



THE WORLD LARGEST SAILING VESSELS

September 2009

DYKSTRA
■ NAVAL ARCHITECTS ■

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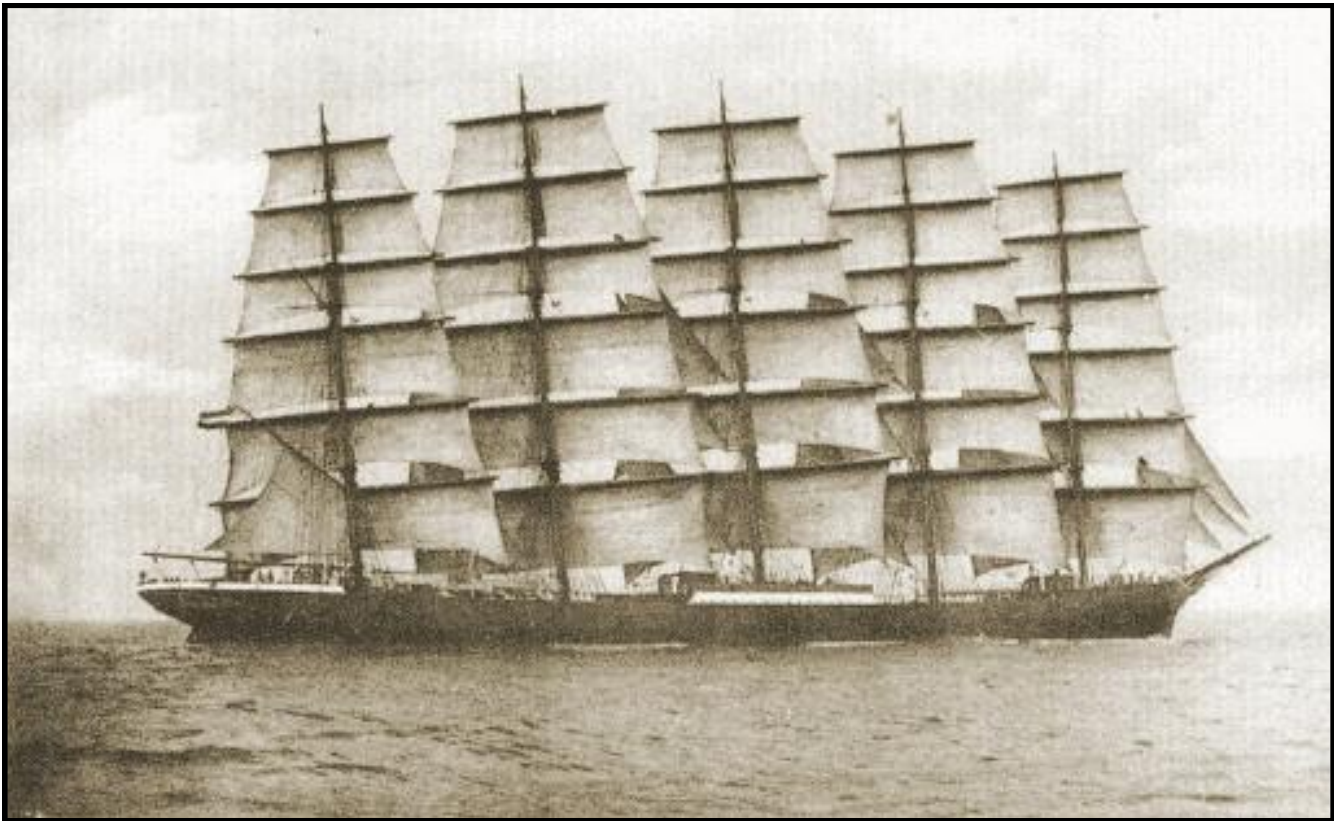
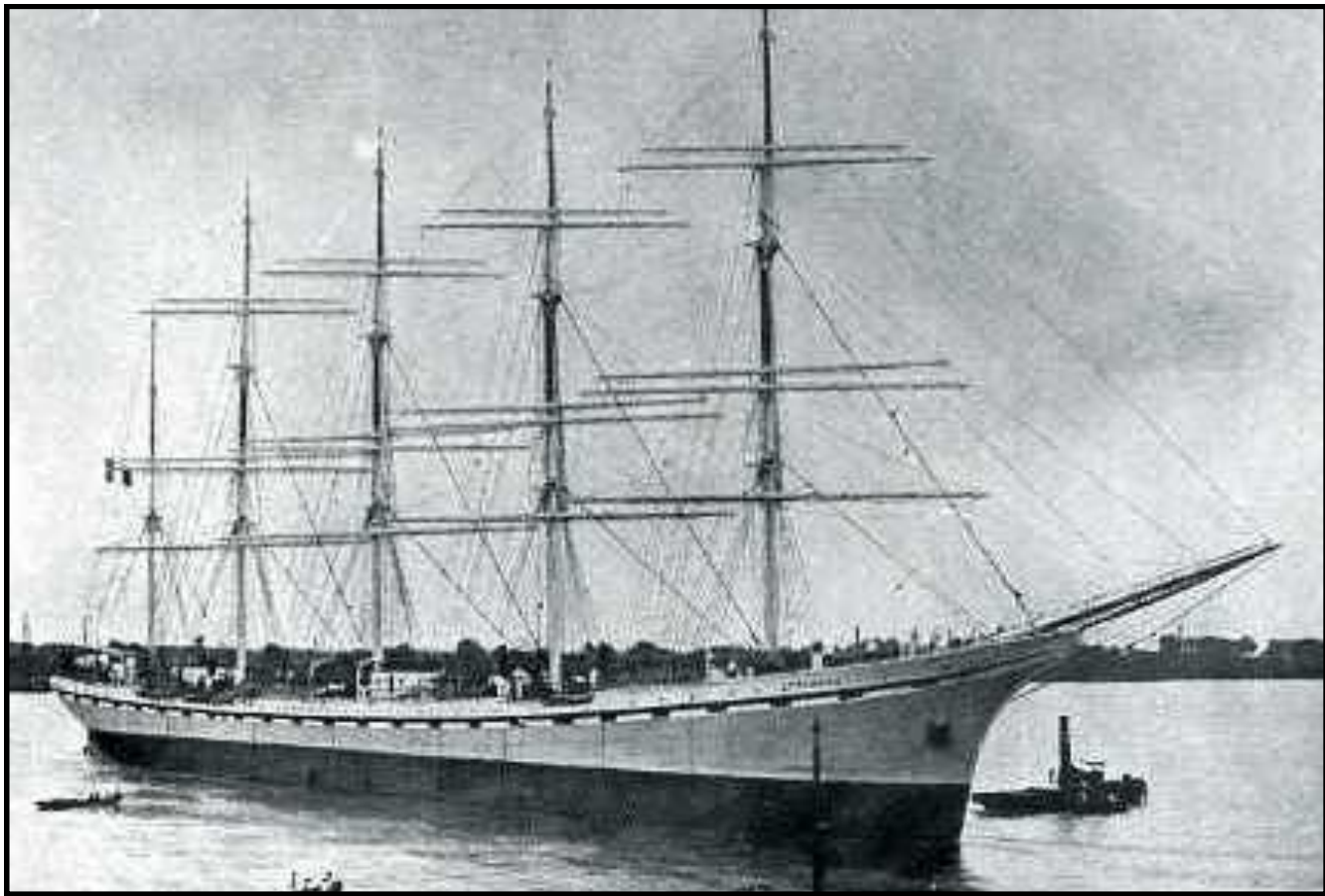
Drawing of Comparable Vessels *(Designed by Dykstra & Partners)*

Dykstra & Partners - Portfolio



Large Sailing Vessels from the Past

Square Rigged Cargo Ships



Name:	France II		
Year:	1913	LOA:	158.0 m
Type of ship:	Cargo Ship	Beam:	16.9 m
Type of rig:	5 mast barque	Sail Area:	6350 m ²

Name:	Preussen		
Year:	1902	LOA:	147 m
Type of ship:	Cargo Ship	Beam:	16.4 m
Type of rig:	5 mast full rig	Sail Area:	6806 m ²

Large Sailing Vessels from the Past

Schooner Rigged Cargo Ships



Name:	Thomas W. Lawson		
Year:	1902	LOA:	145 m
Type of ship:	Cargo Ship	Beam:	15.0 m
Type of rig:	7 masted schooner	Sail Area:	4331 m ²

Name:	Wyoming		
Year:	1909	LOA:	137.1 m
Type of ship:	Cargo Ship	Beam:	15.3 m
Type of rig:	6 masted schooner	Sail Area: m ²

Large Sailing Vessels from the Past

Square Rigged Sail Training Ships



Name:	Sedov	(Currently sailing)
Year:	1921	LOA: 117.5 m
Type of ship:	Training Ship	Beam: 14.9 m
Type of rig:	4 mast barque	Sail Area: 4195 m ²

Name:	Kruzenshtern	(Currently sailing)
Year:	1926	LOA: 114.4 m
Type of ship:	Training Ship	Beam: 14.0 m
Type of rig:	4 mast barque	Sail Area: 3400 m ²

Contemporary Large Sailing Vessels

Motor Sailing Cruise Ships



Name:	Wind Surf		
Year:	1990	LOA:	187.0 m
Type of ship:	Cruise Ship	Beam:	20.0 m
Type of rig:	5 mast motor sailor	Sail Area:	2497 m ²

Name:	Wind Star		
Year:	1986	LOA:	134.1 m
Type of ship:	Cruise Ship	Beam:	15.8 m
Type of rig:	4 mast motor sailor	Sail Area:	1997 m ²

Contemporary Large Sailing Vessels

Sailing Cruise Ships



Name:	Royal Clipper		
Year:	2000	LOA:	133.8 m
Type of ship:	Cruise Ship	Beam:	16.5 m
Type of rig:	5 mast full rig	Sail Area:	5203 m ²

Name:	Sea Cloud II		
Year:	2001	LOA:	117.0 m
Type of ship:	Cruise Ship	Beam:	16.0 m
Type of rig:	3 mast barque	Sail Area:	2800 m ²

Large Sailing Vessels by Dykstra & Partners

Built & Sailing



Name:	Athena		
Year:	2004	LOA:	90.0 m
Type of ship:	Yacht	Beam:	12.2 m
Type of rig:	3 mast gaff schooner	Sail Area:	2660 m ²

Name:	The Maltese Falcon		
Year:	2006	LOA:	88.0 m
Type of ship:	Yacht	Beam:	12.4 m
Type of rig:	3 mast dynarig	Sail Area:	2400 m ²

Large Sailing Vessels by Dykstra & Partners

Built & Sailing



Name:	Clipper Stad Amsterdam		
Year:	2000	LOA:	76.0 m
Type of ship:	Sailing Passenger Ship	Beam:	10.5 m
Type of rig:	3 mast full rig	Sail Area:	2200 m ²

Name:	Clipper Cisne Branco		
Year:	2000	LOA:	76.0 m
Type of ship:	Training Ship	Beam:	10.5 m
Type of rig:	3 mast full rig	Sail Area:	2200 m ²

Large Sailing Vessels by Dykstra & Partners

Preliminary Designs



Name:	3 Mast Modern-Classical Staysail Schooner		
Year:	<i>Preliminary Design</i>	LOA:	126.4 m
Type of ship:	<i>Yacht</i>	Beam:	18.0 m
Type of rig:	<i>3 mast staysail schooner</i>	Sail Area:	4500 m ²

Name:	The Windjammer Project		
Year:	<i>Preliminary Design</i>	LOA:	95.0 m
Type of ship:	<i>Yacht</i>	Beam:	12.9 m
Type of rig:	<i>3 mast barque</i>	Sail Area:	3000 m ²

Large Sailing Vessels by Dykstra & Partners

Preliminary Designs



Name:	Sail Training Vessel		
Year:	<i>Preliminary Design</i>	LOA:	<i>107.0 m</i>
Type of ship:	<i>Training Ship</i>	Beam:	<i>14.0 m</i>
Type of rig:	<i>3 mast full rig</i>	Sail Area:	<i>3500 m²</i>

Name:	Sail Training Vessel		
Year:	<i>Preliminary Design</i>	LOA:	<i>82.3 m</i>
Type of ship:	<i>Training Ship</i>	Beam:	<i>11.1 m</i>
Type of rig:	<i>3 mast full rig</i>	Sail Area:	<i>2630 m²</i>

Large Sailing Vessels by Dykstra & Partners

Preliminary Designs



Name:	2 Mast Aerorig Schooner		
Year:	<i>Preliminary Design</i>	LOA:	87.9 m
Type of ship:	<i>Campaigning vessel</i>	Beam:	14.1 m
Type of rig:	<i>2 mast Aerorig schooner</i>	Sail Area:	1540 m ²

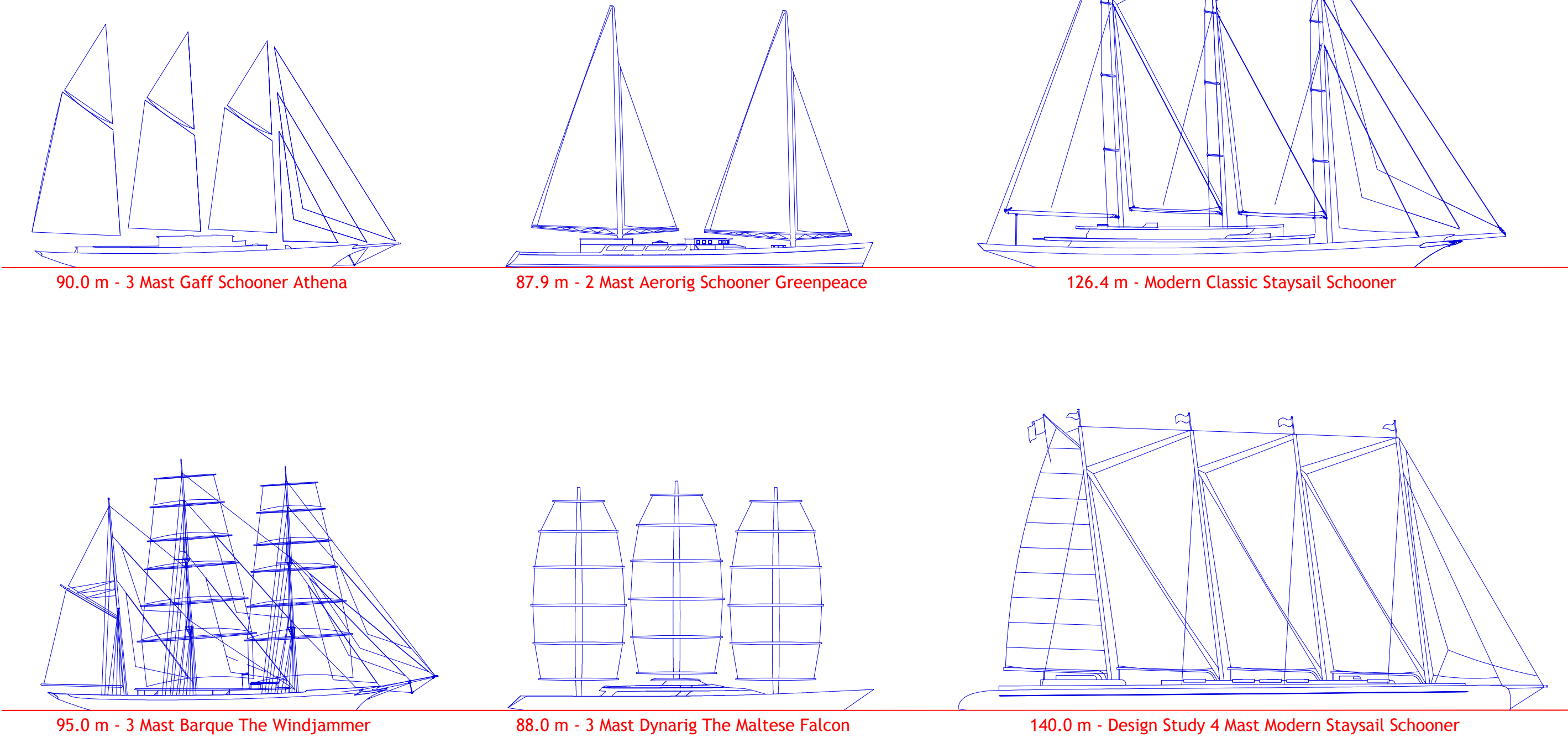
Name:	Rainbow Warrior III		
Year:	<i>To be delivered in 2011</i>	LOA:	57.9 m
Type of ship:	<i>Campaigning vessel</i>	Beam:	11.0 m
Type of rig:	<i>A-frame staysail schooner</i>	Sail Area:	1290 m ²

Summery of Large Sailing Vessels

Name	Year	LOA [m] <i>(Length over Spars)</i>	Beam [m]	Sail Area [m ²]	Type of Rig	Type of Vessel	Hull Material
Wind Surf	1990	187.0 m	20.0 m	2497 m ²	5 mast motor sailor	Cruise ship	Steel
France II	1913	158.0 m	16.9 m	6350 m ²	5 mast barque	Cargo ship	Steel
Preussen	1902	147.0 m	16.4 m	6806 m ²	5 mast full rig	Cargo ship	Steel
Wyoming	1909	145.0 m	15.3 m		6 mast schooner	Cargo ship	Wood / Iron
Wind Star	1986	134.1 m	15.8 m	1997 m ²	4 mast motor sailor	Cruise ship	Steel
Royal Clipper	2000	133.8 m	16.5 m	5203 m ²	5mast full rig	Cruise ship	Steel
Modern Classic Staysail Schooner	Preliminary Design	126.4 m	18.0 m	4500 m ²	3 mast staysail schooner	Yacht	Steel
Sedov	1921	117.5 m	14.9 m	4195 m ²	4 mast barque	Training ship	Steel
Sea Cloud II	2001	117.0 m	16.0 m	2800 m ²	3 mast barque	Cruise ship	Steel
Kruzenshtern	1926	114.4 m	14.0 m	3400 m ²	4 mast barque	Training ship	Steel
Sail Training Ship	Preliminary Design	107.0 m	14.0 m	3500 m ²	3 mast full rig	Training ship	Steel
Windjammer Project	Preliminary Design	95.0 m	12.9 m	3000 m ²	3 mast barque	Yacht	Steel
Athena	2004	90.0 m	12.2 m	2660 m ²	3 mast gaff schooner	Yacht	Aluminum
The Maltese Falcon	2006	88.0 m	12.4 m	2400 m ²	3 mast dynarig	Yacht	Steel / Aluminum
Greenpeace	Preliminary Design	87.8 m	14.1 m	1540 m ²	2 mast aerorig schooner	Campaigning vessel	Steel
Sail Training Ship	Preliminary Design	82.3 m	11.1 m	2630 m ²	3 mast full rig	Training vessel	Steel
Clipper Stad Amsterdam	2000	76.0 m	10.5 m	2200 m ²	3 mast full rig	Passenger ship	Steel
Clipper Cisne Branco	2000	76.0 m	10.5 m	2200 m ²	3 mast full rig	Training ship	Steel
Rainbow Warrior III	To be delivered in 2011	57.9 m	11.0 m	1290 m ²	2 mast A-frame staysail schooner	Campaigning vessel	Steel / Aluminum

Drawing of Comparable vessels

(Designed by Dykstra & Partners) Scale 1:1000



Photo's in this portfolio by Tim Wright, Jens Fisher, Carlo Borlenghi, Onne van der Wal, Giuliano Sargentini, Bugsy Gedlek, Rob Bonte, Beken of Cowes, Florine Gongriep e.o.
Illustrations by Dykstra & Partners, Henk Jukkema, Ken Freivokh, e.o.

DYKSTRA & PARTNERS - PORTFOLIO

Portfolio Large Sailing Yacht Designs



1969-1980, racing and project management
Dykstra & Partners was founded as Ocean Sailing Development Holland BV in 1969 by former director, overlap between the various disciplines.

For the first ten years the office was mainly involved with sailing and (shorthanded) ocean racing, in the capacity of sailing as well as managing the projects. However, the specialisation soon included part time yacht design and the building supervision of ocean going sailboats and fast shorthanded racers, using the experience of Gerard Dijkstra as skilled sailor. In 1975 the first full design was made: the solo racer "Bestevaer".

1981-1993, development work in Third World Countries
In 1978 the interest of the company widened to include 'appropriate technology' design. These commercial cargo and fishing vessels can be sailing auxiliaries or can be fully powered. In Indonesia, the company was much involved in the 'appropriate technology' vessels and the infrastructure needed to build them. By now, over 150 vessels have been built in Indonesia to our design

Of interest is the research done in suitable laminated wooden boat design, production techniques and operational aspects. Designing the boats was only one aspect of the work. Feasibility studies for local yards, training of staff and craftsmen, social & economic aspects and lecturing at local universities were all part of the programme. The value of the programme in Indonesia was recognised by the fact that, when Dutch project help was stopped in Indonesia in the early Nineties, our Development of Laminated Wooden Boats project continued under direct sponsorship of the Indonesian Government.



The appropriate technology laminated wooden boats build made better use of local timber resources, provided an opportunity for artisan builders to continue in the future with their trade. The fishing vessels aimed at selective fishing and were more seaworthy to allow access to new fishing grounds away from the coral reefs. In Mauritania the sailing fishing boat was designed for the Imraquen fishermen and provided one of the means to protect their nature reserve against poaching by big fishing boats.

1993- Present, designing yachts and ships
Since 1986 the re-design of the Big Class classic racing yachts of the Twenties and Thirties became a major activity. Designing rigs and sail handling systems for even the biggest vessels is another specialisation. In 1994 project help to Third World Countries became a minor activity and full attention was directed at designing sailing yachts. Major Big Class reconstructions are: "Endeavour", "Velsheda", Shamrock V", "Adela" and the later work with "Reliance", "Britannia" and a number of J's.



The bureau developed a modern-classic (spirit of tradition) schooner concept, a series of semi custom build schooners with clipper bow, which range is still being extended. They have by now been designed in the lengths up till 360 ft. This type of vessel is a contemporary classic yacht, the exterior and interior styling is according to the best traditional values, but underwater body and systems are modern state of the art. Sail handling and rig performance is also improved, however the classic profile of the rig is hardly changed.



This was not the case for the AERORIG 63 ft sloop and - 60 ft schooner, though the hull is of the above concept they have been fitted with the free standing, fully rotating AERORIG.

Traditional looking yachts with a 'spoon' or 'Viking' bow are being developed. They have been designed in the length of 33-145ft. Also in this case the traditional good looks and valued atmosphere are combined with a modern, high performance rig and underwater body. This concept entails a ballasted centreboard and water ballast tanks to provide stability or just a fin keel with bulb for the vessels without draft constraints.

In 1996 the design work started on a 650 GT, fully square rigged clipper, the "Stad Amsterdam". Two of these ships have been launched to date, one as a Solas >36 passenger vessel, one as a sail training vessel. A number of design studies for larger sail training vessels were made.

The spirit-of-tradition yachts build by Kooi en Mast Shipyard are marketed under the name "Bestevaer". They can be with spoon bow or with the plumb bow of the pilot cutter.

In 1999 the company changed its name to Dykstra & Partners when Thijs Nikkels became a partner. Thijs has been working with Gerard since 1991. Current staff is 7 naval architects and can be expanded with freelance staff if needed. In addition to the staff the office has built up long standing relations with universities, research institutes and engineering companies. (Delft University, Wolfson Unit, Marcon I.V., Vuijk Engineering etc.). Research and development at sea, in the towing tank, at yards and, last but not least, in the wind tunnel has always been a major support for our designs.

Around 2000 the cutter type (straight stem) spirit-of-tradition concept saw the light, inspired by the owner of Christoffel's Lighthouse, the first pilot cutter designed by Dykstra & Partners.

1999 Is also the year that the work started on the largest fore-and-aft rigged sailing yacht in the world. The 85 l.o.d. schooner "Athena" was built at Royal Huisman Shipyard. Our first design "Bestevaer" (1975) was also build at the Huisman Shipyard. In 2003 the "Bestevaer 2" was launched, this is Gerard Dijkstra own semi-retirement yacht and is another example of the pilot cutter yacht. In 2006 "Maltese Falcon" was launched, an 89 m clipper yacht fitted with the innovative DynaRig, now called FalconRig. By many the launch of the Falcon is considered the start of a new chapter in yachting history.



DYKSTRA & PARTNERS - NAVAL ARCHITECTS THE TEAM

From left to right, the Dykstra team onboard the "Windrose of Amsterdam":

- Mark Leslie-Miller

- Edwin Luijf

- Erik Wassen

- Jeroen de Vos

- Hilbert ten Have

- Anneliek van der Linde

- Thijs Nikkels

- Gerard Dijkstra

- Loon Dijkstra (not in picture)

- Gil Wang (not in picture)

- Thomas van Es (not in picture)

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DYKSTRA & PARTNERS PORTFOLIO

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