

Budget airlines have been a huge success and budget model testing looks set to follow...

# Budgeting for success

**Low budget model testing is not just a matter of doing the job in a 'quick and dirty' way. The main difference between regular model and budget testing is that the models are relatively small and usually used for bare hull resistance tests.**



Resistance test for a 6m semi displacement yacht.

27884

Costs can be kept low for those clients who want higher accuracy than a prediction based on statistics will allow but at the same time, they are not interested in getting the finite accuracy of regular model tests. Just reasonable accuracy is sufficient.

Small ship models of up to four metres are produced using new techniques. A polystyrene kernel is used with a shell of polyurethane. Using MARIN's five-axis model milling machine, ship models with very good geometry precision are manufactured. At the moment, these ship models can be fitted with only a few appendages, such as a bow thruster tunnel, keel, trimwedge and interceptor plate and only resistance tests are carried out. Further application of appendages on this type of model is under development.

## Good value

On the basis of the resistance test results with such a small ship model, a performance prediction can be made using MARIN's DESP code. This method of obtaining a speed power prediction provides a good level of accuracy and is used for small motor or leisure yachts, sailing yachts and it can be useful for concept studies.

With these models it is quite easy to change a bow section or perform a keel study for a sailing yacht. Keeping the costs low, model testing becomes interesting for small yards or design offices. For a relatively small budget, model tests can be conducted and using the vast experience of MARIN, hull line improvements can be made.

The latest developments show that propulsion systems, such as waterjets and thrusters, can be fitted in the models so even self-propulsion tests can be carried out with these small models. It has to be noted that scale-effects during the model tests might influence the accuracy of the results but these can be acceptable.

The accuracy of these test results can be sufficient and the model test programme can be conducted at low cost, whilst retaining high-quality standards. This is especially the case for small motor yachts and concept studies.

Representing an extension of its services, MARIN believes that this low budget model testing provides good value for money.

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