

case study



## Halifax fans meet Hamworthy Combustion's needs for FPSO boilers

As global oceanic exploration for and production of oil and gas moves into ever deeper waters, the role of Floating Production Storage & Offloading facilities (FPSOs) has been emphasised. FPSOs initially were redundant oil tankers converted to floating static processing facilities able to offload onto mobile tankers but more recently customer designed new-build vessels are making greater inroads into the market.



FPSO equipped with Halifax Fan boiler FD fans.

Hamworthy Combustion is a world leader in combustion engineering with a strong reputation in the Marine and Offshore market sectors and provides turnkey boiler packages for the offshore market. It enjoys a world leading position in the FPSO market in which it has been active for over 30 years.

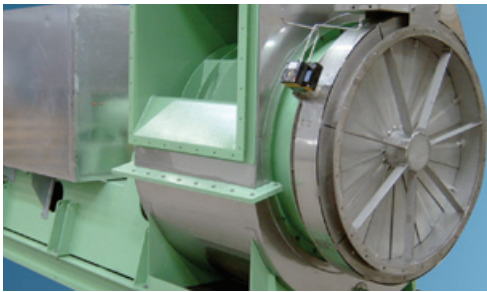
Among the processes carried out on board the FPSO are separating gas from the crude oil, dewatering and removal of sand and debris. After processing the crude is

pumped to the cargo tanks. Steam turbines are employed to drive electrical generators and cargo pumps in addition to tank heating and hotel duties.

This requires a large and reliable source of steam, produced from dual fuel boilers using gas when available as the primary fuel, with diesel oil back up and in some cases crude oil and heavy oil are also used. The burning of traditionally flared-off gas gives an almost free source of on-board

power with the added advantage of it being self-supporting.

With twin gas-fired boilers per FPSO, powerful forced draft fans are required to feed the boilers and for this function Hamworthy Combustion has chosen non-sparking fans designed, manufactured and tested by Halifax Fan.



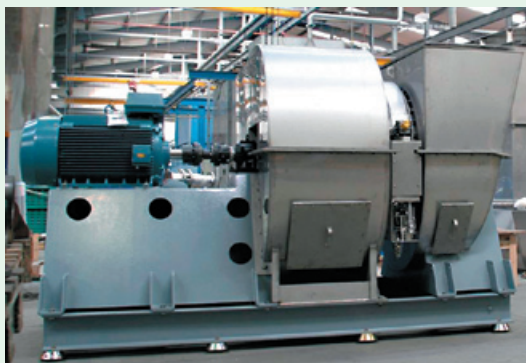
The fans supplied to date, ranging in power from 70kW to 315kW and from 685 to 1300 mm diameter are mainly medium pressure, high volume, high efficiency models from Halifax's Beaufort range. These are often fitted with inlet vane control dampers to meet the wide operating conditions demanded from purge to minimum air flow at start-up. All are designed to a marine environment specification agreed between Halifax Fan and Hamworthy Combustion. It covers anti-corrosive construction necessitating stainless steel construction of critical parts, special paint finish throughout and mechanical design features to benefit the end user in terms of long life and ease of maintenance. With FPSOs located from the equator to the frozen wastes of the arctic, the fans have to be bespoke tailored to meet not only the specific demands of the final end user, the boiler fuel type but also the intended geographic location of the FPSO.

According to Richard Price of Hamworthy Combustion "We've formed a very effective partnership with Halifax Fan for the fans for



Marine specification No46 BFB fan with inlet vane control

FPSOs. It wasn't just a matter of finding a competitive supplier; we needed a supplier who could demonstrate proven reliability in demanding environmental conditions and would work closely with us to engineer the fans for each and every project. Halifax also has the capability to test every fan in-house prior to despatch, giving us the confidence that once installed, the fans would perform to specification.



Halifax N. 56 backward curved fan designed to API673, 2nd edition 2002. Impeller mounted between bearings on common baseframe with anti vibration mounts. c/w IVC, inlet box and inlet silencer. Fan case and inlet box acoustically lagged.

### Application benefits

- Modified proven design to meet arduous operating environment
- Non-sparking design meets marine hazardous application requirements
- In-house test facilities ensure customers QA requirements are met
- Halifax Fan's project management capability and attention to detail leaves you free to concentrate on your project

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