

Small fast WIG vessel challenges high-speed marine transport market

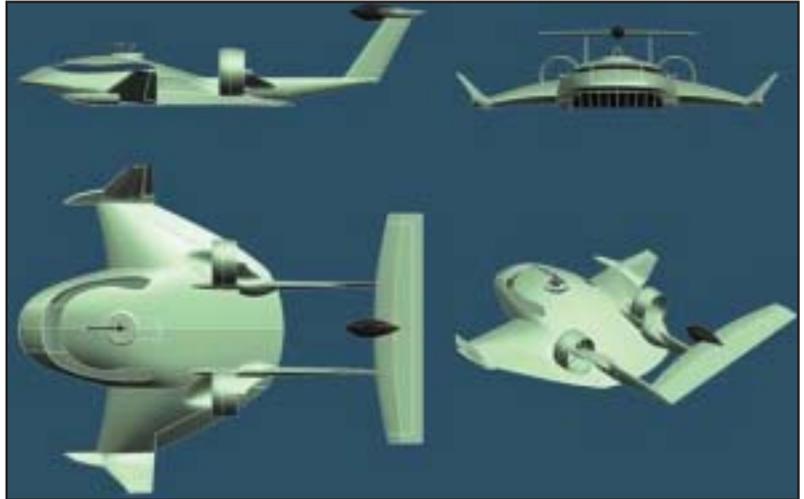
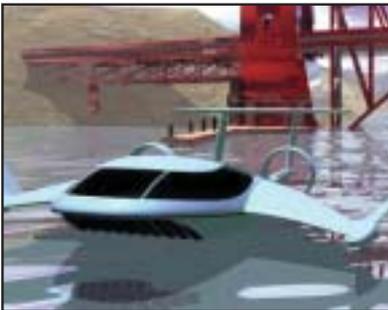
A new design for a wing in ground effect (WIG) craft has recently been announced by joint German companies Fischer Flugmechanik and AFD Airfoil Development GmbH. This consortium believes that its new proposals are likely to challenge some sectors of the present high-speed marine marketplace.

The new vehicle is to be known as the Hoverwing HW20, and is a sea skimming WIG with a cruising speed of 90knots. The vehicle is aimed at short-range applications such as inter-island, coastal delta/estuary transport in parts of the world where the sea-state is favourable. Markets include the Caribbean, Mediterranean, and East Asia.

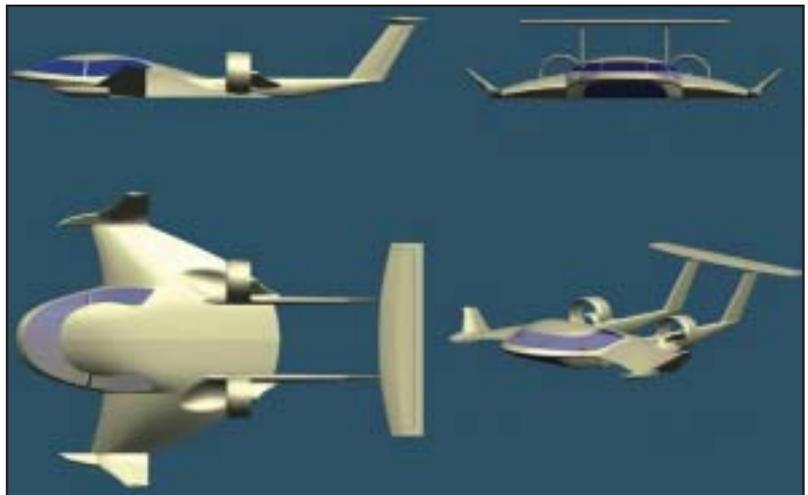
The Hoverwing is so called because, for take-off, it uses simple retractable skirts to contain a static hovercraft-type air cushion between the twin elements of the catamaran-style main hull. This reduces the total power required for acceleration to the speed at which transition to the sea-skimming ground-effect mode can be seamlessly achieved.

The vehicle will be classified as a marine vessel and is not capable of free flight.

Artist's impression of the civil HW20 ready for takeoff.



General arrangement drawing of HW20 in military configuration.



General arrangement drawing of the civil version of the HW20.

TECHNICAL PARTICULARS HOVERWING HW20

Length, oa.....	22.44m
Width.....	17.34m
Width, wings folded.....	6.30m
Height.....	4.94m
Empty weight.....	6534kg
Useful load.....	2460kg
Take-off weight.....	8994kg
Cruise speed.....	94knots (175km/h)
Range (no reserves).....	500km
Cruise height.....	<=1.75m
Cruise power.....	465ps
Max wave height take-off.....	0.75m
Max wave height cruise.....	2.5m

Fischer Flugmechanik/AFD has worked closely with the German classification society, Germanischer Lloyd, on the development of similar vessels and it is envisaged that this relationship will continue.

Both civil and paramilitary variants are planned. The civil variant offers a 2.4tonne payload and can be configured as a 20-seat ferry, or a mixed passenger/freight workboat. The military version can carry a dozen fully armed troops, can be fitted with an assortment of weaponry, and has stealth possibilities. Paramilitary applications include anti-drug running, anti-piracy, EEZ patrol, search and rescue, and special operations.

In its civil role the 90knot cruising speed will enable operators of the HW-20 to offer a transit time competitive with helicopter

and fixed wing aircraft. As a paramilitary craft the designers claim that the HW-20 will create new possibilities. It will be able to offer some of the utility presently in the domain of more expensive rotary or fixed wing aircraft. The speed of the HW-20 will also give it a genuine capability to intercept almost all other marine vessels.

Built primarily from composites, the HW20 is design offers a radical but simple vehicle, being little more complex than a conventional high-speed boat. The efficiency of the 'ground-effect' also allows the design consortium to claim extremely low fuel consumption. Simplicity and efficiency will be reflected in low capital and running costs. Because the craft is not in contact with the water when cruising but glides over it on a dynamic air cushion, it does not subject its occupants to

seasickness; nor does it create any wash.

Graham Taylor, of Hypercraft Associates, the representing consultant for Fischer Flugmechanik/AFD says, 'The HW20 WIG offers a high-speed short range transport solution that combines simplicity, comfort and economy. We think it will attract a lot of interest in both civil and paramilitary sectors'.

Fischer Flugmechanik/AFD's work was founded by German scientist Dr Lippisch, and the current project has been under development for several years. Worldwide, numerous teams have explored WIG vehicles since the 1960s and craft up to 500tonnes have been built to prove the concept. In 2001 FF/AFD built and delivered an eight-seat WIG under contract to an Australian client, for commercial operations on the Barrier Reef. 

The military version of the Hoverwing HW20 WIG.



Artist's impression of the military/paramilitary HW20 WIG.



Military HW20 WIG at sea-skimming speed.

