Mendrisio, within the SR Arena with Lange Loudspeakers and FaitalPRO

Acoustics is peculiar, and the engineering is Swiss

Half way through December the installation was ready. The joint is the Mendrisio Arena, right at the very beginning of the Swiss soil, along the Italian border. It is here that a brand new professional sound reinforcement system has been chosen; it is a complete line array signed by Lange Loudspeakers Ltd, a renowned Swiss company, and several other sound enclosures to complement the installation, all stuffed with FaitalPRO loudspeakers.

A bit of Lange history

The make is recent, dating from 1992 thanks to the founder, Hans Andreas Lange, who decided in that year to give birth on his own, to a series of professional loudspeakers collected under the new brand name of "Delta Loudspeakers".

Ever since the beginning Lange has been the father of all products signing also the design; all models coming out of this passion were sold on the market till 2005.
Then Andreas Lange decided it was about time to kick off a new "solo ride", founding on purpose a brand new make, with private capitals and thoroughly independent, the Lange Loudspeakers, with clear ideas on the products to create and quality policies to follow.

FaitalPRO, on his side is the professional division, based in S.Donato Milanese, of Faital S.p.A. a multinational group famous in the audio markets for exactly 50 years in 2008. International standard certified, Faital today boasts affiliates and productive plants around the world, in six countries. In their products, design experience and applied innovation are fused into productive processes and extremely advanced technologies meant to create only high end no-compromise professional loudspeakers. Every single product of the professional lines from FaitalPRO is meticulously designed internally within the manufacturing and engineering areas in purpose built CAD and FEA environments and consequently tested accordingly to guarantee absolute quality consistency and audio reliability in heavy-duty

Lange Portfolio

Destined to double market areas, professional users and top end consumer, Lange Loudspeakers, has from the start, concentrated on always evolving audio markets and created a very wide and

coherent portfolio in which the owner and designer Andreas Lange poured all of his experience, in order to create a brand name to consolidate his presence on the market.

His mission is to create the best quality to price ratio on the market.

Meticulous precision in the manufacturing processes, and brand new headquarters in the Swiss region Grigioni (from July 2007), Lange Loudspeakers concentrates on the professional musicians and sound designers needs, proposing acoustic enclosures combining great performances and the renowned Swiss engineering.

The latest installation within the Mendrisio Arena confirms that once more. A lot many of the enclosures chosen here make use of FaitalPRO loudspeakers, high class technology concentrated, with neodymium magnets, special assemblies for heat dissipation and peculiar technologies to reach weight savings, great handling power and reference performance, for a unique reliability in every application and need in all pro audio environments.

In due course in Mendrisio

The Mendrisio Arena installation began on 18 December 2007 and carried on quickly since cabling was already in place, sided by the DSP, BSS FDS366 processors and several Crown (MA3600 - MA2400) amplifiers.

The medium size audio installation, is placed in a particular shape environment, arena modeled, derived from an ex mechanic works which allowed easily the creation of an accurate acoustic resonance thanks to a well engineered architectural project. Actually the area includes, almost all around, A 100 degrees stairway as per the classic arena shape and a lot many "structural corrugations" created along the perimeter of the place, following the lateral sides and on the ceiling, so that the acoustic behavior is really balanced. According to professionals comments the result is unique in Switzerland, and as such for the sound reinforcement of the place adequate products were required.

The chosen series

Several renowned manufacturers or distributors brought their Line Array products here in Mendrisio for a demo session within the Arena. But in this frame the chose line is the Line Array by Lange Loudspeakers encompassing 20 boxes model L208 (Line Array series) incorporating 8 x B218 (main

PA), 4 x HP10 (HP Full Range Series) with 2 x B218 (for the upper terrace) and 4 x P10 (from P Series). All boxes employed here are manufactured by Lange Loudspeakers.

As mentioned, the choice is all but casual, since nowadays Lange Loudspeakers products boast - among the many advantages - also a fundamental sign of distinction, that is the emphasis on project which reflects in an almost manic attention for the detail.

At the moment the professional SR and installation ranges encompass the following product lines:

- Line Array - long throw,
- Line Array - compact - for medium coverage
- Horn Speakers - horn loaded long throw boxes
- HP Full Range - high quality series
- P Series - useful in retail applications, almost everywhere.

Here at the Mendrisio Arena, the managing and technical teams have chosen several "representatives" of the Line Array, HP Full Range, and P Series, so at lease some samples of any series.

Live & Disco

The place was established in order to host live events for over around 30% of total "operating" time, while the rest of the "energies" are devoted to disco entertainment, so the sound system is meant to guarantee the best possible quality level in any and mixed situation; so it must be rather eclectic and bulletproof in any destination.

To such a purchasing decision they came through a rather peculiar selection process: some specific requests concerning acoustic and quality covering in the final sound behavior had initially been requested and Antonio Stillitano - the owner - has consequently received and evaluated the several proposed systems, advised by the FOH engineer, Alberti Lorenzo from "SoundAround" and Marco Frigerio orchestrating the technical part.

At the end of such "tender" they decided to choose Lange Loudspeakers products and hire Fabio Corridori, for the installation; being the distributor on the Italian market he knows such products in detail and he already has used them in many installations where the have had the chance to prove

their very best nature.

If the brain of such products is Swiss, the heart is often Italian since many of the Lage's models are centered on Italian loudspeakers manufacturer FaitalPRO. Here's some examples:

VSeries

For instance, the B218 form V Series is ideal in main bass applications for high class Sound Reinforcement and mounts FaitalPRO W18N8-1000 drivers, 18" on 8Ohm woofers - able to handle 1000W nominal power; they have also been choser for the very light voice coil and long excursion (Xmax). The B218 enclosure chosen in Mendrisio has a very tiny cabinet, 75X57,5X75 cm (H,L,P); very compact though extremely powerful, due to its long excursion double woofers from FaitalPRO, two 18" producing up to 136.5dB of continuous output in half the space normally required from a similar range product. The frequency range extends from 35Hz to 200Hz, while six carrying handles and wheels on the back make it a battle horse, ideal for touring applications.

HP Series

In the HP full range series, models HP10, and HP12, chosen for the upper terrace stage monitors in the Mendrisio Arena, and HP15 respectively use FaitalPRO 10, 12 and 15" woofers, models **W10N8-350, W12N8-350, (Professional series) and W15N8-700 (High Performance Series)** and they all do not need high order passive filters (in this case case Lange employs a 6dB/oct one).

And again the **HP10**, 12x **HF10RT** & 15x **HF20AT** models make use of HF radial drivers from FaitalPRO and are very balanced, and neutral from 1KHz up to 4 KHz, thanks to a soft suspension diaphragm.

The HP range integrates very powerful loudspeakers and is very modern conception.
All FaitalPRO high and low frequency drivers are certified carrying out life tests in accordance with the severe norm AES 2 - 1984 Rev.2003, that requires the driver to function in free air for 2 hours at nominal power, powering the unit with DIN filtered Pink Noise and therefore are perfect to withstand event the most extreme working conditions. All High Performance LF drivers feature a 4" voice coil originally developed for 18" drivers in order to guarantee an excellent behavior over the low frequencies reproduction, along with minimum levels of distortion. For example the FaitalPRO 10" driver used in HP10 within the Mendrisio Arena boast an incredible 8.95mm excursion.

Compact Line Array

This range proves to be a convenient solution where weight and dimensions matter but also quality and output must be consistent. Even here the choice for FaitalPRO loudspeakers is not by chance at all.

Genesis 50, one of compact line arrays, uses radial FaitalPRO (1") drivers, **HF10RT**, for similar reasons as in the HP series. The difference is in the Genesis range a bigger neutral cross-over range bandwidth is necessary since horizontal directivity expectations are rather high.

The small **L205** line array contains the brand new FaitalPRO M5N12-80 driver, since its efficiency is extremely high and the diaphragm area is notable, around 25% more than the 5" previously used.

The **L208**, model which the Arena adopted for twenty units, still in the Line Array series, makes use of **W8N8-150** FaitalPRO driver. It is an excellent LMF driver which allows to keep a relatively high crossover frequency still obtaining polar diagrams with no phase rotations. To stress this point even further , the L208 enclosure is assembled as a 2-way active 8" (17,3 KG, very light weight) and despite this, it boasts a practically perfect horizontal diffusion!!

The "father" comments

Andreas Lange comments on the Mendrisio Area installation with apparent satisfaction: "It is very important for me to be able to quote an installation based on my products, so close to the factory premises; and furthermore the Arena has a great acoustic behavior; I took the stake to take part in the "race" with several other names far more renowned than mine and I even "raised" suggesting the formula: I will install my system, then you'll keep it only if you fancy it, otherwise I'll take it back."

To be noted, that Lange, being a SR enthusiast more than a "simple manufacturer", suggested the Arena staff not only a budget conscious system, but a quality centered one, and on top of that he personally carried on the fine tuning of the whole system, not only using the reference software, but most of all by exercising his personal "hearing", as he is used to. The competitors had come up with really professional acoustic behavior simulations which in the beginning could suggest totally different results than the realistic final ones. Instead, Lange engaged himself in the Arena application and not on paper or on screen simulations.

Lange also declared: "The existing software allows you to make excellent set-ups pointings, but you can reach very good results also using a 100 Euro laser level. Today, anyone visiting the Arena will notice the system, which, besides sounding very precise, is also very attractive from an aesthetic point of view, overall very professional: we took care of all aspects, including suspension anchorage hardware with beautiful 30mm aluminum plates, excellent serigraph's showing the different pointing degrees and the back part of the enclosures which also makes use of a large two color anodized alloy plate which identifies every model."

We have also designed and created through CNC some custom built waveguides which are particularly suitable for line array applications and allow for a very linear phase response, (+/- 15 degrees from 2KHz to 16 KHz) on the whole area of the throat. A typical line array can be defined as such only if high frequencies can be audible at long distances (over 13 KHz). At Mendrisio Arena the first thing you will note is actually the highest part of the spectrum, very defined, optimum dynamics, never distorted and unusually extended towards HF! The low frequency sections have never created any problem. As mentioned they make use of double 18" woofers, FaitalPRO of the highest quality models which have already been welcome and praised all over the world, after the severe on field testing that Lange Loudspeaker enclosures have faced in many installations all over the world, in Italy, Russia, Indonesia, UK, South Korea, and Germany."

Caption
Whenever Andreas Lange, owner and designer of Lange Loudspeakers is to make a choice on the several components of a diffusion system (as it happened also in the case of the Mendrisio Arena), he is not certainly bound only to a sterile calculation and a dedicated software, but he decides on the very basis of his long and personal experience: long years of firm experience in the Sound Reinforcement world; as a matter of fact he is convinced that "computers are a great help, but a craftsman's choice will produce better results".

Caption
The heart of the Swiss manufacturer Lange Loudspeakers is Italian, the Neodymium drivers are FaitalPRO's, from the "Professional Series", "High Performance" series with powers up to 1.000W and the new "FIVE HUNDRED" Series which features "thrilling" voice coil excursions.

Caption
The projects signed Andreas Lange have given birth to several ranges of prize winning products for

their accuracy in sound reproduction and quality standard applied. The loudspeakers used in such products must correspond to the same values of excellence, and this is the reason for the choice in favor of FaitalPRO Italian components, Professional and High Performance series.

Caption
Hans Andreas Lange comments: "All FaitalPRO drivers I've been using in my enclosures allow me to come out with a very low weight products, they all boast really excellent technical features, sound quality and, last but not least, they are always in stock!"