

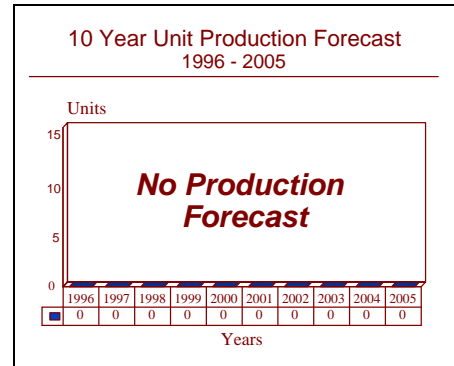
ARCHIVED REPORT

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Vosper 56m FAC - Archived 12/97

Outlook

- Four under construction for Qatar
- Additional construction unlikely



Orientation

Description. Fast Attack Craft to patrol coastal waters and conduct anti-surface strike missions.

Sponsor

Vosper Thornycroft Ltd
 Victoria Road
 Woolston
 Southampton SO9 5GR
 UK
 Tel: +44 1703 445144
 Fax: +44 1703 421539

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 Fax: +44 1703 421539

Licensee. No production licenses have been granted.

Status. Production and service.

Total Produced. A total of 14 ships are in service and two are under construction.

Platform

<u>Name</u>	<u>Country</u>	<u>Builder</u>	<u>Ordered</u>	<u>In Service</u>
670 Ramadan	Egypt	Vosper Thornycroft	9/1977	7/1981
672 Khyber	Egypt	Vosper Thornycroft	9/1977	9/1981
674 El Kadessaya	Egypt	Vosper Thornycroft	9/1977	4/1982
676 El Yarmouk	Egypt	Vosper Thornycroft	9/1977	5/1982
678 Badr	Egypt	Vosper Thornycroft	9/1977	6/1982
680 Hettein	Egypt	Vosper Thornycroft	9/1977	10/1982
B10 Dhofar	Oman	Vosper Thornycroft	6/1980	8/1982
B11 Al Sharqiyah	Oman	Vosper Thornycroft	1/1981	12/1983
B12 Al Batnah	Oman	Vosper Thornycroft	1/1981	1/1984
B14 Mussandam	Oman	Vosper Thornycroft	1/1986	3/1989
P3126 Nyayo	Kenya	Vosper Thornycroft	9/1984	7/1987
P3127 Umoja	Kenya	Vosper Thornycroft	9/1984	9/1987

<u>Name</u>	<u>Country</u>	<u>Builder</u>	<u>Ordered</u>	<u>In Service</u>
Q04 <i>Barzan</i>	Qatar	Vosper Thornycroft	6/1992	11/1995
Q05 <i>Huwar</i>	Qatar	Vosper Thornycroft	6/1992	5/1996
Q06	Qatar	Vosper Thornycroft	6/1992	1997
Q07	Qatar	Vosper Thornycroft	6/1992	1997

Application. Maritime surveillance and anti-surface strike warfare. FAC is between US\$75 and US\$95 million, depending on equipment fit.

Price Range. Based on information from Vosper-Thornycroft, the cost of the latest generation Vosper

Technical Data

<u>Dimensions</u>	<u>Metric</u>	<u>US</u>
Length:	56.3 m	185.7 ft
Beam:	9.0 m	29.5 ft
Draft:	2.3 m	7.5 ft
Displacement:		376 tons full load
<u>Characteristics</u>		
Speed:	35 knots	
Crew:	7 officers, 40 enlisted	
<u>Electronics</u>		
	<u>Type</u>	<u>Quantity</u>
Radars:		
Search:	Signaal MW.08	1
Fire Control:	Signaal STIR	1
Navigation:	Signaal ZW.06	1
Electronic warfare:		
ESM:	Thomson-CSF DR-3000	1
ECM:	Salamandre	3
COMINT:	Telegon 10	1
Command/control:		
Command system:	SEWACO FD	1
Datalinks:	Link Y	1
<u>Weapons</u>		
	<u>Type</u>	<u>Quantity</u>
Gun:	OTO Melara 76 mm L62	1
	Goalkeeper CIWS	1
Missiles:	Matra Mistral	6
	MM-40 Exocet	8
<u>Propulsion</u>		
	<u>Type</u>	<u>Quantity</u>
Main engines:	MTU 20V 538 TB93	4
Propellers:	Variable-pitch	4

Design Features. These 56 meter craft, currently under construction, are directly derived from the very successful Vosper Thornycroft 56 meter patrol craft built for Oman and Kenya. Taking the earlier 56 m hull, Vosper Thornycroft has totally redesigned the superstructure and internal arrangements to produce a modern and flexible design.

The above water hull form has been modified by increasing the freeboard amidships and widening the beam at the weatherdeck by flaring the topsides. These modifications create the space for a second accommodation deck at tank level and unobstructed

external fore and aft access along the upper deck either side of the superstructure. Seagoing habitability is thus improved and crew fatigue reduced due to the decreased subjective motion and ambient noise. The below decks arrangement is excellent with a minimum of watertight doors, since the only spaces aft of the machinery rooms are auxiliary equipment areas and stores.

The Vita design offers greatly improved seakeeping and high speed allied to economical performance. Active roll damping fin stabilizers add to the Vita's capability to operate in high sea states. The hull and superstructure have been carefully designed to minimize the radar signature,

thereby enhancing the vessel's very sophisticated electronic warfare capability comprising DR-3000 ESM, Salamandre ECM and Barricade chaff launchers.

The Vita benefits from a fully integrated damage control system linked to a comprehensive fire fighting system. Watertight zoning ensures that the vessel meets in full Royal Navy stability requirements of flooding in any two adjacent main compartments.

Crew numbers have been reduced to a minimum for the operation and maintenance of a vessel of this complexity, by utilization of a high degree of automation, both in the operation of its weapon systems and the machinery. Furthermore, ease of maintenance has been a preeminent consideration throughout the design.

The Vita, capable of 34.5 knots, is driven by four MTU diesels split between two machinery spaces, each driving through a reverse/reduction gearbox into a fixed-pitch propeller. The machinery spaces can operate completely independently of each other. The Vosper Thornycroft machinery control and surveillance system allows one-man operation of three main propulsion, electrical generation and auxiliary systems from the bridge using color VDU consoles. The main machinery spaces are concentrated well aft of amidships so that all of the operational and accommodation spaces are arranged

forward of them in the waist of the ship, where sea motion is minimized.

Operational Characteristics. The weapons suite will be the standard Western FAC armament comprising an OTO-Melara 76 mm L62 gun forward and a CIWS, in this case Goalkeeper aft. In addition to these, the ships will have a Sadral launcher for the Matra Mistral anti-aircraft missile. The main anti-ship punch is provided by two four-round MM-40 Exocet missile launchers.

The vessel is capable of surface engagements, with missiles or guns; air defense with medium-caliber gun, close in weapon system or surface-to-air missiles; or coastal bombardment, all from a stabilized platform. Comprehensive weapon sensors, grouped around a single mast (thereby minimizing weapon blind arcs) are fully integrated with the weapon systems through a command system equipped with multi-function consoles and color displays.

The command and control system is the SEWACO FD developed by Signaal, integrated with the Signaal Multi-Role Radar (MRR) and STING fire control radar, and an IRSCAN electro-optical tracker. The processing system for all computers will be provided by Sun SPARC boards that will be available through the systems. This will permit interchange of boards for reduced down time.

Variants/Upgrades

Vita. The Vita concept provides a versatile platform capable of accepting a wide variety of weapon fits without alteration to the basic hull design. Several versions of the design have been proposed, including an anti-submarine version with variable-depth sonar and torpedo armament, and an EEZ patrol version for customers such as coast guard or customs authorities, where the good seakeeping performance of the hull is a valuable asset under severe conditions. The EEZ versions are capable of carrying large fast seaboats or operating a small helicopter for search and rescue duties.

Ramadan Class. The original 56 m design produced for Egypt. A highly modified derivative of the Russian Project 205M (OSA-II) incorporating Vosper Thornycroft hull technology to improve performance and seakeeping. An entirely Western armament was fitted, including the standard OTO Melara 76 mm L62 and Breda-Bofors Twin Fast Forty guns and four Otomat Mark 1 missiles. The radar outfit is entirely Marconi with combat integration

performed by the Ferranti CAAIS command system. These ships are to be refitted with an increased SSM armament.

Nyayo Class A derivative of the Ramadan class with a lengthened hull and equipped with Oerlikon 30 mm guns in place of Breda-Bofors 40 mm. A more comprehensive EW fit is installed, based around the Racal Cutlass/Cygnus integrated ESM/ECM systems. The Omani craft differ only in carrying MM-38 Exocet.

Europatrol 250. A downsized derivative of the Vita design intended for coastal patrol and maritime policing work. The hull is 47.3 m long, 7.5 m in beam and 2.5 m draft. The craft displaces 250 tons and is powered by three diesels of aggregate power 9,750 kW to give a speed in excess of 40 kts. The hull is of mild steel and the superstructure aluminum alloy. Normal armament consists of a twin 40 mm mount forward and a single 30 mm gun aft, although light anti-ship missiles could be installed if so required.

Program Review

Background. When Egypt signed a peace treaty with Israel, supplies of military equipment from Soviet sources

stopped dead. Egypt was, therefore, forced to seek other suppliers to equip its armed forces and to start a major

program of rearming its military forces with Western equipment. For obvious reasons, most attention was diverted to the army and air force, while the Egyptian navy had to make do with what limited resources were available to it.

A program was initiated to make the best of this situation. As part of this effort, Vosper Thornycroft received a contract to build six large, new fast attack craft, the Ramadan class, and to refit six Egyptian-built Project 183R class (NATO codename Komar) FAC with Western missiles and electronics as the October class. The large FAC design, which shared some features with the Russian Project 205M in order to maintain compatibility, became the basis of the Vosper 56 m design.

A substantially enhanced version of this design was introduced to the market in 1980. This featured a longer hull and more sophisticated electronics, features proposed for the Ramadan class but discarded on cost grounds. Two ships of this type were ordered for Kenya, but the design was marginalized by the successes of, firstly, the French Combattante design and, later, the Lurssen TNC-

45/52/65 family. Only a single further success was achieved, with Oman, which then had very strong naval links with the UK.

The design was relaunched, as the Vita class, in 1990 with substantial modifications to the hull form, intended to enhance seagoing performance and seakeeping over ideal-conditions speed. This was followed in 1993 by a reduced version, 47 m in length, which features a drastically reduced armament and is intended to fulfill the coastal patrol role.

The Vita FAC-M design received its launch order from Qatar in June 1992. This would provide work for the yard for at least three years. First steel on the new ships was cut on July 20, 1993. Completion of the four ships is taking place, as scheduled, between November 1995 and May 1997. The Vita class was one of the contestants bidding for the Kuwaiti requirement for a total of eight FAC-M. This requirement was subsequently downrated to a coastal patrol boat, but the Vosper contestant was beaten by a design from CMN. Since that point, there has been no discernible interest in the Vita design.

Funding

The Vosper 56 m fast attack craft was developed as a private venture using Vosper-Thornycroft corporate funding.

Recent Contracts

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
CSEE		Feb 1994 - DR-3000S ESM, Salamandre jammers and DAGAIE chaff launchers for Qatari Vita class FAC-M.

Timetable

	1977	Ramadan class ordered by Egypt
	1984	Nyayo class ordered by Kenya
	1992	Qatari construction contract awarded
Jul	1993	First steel cut
Nov	1995	First Qatari ship to be delivered
	1996	First Qatari ship to be commissioned
May	1997	Program will be complete

Worldwide Distribution

Egypt (6 Ramadan in service)

Kenya (2 Nyayo in service)

Oman (4 Nyayo in service)

Qatar (2 Vita built, 2 building)

Forecast Rationale

When four Royal Navy Lynx helicopters blew the Iraqi navy out of the water, they destroyed the credibility of the missile-armed fast attack craft with it. For several years it had been speculated by informed analysts (now, it is apparent, on both sides of the NATO/Soviet divide) that the existing Fast Attack Craft (FAC) concept was deeply flawed. The Battle of the Bubiyan Channel proved their contention to the hilt. The idea of the FAC-M as then constituted was no longer viable.

Designers and operators of such craft were faced with a choice of directions. They could enlarge the design of the ship to around a hull length of 85 meters (equating to around 1050 tons) and provide a balanced armament which permits the platform to properly defend itself. The alternative was to equip a much smaller platform with long-range hypersonic missiles which are very difficult to shoot down. The hope in this latter case is that the platform can use the longer range of its missiles to fire its salvo before it is sunk by the prowling helicopters.

Both approaches have their problems. The new generation of 85 m light corvettes are apparently more expensive than their smaller predecessors and require larger crews. Actually this is misleading, since the cost increment is due to the added weapons and electronics; the hull itself is no more expensive and is substantially less costly to maintain. This trend is now represented by the French Combattante V and BR-65, the Vosper Thornycroft 83 m corvette and the MEKO-100 and MEKAT designs. Equipping the smaller craft with long-range missiles raises serious problems of target acquisition — relying on the FAC's own sensors with their inherently limited range means that the Lynx crew will be painting up the kill mark long before the FAC ever got to a firing solution. Perhaps the Russian Project 1241.1RE Molniya FAC-M is the best example of this type of FAC, although it requires some form of airborne target acquisition if it is to use its lethal P-270 Moskit missiles to best advantage.

The Vita class represents an attempt by Vosper Thornycroft to wring the last measure of performance out of an aging basic design before it is completely and obviously outmoded. It shares all the vulnerabilities of the

traditional FAC-M. It has weak defenses against air attack, although the addition of Mistral missiles and a Goalkeeper CIWS does provide a marginal capability. A major advance over earlier designs is the inclusion of a proper integrated command system in a customized operations room. EW defenses are also enhanced and it has a first-class sensor array. Finally, its MM-40 missiles are very elusive and difficult to shoot down. The fact that these ships carry Link Y as standard strongly suggests that they are intended to work with helicopter gunships in support.

Overall, the Vita class is probably comparable with the Swedish Goteborg and the French Combattante IVNG. All are hopelessly outclassed by the Russian Project 1241.1RE and Project 1241.8 Molniya designs which are faster, more agile, better armed and have superior electronic outfits. The Molniya design is also much less expensive than any competitor, but there are serious doubts about product support.

As a result of this environment, the 56 m FAC designs are in the dying days of their presence in the international market. They are being replaced by larger, more capable ships. Contrary to the opinions expressed in some quarters, it is NOT possible to build a balanced design on a hull this small and, as a result, proficiency in one area is compensated by deficiencies in all others. These deficiencies are too easy to exploit.

There are, however, some circumstances in which the 56 m design has substantial capabilities. In most of these, for example, the Baltic shoals or Norwegian fjords, the appropriate navy designs and builds using domestic resources. Most of the others (Greece and Turkey in the Aegean — shooting at each other for example) have long-standing commitments to other design teams. In this environment, the Vita design has little to commend it, although it may yet find a few small orders, largely due to the reputation of the Vosper Thornycroft name. Vosper Thornycroft is a very highly skilled design group with considerable commercial acumen. These qualities are being rewarded with their 83 m design, not the Vita.

Ten-Year Outlook

No production is forecast

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