

A new lease of life – the world's biggest operational water-bombers

Thanks to the vision of Dan McIvor, the four remaining Mars (*Marshall Mars* had been lost in a 1950 fire) and a huge spares holding, were bought by a combine of Vancouver Island forestry companies led by MacMillan Bloedel in 1959. The deal cost \$120,000 (Canadian) for four planes, 35 replacement engines and 90 tons of spare parts and McIvor was appointed chief pilot of the newly formed Forest Industries Flying Tankers Limited (now named Flying Tankers Inc). The first machine, CF-LYJ, *Marianas Mars* was carefully converted to a water-bomber by Fairey Aviation of Canada utilising drop doors and tanks fitted inside the cargo loading bay, enabling a re-conversion to the freight role, if that was later required. Though successful, this machine was lost in an accident, and the crew of four killed due to an operational error in June 1961. Partly as a result, the importance and need for a smaller bird-dog aircraft was realised and implemented. A second aircraft, CF-LYK (with the white tail, and named *Philippine Mars*) was converted as the first machine had been with the side drop doors. After proving the concept, a third Mars CF-LYL (with the red tail and named *Hawaii Mars*) was converted differently and actually had some of the hull fuel tanks below the waterline converted to water tanks with drop doors installed in the planing hull – a more permanent conversion. A final machine, *Caroline Mars*, CF-LYM, was actually destroyed while on the ground by Hurricane *Freida* in October 1962 (though some parts have been retained by FIFT). Huge though these machines are, even today, as a result of the hurricane, they have large airflow spoilers positioned on the wings when parked ashore.

Two machines now remain (C-FLYK, *Philippine Mars*, white tail and C-FLYL *Hawaii Mars* with a red tail: the swap of the 'F' and hyphen in the registration taking place in the 1970s) and they fly on fire bombing operations in British Columbia, Canada, primarily to suppress fires in the valuable timber forests of their owning company. However other work has been sought elsewhere – for instance, *Hawaii Mars* ventured south to Washington and California beginning in 1998 and have since returned to the south on several occasions. They are also retained by the British Columbia Forest Service for emergency work, and in 2003 *Hawaii Mars* was used as a part of a combined fire-fighting operation for the huge 26,500 hectare wildfire which destroyed hundreds of homes in the Okanagan valley on mainland British Columbia. The two aircraft flew just short of 300 hours during the 2003 fire season for the government Forest Service.

What can they do? Each Mars has tanks capable of holding 60,000 lb (27,216kg) of water or suppressant mix. This is picked up by two retractable probes fitted just aft of the step, while skimming a lake surface at 70mph (112kmh). (Either sea or fresh water can be used but for obvious reasons, fresh is preferred.) This is then dumped on a fire through the bottom doors on *Hawaii Mars* or the side drop doors on *Philippine Mars*. Coincidentally, and giving a peculiar sense of scale, a single Mars drop is the same weight as a fully loaded wartime Short Sunderland! This can then be repeated as required – the best effort being a sortie of just under six hours, by one aircraft, with 37 consecutive drops resulting in *one million litres* on the fire.

One might wonder how an aircraft fully half as old as the aviation century is still operating without a more modern replacement; but in a perfect example of Darwinian natural selection, by accident, these giants are still the best for the job. Though theoretically outperformed by a number of proposed water-bomber conversions (including a big Illushin and even a Boeing 747!) nothing bigger is actually working right now, or realistically even on the horizon. Even today, the Mars are the premier operational water-bombers capable of the largest drop and the ability to reload in a matter of seconds using the probes while skimming a water surface. This gives them a major edge over land-based droppers which must return to an airfield for turnarounds. With Canada being blessed with many large water surfaces, the two Mars, working in tandem, are able to average a drop every seven minutes which is a small fraction of the time required for land-based aircraft to effect turnarounds to recharge their tanks.

Originally there were four companies combined to support and use *Flying Tankers* (FT Inc) but today there is only one, and the aircraft with 45 years of fire-fighting success live a slightly precarious existence, with a 'good' year of few or no forest fires being a 'bad' one for them as the accountants start to question the cost – a bad year for fires gets a big 'thank you' from those same accountants and survival for another year.

As the largest operational flying boats in the world, FT Inc's machines, based at Sproat Lake, Vancouver Island - on the West Coast of Canada are a real holy grail for old aircraft enthusiasts like myself, and a Canadian holiday route was slightly 'diverted' to take in a visit to their base. Thanks to Terry Dixon and Ray Williams of *Flying Tankers*, I was shown all over *Philippine Mars* which was being readied for the season, while I was paddled around *Hawaii Mars* by my wife aboard an appropriate (hired) canoe, resulting in some of photographs published here.

James Kightly

Thanks to:

FT Inc, Terry Dixon, Nevins A. Frankel, Edwin H. Gehricke, Tom Irving, Pam & Jim Laing, Brian Langevin, Neil Medcalf, Mark Munzel, Jerry Vernon and Ray Williams.

References:

War Planes of the Second World War: Vol 5 Flying Boats, William Green, Macdonald

Aeroplane Monthly April 1976

Martin Mars XPB2M-1R &JRM Flying Boats, Steve Ginter, Gunter books

Air Enthusiast 80

FT Inc website: www.martinmars.com

VP Navy website: www.vpnavy.org

The Sea Wings website: www.seawings.co.uk

* Like most superlatives, the Mars were not the biggest flying boats ever built, nor even the biggest surviving flying boat – those two awards going to the even bigger (not just four, but eight engines!) Hughes HK-1 Hercules, better known as the ‘Spruce Goose’ and now in the Evergreen Aviation Museum. However, with over 40 years operations and still flying, the Mars have clearly earned superlatives in cost-effectiveness as well as that fact that they were, and are, the largest *operational* flying boats. And yes, they really are big. The table gives a good idea of the size of the Mars and its compatriots – plus a 747 thrown in for familiarity!

The Martin Mars in context.

	<i>Span</i>	<i>Length</i>	<i>Loaded weight</i>	<i>Empty weight</i>	<i>Years of operation</i>	<i>Max payload / weight or passengers</i>
Dornier DoX	157'5" (48.0m)	131'4" (40.97m)	123,458lb (56,000kg) 66 passengers	65,036lb (29,500kg)	1929 - 1932	169 people (inc 9 stowaways!)
Short Sunderland	112'9" (34.4m)	85'4" (26m)	60,000lb (27,215kg)	36,900lb (16,737kg)	1937 - 1960	Max a/c load: 65,000lb (29,483kg)
Kawanishi H8K1 'Emily'	124'8" (38m)	92'3.5" (28.1m)	54,013lb (24,500kg)	40,520lb (18,380kg)	1938 - 1945	64 passengers
Martin Mars	200' (61m)	118' (36m)	162,000lb (73,483kg) Current drop: 60,000lb (27,215kg) water / retardant.	95,220lb (43,282kg)	1943 to date	Record 308 people carried, max lift was 68,327lb (30,992kg)
Hughes HK-1 Hercules 'The Spruce Goose'	319' (97.5m)	219' (66.7m)	300,000lbs (136,077kg) <i>(some sources quote 400,000lb (181,440kg))</i>	170,000lb (77,110kg)	Single flight on 02/11/1947	Payload: 130,000lbs (58,966kg) (est)
Saro SR-45 Princess	219'6" (66.9m)	148' (45.1m)	330,000lb (149,684kg) 105 passengers intended	190,000lb (86,182kg)	1952	Max weight (est) 345,000lb (156,489kg)
Boeing 747 (Specific data for – 300 series)	195'8" (59.6m)	231'4" (70.5m)	833,000lb (377,840kg)	389,875lb (176,847kg)	1969 to date	Payload: 377,850lb (171,389kg) 540 passengers

"This kit was developed at the suggestion of James Kightly and Roger Wallsgrave of MMP, and they provided much of the data and photos used in researching the kit. For more on the history of the Mars, and a selection of photos, see Mushroom Model Magazine 8/3 (2004) - order online at www.mmpbooks.biz, or e-mail rogerw@waitrose.com"