

GYROFIN® Stabilisers



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Sperry Marine GYROFIN® is the World's Leading Roll Stabiliser

Benefits include:

- Improved safety and vessel performance
- Increased passenger comfort
- Enhanced cargo protection
- Lower fuel costs
- Reduced cargo lashing
- Worldwide Sperry Marine Service



Sperry Marine, a leader in ship stabilisation, introduces the next generation of ship stabilisers that feature a new digital control system, the “Lift Control” design and upgraded machinery units. We have applied the latest advances in technology to a proven and robust design resulting in a system that truly delivers ship comfort and safety even in the roughest seas.

Key Highlights

- Proven design to maximum performance and reliability
- Innovative “Lift Control” feature that enhances stabilisation efficiency and machinery service life
- Combined with lift control the fin unit, utilising a tail flap, improves the lift to drag ratio thereby, minimising drag and saving fuel
- New Digital Control System with serial connectivity and simple to use touchscreen controls
- Upgraded machinery elements to enhance performance and supportability
- Dedicated Project Management Team that provides an array of support services from technical consulting to commissioning



How Lift Control Works

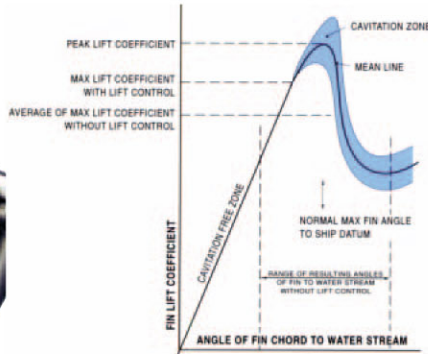
“Lift Control,” a key feature of Sperry Marine’s innovative and patented fin stabilisation system, is made possible by mounting displacement transducers within the fin shaft. The transducers produce an electrical signal proportional to the lift force generated by the angle of attack of the fin to

local water stream direction. This lift signal is compared with the instantaneous value of lift required for roll stabilisation. The difference is used to drive each fin until it achieves the desired lift, thereby automatically compensating for variations on the local water stream direction. The angle of the fin will change as needed until the desired lift is being achieved even though

the local water stream direction is continuously changing.

“Lift Control” prevents the fin from being driven at times into the Cavitation Zone and at other times from producing a shortfall in lift. The lift forces required for stabilisation are more faithfully produced, giving an improved stabilisation efficiency.

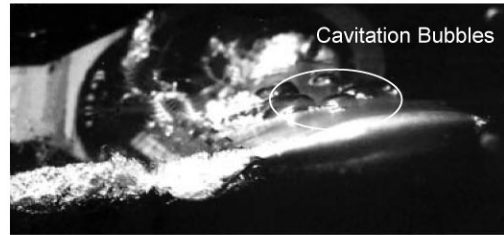
Lift Control Advantages



Stabiliser systems using “Lift Control” produce the demanded peak lifts when required without operating in the cavitation region.

Stabiliser systems without “Lift Control” cannot maintain the required peak lifts because of the fluctuating conditions within the cavitation region.

Sperry Marine’s “Lift Control” produces maximum fin efficiency not available from any other stabiliser system.

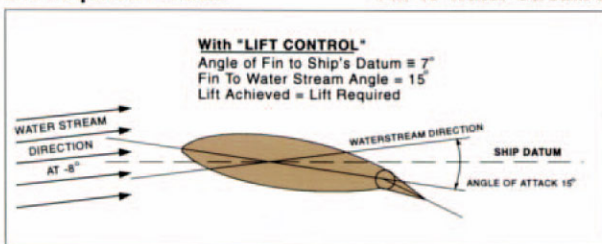


Cavitation is real and Sperry Marine understands the dynamics that cause it. The GYROFIN Stabiliser is the only system that avoids cavitation thereby, providing improved stabilisation efficiency, less vibration and smoother operation.

Lift Required = +Max

Fin To Water Stream Angle Required = 15°

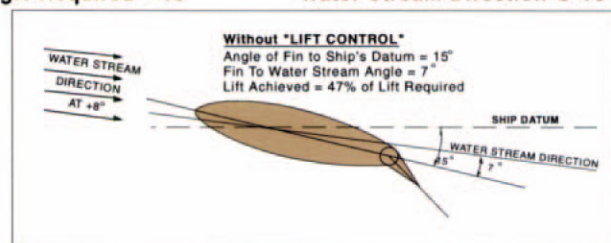
Water Stream Direction @ -8°



Lift Required = +Max

Fin To Water Stream Angle Required = 15°

Water Stream Direction @ +8°



In the above illustrations we show examples of the conditions at a stabiliser fin with and without "Lift Control."



Bridge Control Unit (not to scale)

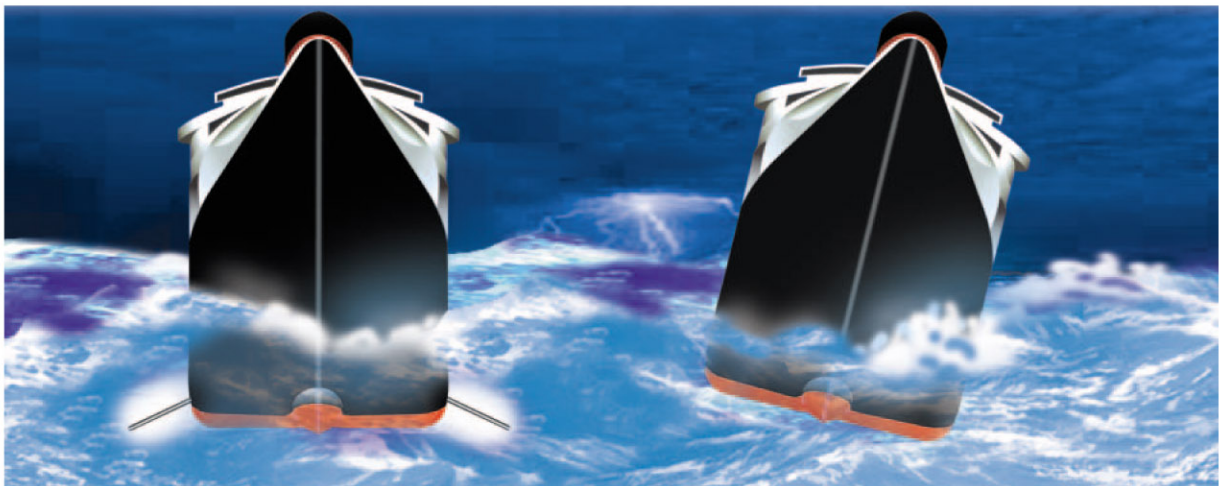


Main Control Unit

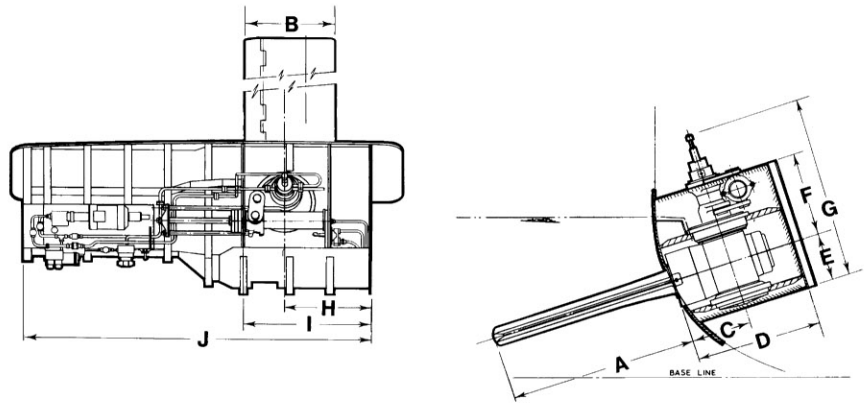
Local Control Unit

New Digital Control System

- New Bridge Control Unit offers large colour LCD displays, versatile, easy-to-use touchscreen controls for operator interface
- Serial data communication between the units enhances system performance and reduces cabling requirements
- Electronics allow operating up to 4 fin stabilisers simultaneously
- Improved system reliability by the use of a new Roll Motion Sensor with no moving parts, Proximity Sensors in place of mechanical switches
- Redundant operator interfaces at both the Bridge Control and Main Control Units – If a failure of the Bridge Control Unit occurs, the fin stabiliser can be maintained by the Main Control Unit.
- System diagnostic capabilities with intelligent alarm messaging
- A unique “Quick Test” feature that performs a comprehensive test of the entire system from the Bridge Control Panel
- Each fin unit has an auxiliary pump and motor set which can stow the fin in the event of an emergency via the ship’s emergency electrical supply in compliance with the SOLAS requirements for passenger vessels
- Emergency stowing of the fins is controlled from the standard control stations or it can be initiated automatically



Ships equipped with the Sperry Marine Gyrofin Stabilisers reduce ship roll by up to 90 percent.



Sperry Marine GYROFIN® Stabiliser Sizes

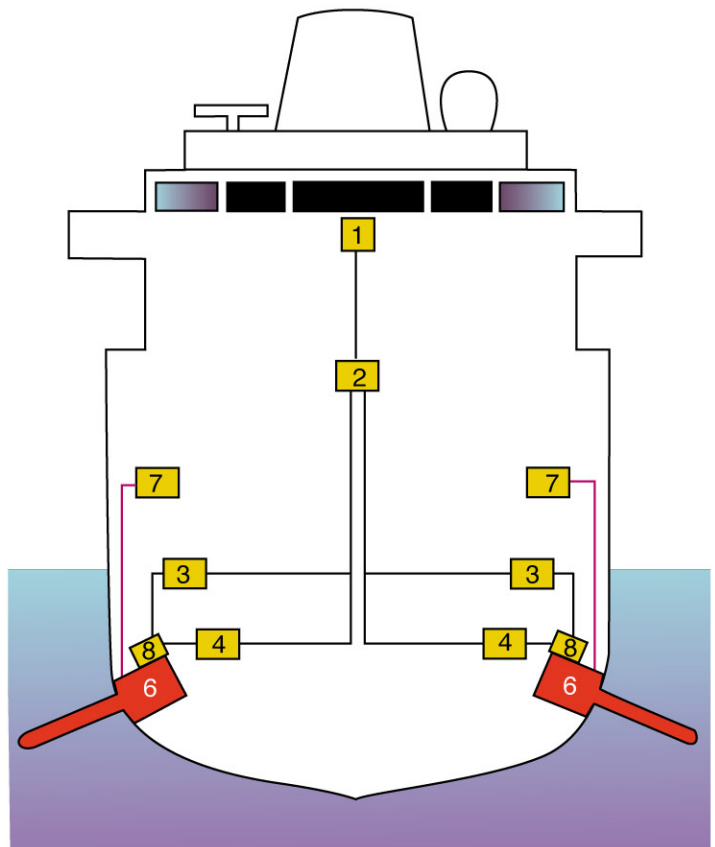
The table and figures at right give a range of typical stabiliser fin and machinery sizes.

MACHINERY SIZE	TYPICAL FIN AREA (M ²)	APPROX. UNIT WGT. (TONS)	NORMAL KW PER SIDE	TYPICAL DIMENSIONS (IN METERS)									
				A	B	C	D	E	F	G	H	I	J
1	3.60	17	18	3	1.2	0.76	1.61	0.65	1.15	2.51	1.35	1.93	5.57
2	6.7	33	26	3.66	1.83	0.98	2.03	0.82	1.36	3.15	1.86	2.57	7.15
3	10	52	55	4.44	2.25	1.33	2.45	0.91	1.72	3.64	2.03	3.12	8.05
4	15	81	65	5.77	2.6	1.39	2.79	1.05	2.10	4.14	2.22	3.59	9.08
5	22	105	100	6.64	3.32	1.76	3.54	1.30	2.67	5.25	2.8	4.5	11.77



Typical GYROFIN® Installation

1. Bridge Control Unit
2. Main Control Unit
3. Pump Motor Starter
4. Local Control Unit
5. Fin
6. Stabiliser Machinery Unit
7. Oil Header Tank
8. Hydraulic Power Unit





Sperry Marine

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Over 400 Locations Worldwide