

PROJECT EXPOSÉ

EMBASSY SPORTS CONE CASE

Initial situation:

The company Embassy Sports GmbH sells a high quality range of darts and accessories under its brand name "BULL'S". In order to differentiate the company from its competitors, the packaging should have a dynamic appearance, present the content optimally and provide the user with a permanently usable dart case as a practical added value.

Technically, a two-piece plastic shell is considered. The shell should be designed to fit unassembled, or open, in a cardboard box. The package should have a window to display the content while providing the largest possible printable area. The overall dimensions should make maximal use of the euro hole wall grid.

Offer:

On the basis of an information meeting, SYNTHESIS calculated a suitable offer, which is divided into four phases:

1. Design Concept:
The drawing up of various suggestions (design concepts) on the topic, presented in a clear and illustrative manner.
2. Design Draft:
High-precision development of the selected design concept and 3D modelling including an STL-sample to control the appearance and the practicality.
3. Design Development:
Last correction to the 3D CAD model after testing the STL sample and creation of complete 3D data with all technical details, structures, etc. Conversion of the 3D data to general readable data formats as specification for moulding and photo-realistic detail renderings for all parts.
4. Realization Support:
First injection moulding parts, control, surveying and set up of a correction list for all discrepancies found, each with suggested corrective action.
Control of pre-production sample, and release to production.

Start:

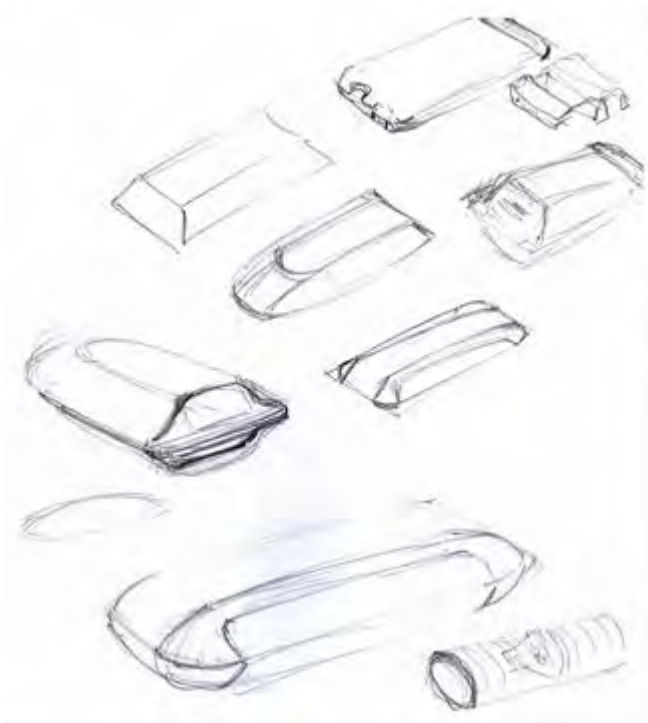
Beginning of the project upon subscribed order by Embassy Sports GmbH.

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Project start at Phase 1 – Design Conception:

- 1) Market scan of competing products
- 2) Screening of all Embassy Sports darts and all accessories
- 3) Preparation of preliminary sketches to various forms of the shell

These drawings look raw. They are only sketched ideas, notes that will be sorted out for possible further elaboration.



- 4) Internal selection of Ideas
- 5) Preparation and presentation of the ideas with quickly generated 3D CAD models
- 6) Presentation at Embassy Sports

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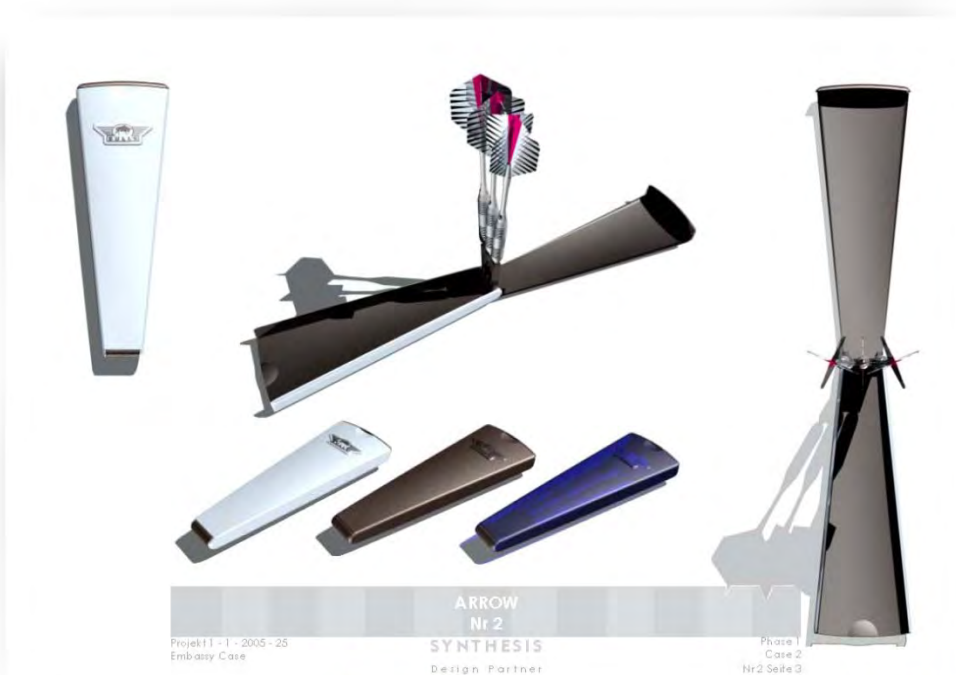
Phase 1

Presentation 1:



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Phase 1 Presentation 1



Concept "ARROW", shown on the left, features all the essential ideas of the new dart case.

The darts are still held in a clamp with the dart tip. A solution for storage of the flights (the "wings") is still missing.

The packaging is already planned for all concepts.

The box for "Arrow" is opened with a window which facilitates the clear presentation of the darts and the dart case.

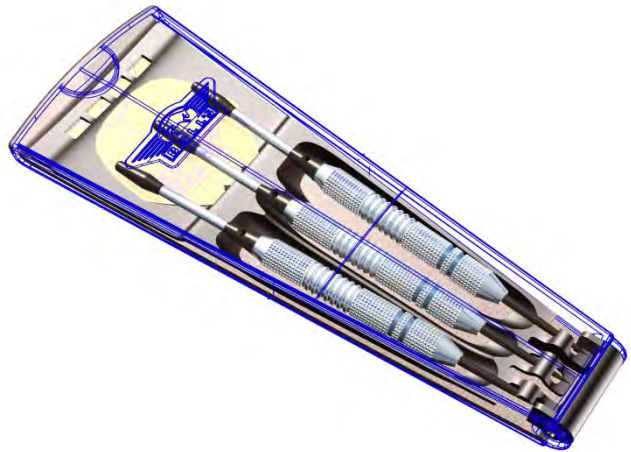
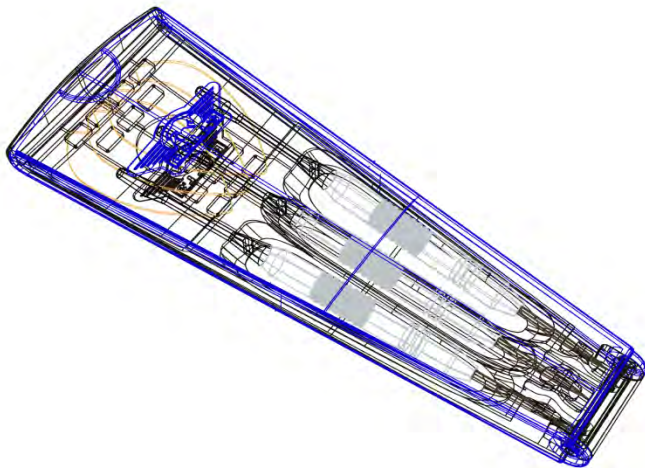
The cardboard surfaces show a triangular shape with a special dynamic character which is immediately noticeable and recognisable.

"Arrow" is chosen!



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Phase 2 - Design:



- 1) Review of presentation of Phase 1
The customer spontaneously chooses "Arrow" at the presentation and even with a week of reflection did not change his mind. He has chosen well, and now this design concept is to be worked out.
- 2) Revision of the design concept
The chosen concept "ARROW" is supplemented with an "inlay" to protect the darts and flights while in transit.
- 3) Modelling of the design as a 3D CAD model with a change of volume as some of the darts have thicker barrels.

ARROW gets the inlay. All sorts of darts, tips and flights must be accurately measured and this data is subsequently used to create an inlay that fits perfectly. In addition, the case is somewhat bulbous, but in general the intended shape remains.

The left figure is a CAD rendering.



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Phase 2 - Design

Presentation 2:

- 4) Check and fine adjustment of the STL model

STL files for the STL model

STL (STEREO LITHOGRAPHIC) is a very precise method used to polymerize the shape via laser beam in a tank with liquid plastic. The virtual CAD data becomes a tangible reality. This STL laser technology is offered by various service companies. The cost of the models is to be confirmed, communicated to the customer for approval and the STL sample will be released upon OK.

- 5) Check and fine adjustment of the STL model



The STL parts are a bit rough.

To put them together, they have to be smoothed and "finished off".

Then assembly is possible - the dart case can be

- 6) Presentation 2 of the model



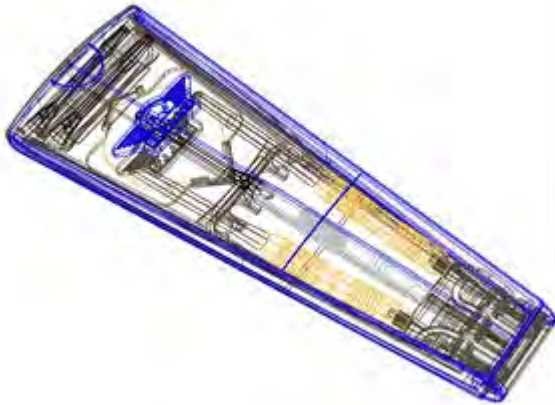
The sample dart case is presented to the customer with some amendments. The preliminary design pleases, but the inlay is still too complicated to assemble.



Duration of Phase 2: 10 weeks

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Phase 3 Design Development Datatransfer:



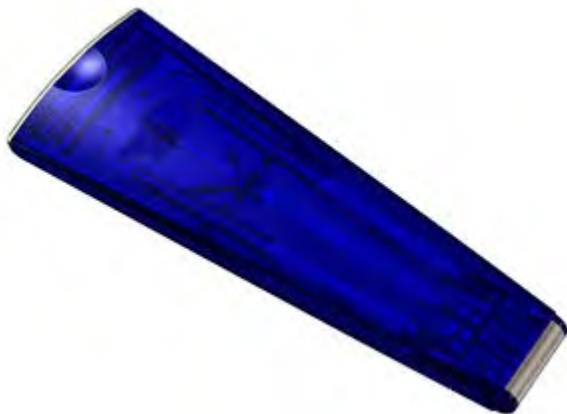
It is easy to see that creativity is perhaps 20% intuition and at least 80% transpiration.
(Walter Gropius)

1) Review of Phase 2 Presentation 2

2) Revision of the design draft



3) Presentation of the design with photo-realistic perspective views, axonometric views, design technical drawings and 3D CAD data.



4) CAD files with CAD images for all parts including descriptions referring to specific adaptations (Germ. & Eng.)

5) Shipment of printed description and CD

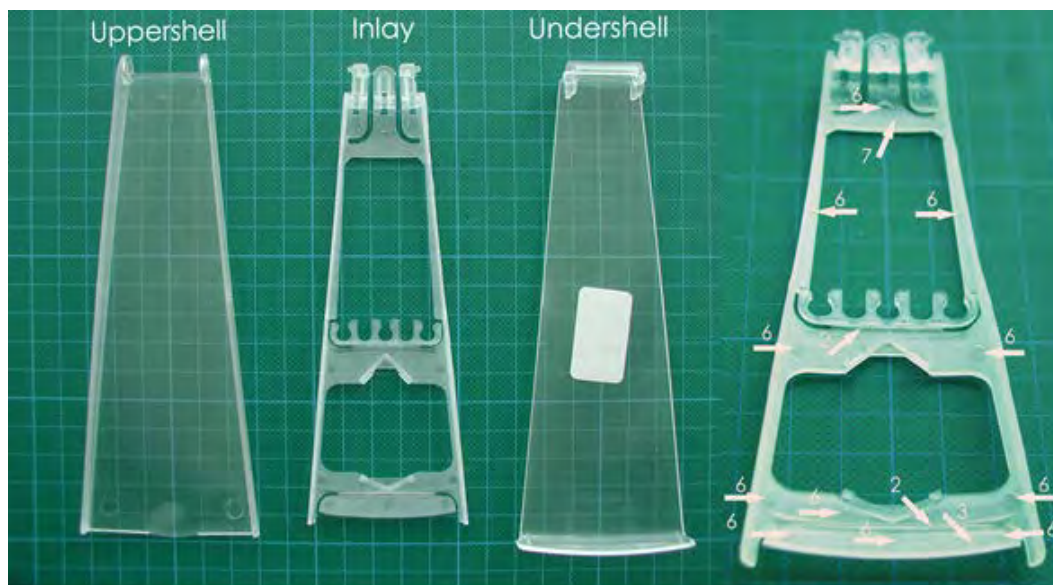
Change of flight fixation and insertion of additional folding shaft support and a partition for spare parts.

Duration of phase 3: 7 weeks

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Phase 4 Realization Support:

- 1) Assessing the function of the first injection moulding parts
- 2) Measurement of the parts and determination of relevant corrections
- 3) Determination of the corrections



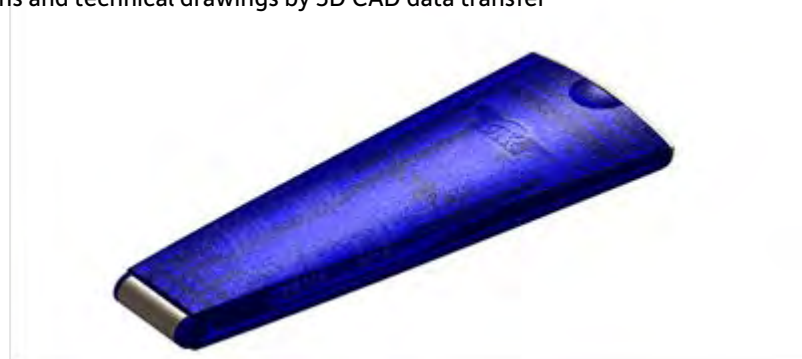
All recognized deviations from the ideal are numbered and listed for all drawings.

For each number, a correction is suggested and submitted, with priority ranking.

This allows the mould maker to calculate the changes and discuss the time and cost with the client in a clear manner.

- 4) Implementation of the corrections to the 3D CAD file
- 5) List of deviations, list of corrections, description the corrections and changing dimensions (GER & ENG)
- 6) Transmission of the corrections and changes with illustrations and technical drawings by 3D CAD data transfer
- 7) Examination of the pre-production samples

8) Approval for the series



The photo on the right shows the approved initial series.

Duration of Phase 4: 12 weeks in total (sporadically until the end of the project).

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Finished products at the POS:



SYNTHESIS
DESIGNPARTNER

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