccer game.

### The Task

ACME wanted to design and manufacture a pealess whistle that could still cut through the crowd. They were looking to design a whistle that was smaller yet still looked

powerful, could be molded in plastic, have clean lines for a sleek appearance and was ideal to handle. Another important consideration was the whistle had to retain the same sound quality referees and ACME have come to demand. For this, they approached industrial design company John Yair Design.

### John Yair

John Yair, a well-established industrial design company founded in 1974, offers a complete design and prototyping service, from initial design concept to prototyping design, as well as their own tooling and prototype molding service.



Nothing could be left to chance so John Yair turned to VX as the ideal design tool.

### History behind the Thunderer

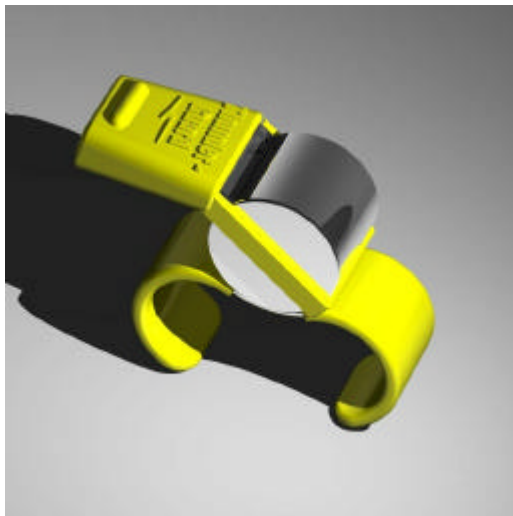
The Thunderer's history dates back to the 1870s when Joseph Hudson, a Birmingham trained toolmaker, developed the police whistle which was to replace the heavy and awkward hand rattle. Immediately adopted as the official whistle of the London Metropolitan Police, Hudson went on to revolutionize the whistle world with the ACME Thunderer. The whistle, which is still the world's leading pea whistle, was later taken up by referees because it offered reliability, control and power.

The first major sports event to be refereed with a whistle was a soccer match held in 1878 at Nottingham Forest Football Club. Before that, the referee had signalled to players by using a handkerchief. The whistle he used was pealess, brass and made by Hudson. Later this whistle was to become the ACME Tornado.



The company's task was to design a pealess whistle in a slim version with two chambers that would retain the sound and reach the same pitch of the original Tornado. This was achieved by tuning each of the chambers to a slightly different pitch in order to emulate the original warble of the pea whistle.

Nothing could be left to chance so John Yair turned to VX Overdrive™ as the ideal design tool. VX Overdrive ensured that the finished model would meet all requirements and expectations when it reached the production process.



John Yair explains: "With VX Overdrive, we began building a digital model of the whistle. Detailed dimensions could be added and taken away if needed. We could step back through a design if something fundamental needed changing. This ensured that when we needed to commit to a detailed engineering drawing we could do so quickly and without fear of complications.

Simon Topman, Managing Director from ACME comments on the new Tornado: "John Yair explored many different avenues. As a result, a highly successful Tornado was designed. We were not only impressed with the way that John Yair and VX Software provided not just a good looking

and high performance product, but that all the manufacturing problems were addressed too." The new Tornado has all the features we requested, most importantly, a loud, clear and totally consistent sound that is 100 percent reliable - referees know how important that is."

**VX ensured that the finished model would meet all production requirements .**

Through VX Overdrive, John Yair has been able to improve and refine the new whistle to meet the rigorous new standards demanded by ACME and FIFA officials. The new ACME Tornado keeps in line with ACME's record of faultless performance and unique sound.

The clear pitched tones of ACME whistles can be heard at [www.acmewhistles.co.uk](http://www.acmewhistles.co.uk) .

#### **About VX CAD/CAM**

VX CAD/CAM software offers premium-performance capabilities typically available only in expensive enterprise-level products. VX Overdrive is the only value-priced, premium-performance CAD/CAM product that integrates design and manufacturing to eliminate the gap between CAD and CAM. Manufacturing planning and CNC machining routines are integral parts of the VX engine and provide exceptional synchronization between design and manufacturing. In addition, VX Overdrive provides sophisticated functionality such as advanced surfacing, intelligent sketching, photo-realistic rendering and history editing, which are typically only found in premium-priced CAD/CAM software.



**VX** Shaping the future of CAD/CAM™

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