

# SAFETY SPEED LOSS



When Safety Matters



Acoustic Correlation Principle  
*Makes the Difference*



## The SAL history 1914 to present

- 1914** SAL – "Svenska Aktiebolaget Logg"  
Patent on pitot tube principle and deliver the first naval SAL-log to the Royal Swedish Navy destroyer "HMS Hugin"
- 1918** The first civil SAL-log was installed on board the merchant ship s/s Hyperion.
- 1918** Svenska Ackumulator AB (later name changed to Jungner Instruments AB) acquire Svenska Aktiebolaget Logg
- 1914-1950** Models: SAL-12, SAL-14, SAL Selsyn, SAL-24
- 1950-80's** Models: SAL-59, SAL-24E and SAL-59E
- 1972** Salen&Wicander AB acquire Jungner Instruments AB
- 1972** SAL ACCOR: first generation of acoustic correlation BT/WT speed log (Patent)
- 1983** SAL Imcor: first generation of acoustic WT speed log
- 1984** SAL 840: one axis BT speed with Imcor WT speed
- 1984** DD-1-1, the first electronic display with digital presentation and 20000 pulses +5/-5V input
- 1985** Consilium acquire Salén & Wicander Group Marine
- 1988** SAL 860: two axis BT speed with Imcor WT speed
- 1989** SAL LEB 2-1: Log Extension Box: for multiple user connections
- 1993** SD1 and SD2: Serial Digital displays with NMEA interface
- 1993** SAL LPU, Log Processing Unit: enhances the functionality of SAL 860 to calculate transversal fore and aft speed by adding an rate of turn gyro. Optional with MFD display
- 1994** SAL LDU, Log Distribution Unit: for multiple user connections
- 1997** SAL R1: new generation of WT speed log, supersedes the SAL Imcor
- 1998** SAL 840R and SAL 860R, WT speed units changed to SAL R1
- 2002** SAL 860T: new BT main unit built on DSP-technology
- 2003** SAL T1, T-series model one-axis BT/WT log with Echo-sounder
- 2003** SAL T2, The first T-series BT/WT model with modular WTU unit built on DSP-technology
- 2003** SAL T3, T-series BT/WT model with Echo-sounder functionality based on the new ESD computer
- 2004** SAL R1a: new WT speed log based on the WTU unit
- 2004** SAL R1/R1a TRU: improved design of the transducer unit
- 2005** SAL T3+, T-series BT/WT log with Echo-sounder. Redundancy for ships over 50.000 GRT
- 2005** SAL T2s, T-series model one-axis BT/WT model
- 2005** SD4: new generation of 2-way communication Digital Displays with 99x11 information display for system set-up
- 2007** SAL LPU2, Log processing Unit 2:nd generation. Extended functionality



## Continuity through change

Consilium Marine & Safety the supplier of SAL Speed Logs and to date has equipped well over 20,000 ships. From the beginning Consilium has placed the emphasis on product leadership through innovation and quality. Our commitment to excellence begins with the use of superior technology and culminates with unmatched build quality to provide ship owners, builders and crews with equipment that delivers a performance second to none.

Consilium's range of SAL Speed Logs has been deliberately expanded so that Consilium is in the position to provide vessels of all size with a first class speed log system to suit its specific requirement. Using advanced technology and innovative design all users of Consilium SAL Speed Logs are able to accurately record the speed of their vessel whatever the conditions.

The pioneering spirit that personifies Consilium is clearly evident in the company's unstinting determination to find new technological solutions. And it is this unique drive for perfection that continues to be at the heart of all marine equipment Consilium manufacturers.



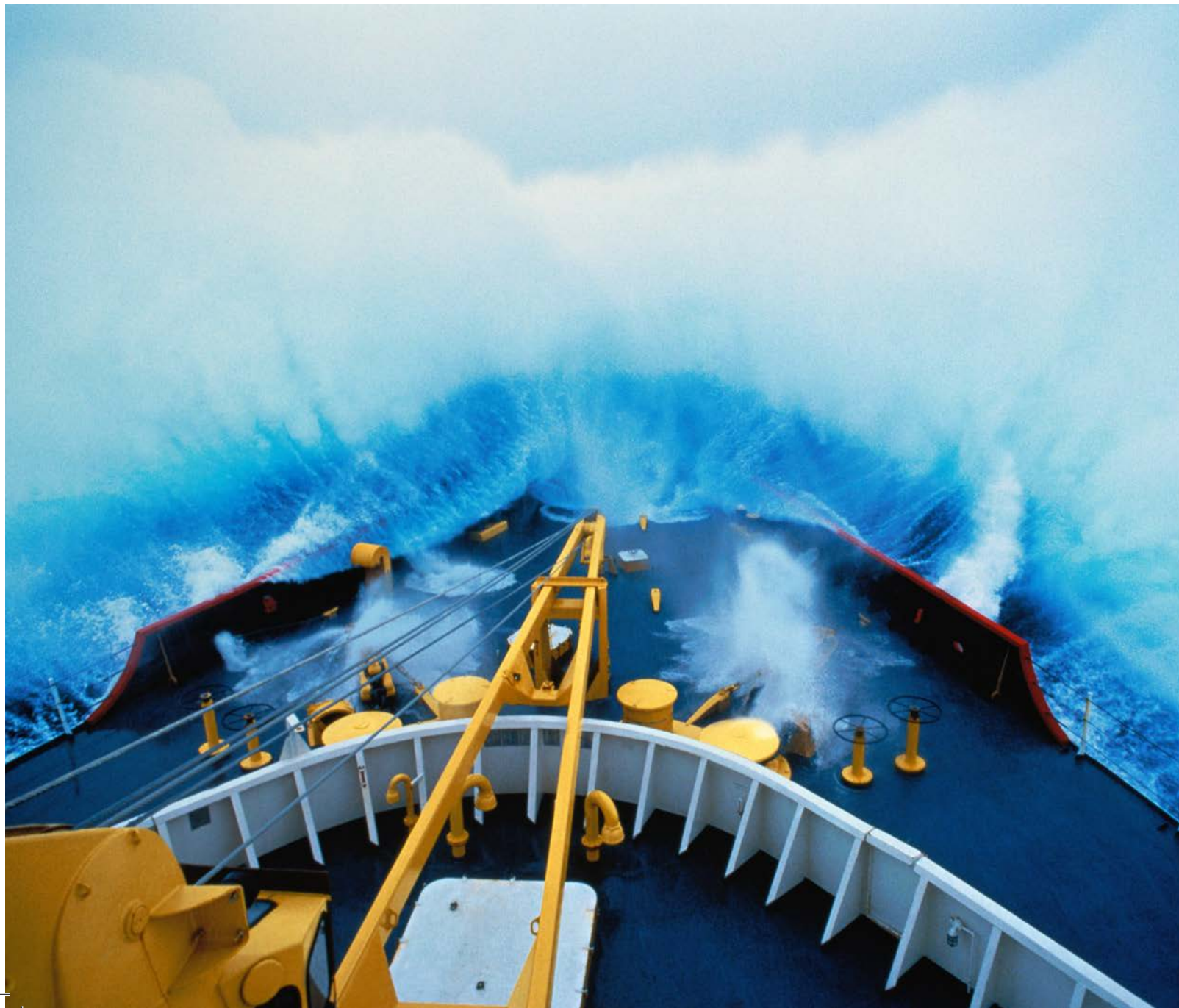


## Greater accuracy whatever the conditions

During the 60's we conducted a series of rigorous sea trials to discover whether there was any significant difference in performance between equipment using the Acoustic Correlation Principle and that of equipment employing the Doppler Principle. During testing it became apparent that when the respective technologies were used in areas where reflections, temperature layers, salinity, roll and pitch came into play the equipment using the Acoustic Correlation Principle was far more effective at eliminating the influence of the prevailing conditions and maintained its accuracy at all times. The same could not be said of the equipment using the Doppler principle.

Once we had determined that ACP was unquestionably the most accurate and reliable solution we committed ourselves whole heartedly to the technology. From those early days we have successfully introduced an impressive list of new features and functionality that have been adopted as industry standards and maintained our position as the preferred choice amongst leading ship owners and builders the world over.

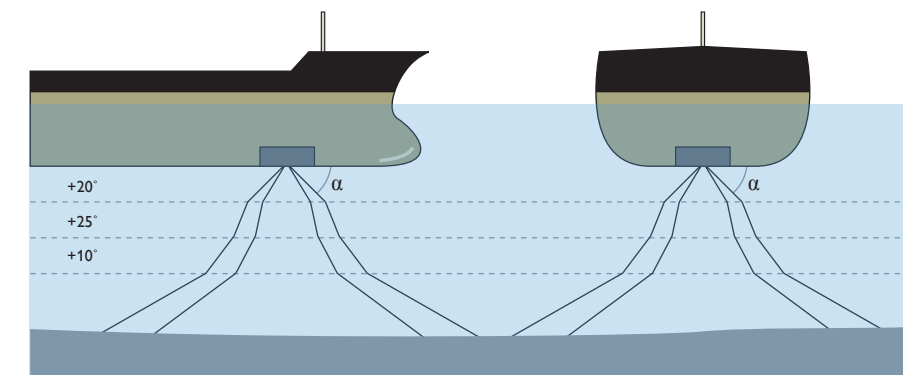
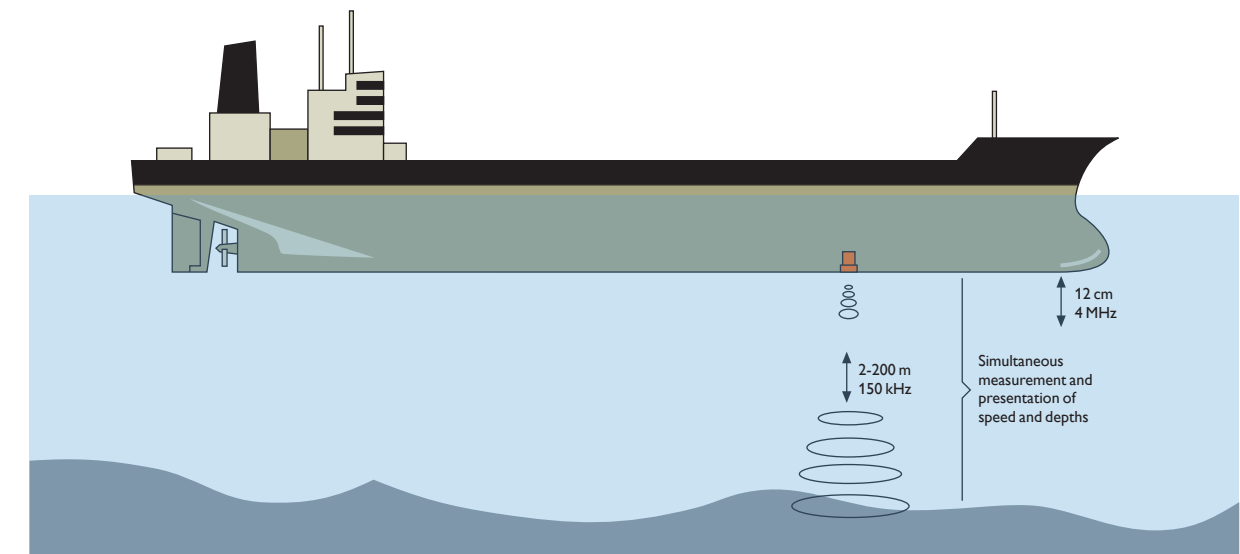
In addition to great accuracy our equipment is renowned for its rugged build quality, total reliability and extreme ease of use. Indispensable qualities for equipment that is crucial to the safety to sea going crafts whether they are used for business or pleasure.



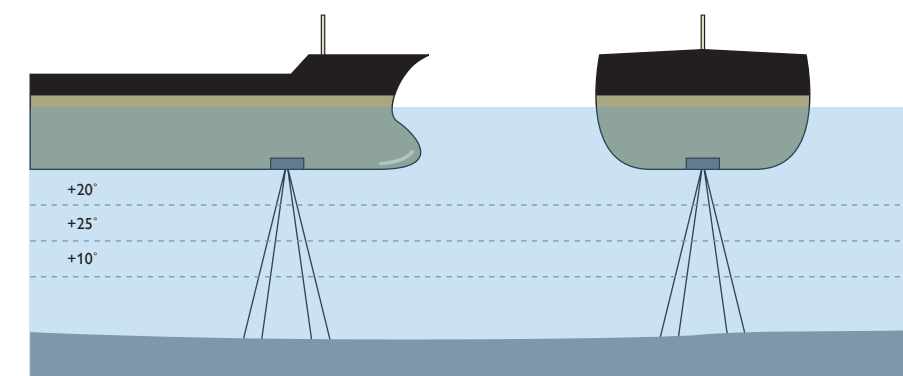
## The advantages of Acoustic Correlation Principle over Doppler

The following diagrams clearly illustrate the superiority of ACP over the Doppler based alternative. In recognition of the vast superiority of Acoustic Correlation Principle over all

other alternatives Consilium has developed a broad range of SAL Speed Logs so an option is available for all types and sizes of vessels.



**Doppler principle**  
The doppler log is using a narrow beam, transmitting at an angle  $\alpha$  towards the bottom.  
This method will cause problems when measuring speed.



**Correlation principle**  
The correlation log is using a wide beam, transmitting vertically towards the bottom.  
No influence on speed measuring.



## Building on success

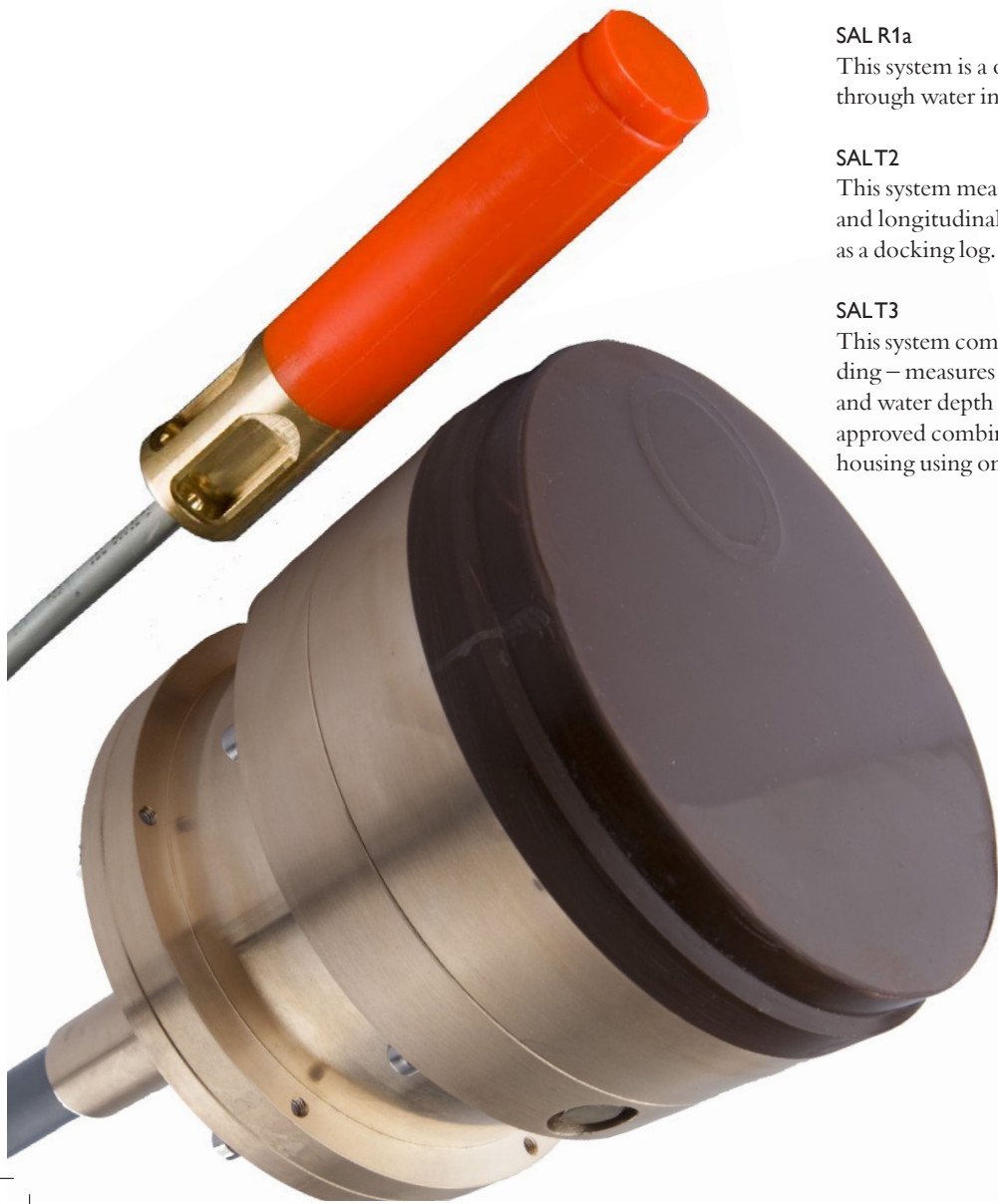
Consilium's range of SAL Speed Logs offer a choice of both relative and true speed versions. In addition Consilium also offers the world's first combined system which is type approved and equipped with a speed log and an echo sounder.

You can choose from a comprehensive range SAL Speed Logs Consilium's has thoughtfully extended its product range to ensure that whatever vessel you are building or is undergoing a retro-fit you have the option to equipped it with a class leading product.

SAL Speed Logs and Echo Sounders				
Log Type	SAL R1a <sup>1</sup>	SALT1 <sup>1</sup>	SALT2 <sup>1,2</sup>	SALT3 <sup>1</sup> SALT3+ <sup>2</sup>
Water Track				
Bottom Track				
Dual Axis Log				
Docking Log				
Echo Sounder				

<sup>1</sup> Smaller than 50,000 GRT. Solas requires minimum a water tracking speed log.

<sup>2</sup> Bigger than 50,000 GRT. Solas requires a water tracking and bottom tracking dual axis speed log.



### SAL R1a

This system is a one-axis relative speed log – measures speed through water in longitudinal direction ahead and stern.

### SALT2

This system measures longitudinal and transversal true speed and longitudinal relative speed. This version is also available as a docking log.

### SALT3

This system combines the features of SAL T2 with echo sounding – measures relative speed as well as two axis true speed and water depth down to 250 meters. (This is the world's first approved combination of speed log and echo sounder in one housing using only one combined transducer.)

## Consilium SAL Speed Logs give you more

As a company committed to the highest quality you'll find all our equipment combines state-of-the art technology with robust built quality.

Key features for the various components include:

### Transducers TRU

- Compact size means it requires less space.
- Light weight ensures easy installation.
- Flush mounted to the hull for better protection.
- One hull penetration, one installation, common cabling means lower installation costs.
- Sea-valve for easy exchange while afloat.

### Electronics unit

- The ELC uses Digital Signal Processing (DSP) technology for superior performance.
- Versatile displays for two-way communications.
- Remote calibration and set-up can be accomplished from the bridge. Ideal for sea trials and speed testing.
- Common mounting for both the wheel-house and bridge wings.
- Comprehensive range of accessories.

- Uses standard ships cable for NMEA signalling from the ELC to the instrument room and bridge.

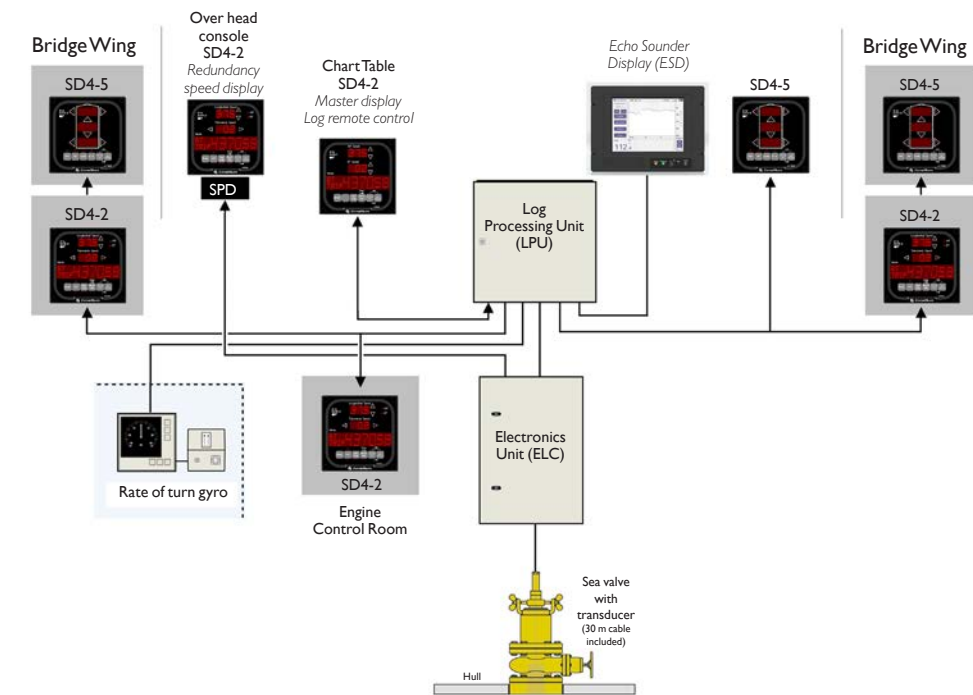
### Advanced functionality

- Acoustic correlation principle for highly accurate performance.
- Resistant to interferences from rolling, pitching, salinity and temperature layers.
- Integrated Echo sounder and speed log functionality.
- Capable of simultaneously measuring speed over water, speed through water and depth.
- High reliability rating.
- Low service and maintenance costs.
- Proven technology.
- Built by long term and highly regarded manufacturer of marine products.

### For more technical information

For more detailed technical information concerning a specific model simply ask your local Consilium representative for the product brochure alternatively download a version from our website at [www.consilium.se](http://www.consilium.se)

## WHEEL HOUSE



### Global Service Network

Consilium Marine & Safety is represented in more than 50 countries and has a presence in the most frequently used ports around the world. Customers are able to obtain spare parts or conduct servicing via the network of subsidiaries and agents so no matter where they are they're never far from a Consilium expert.

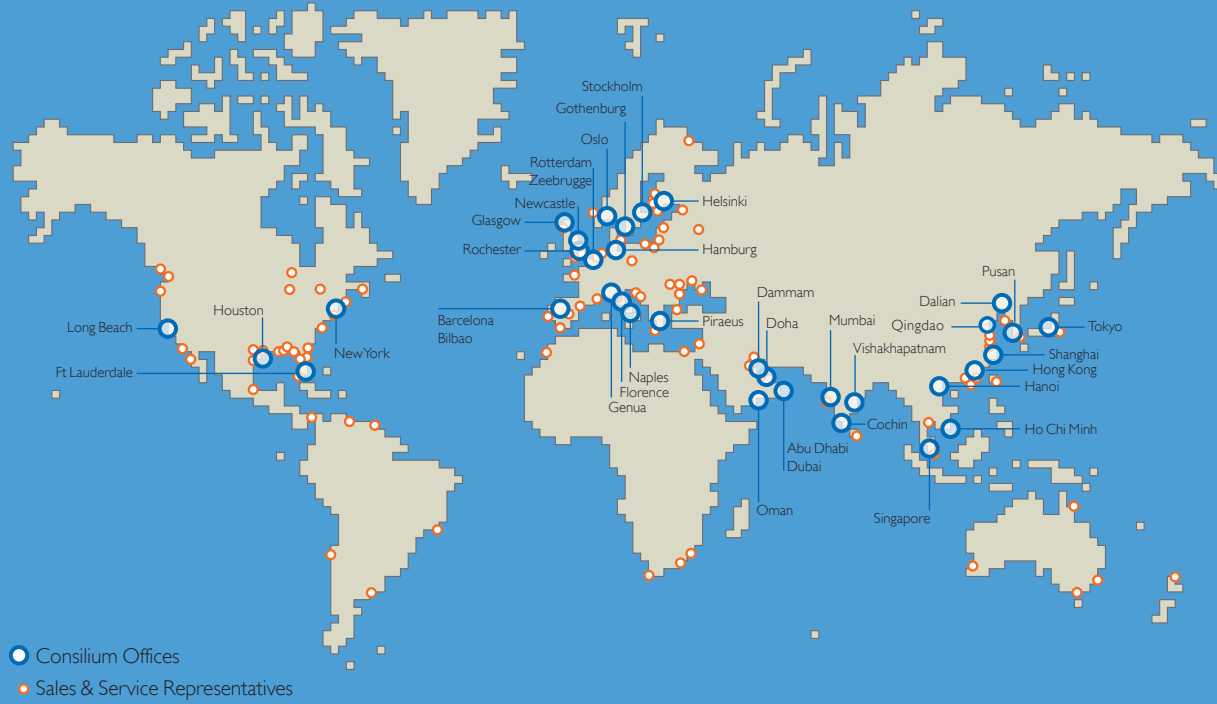
### After sales support you can rely on

Consilium prides itself on providing customers with the benefit of a highly trained and resourceful after sales team. Each member of the team is fully experienced so customers have the added assurance of knowing that when they buy from Consilium complete customer satisfaction is an essential part of the deal.

### Training on demand

To help customers to get the most out of their equipment Consilium provides comprehensive educational courses and training seminars from their global network of offices. So should a customer have a special requirement Consilium representatives can help make all the necessary arrangements to conduct teaching seminars where attendees can discover everything there is to know about a particular product and its functions.

# You find us worldwide



## SWEDEN

**Consilium Marine & Safety AB**

**Fire & Gas Marine Division**  
Gothenburg  
Phone: +46 31 710 77 00  
cmsab@consilium.se

**Navigation Division**  
Stockholm  
Phone: +46 08 563 05 100  
cmsab@consilium.se

**Storm & Co Skeppsradio AB**  
Gothenburg  
Phone: +46 31 51 35 10  
stormco@stormco.se

## BELGIUM

**Consilium Marine Systems BV**

Zeebrugge  
Phone: +32 50 70 30 97  
info\_nl@consilium.co.uk

## CHINA

**Consilium Shanghai Co.Ltd.**

Shanghai  
Phone: +86 21 5152 22 60  
sales@consilium.cn

*Dalian*  
Phone: +86 411 8386 4460

*Qingdao*  
Phone: +86 532 8786 9476

*Hong Kong*  
Phone: +852 3521 19 14

## FINLAND

**Consilium Marine OY**

Helsinki  
Phone: +358 405 25 28 25  
info@consiliummarine.fi

## GERMANY

**Consilium GmbH**

Hamburg  
Phone: +49 40 822 22 95-0  
consilium@consilium-hamburg.de

## GREECE

**Consilium Marine Hellas**

Piraeus  
Phone: +30 210 428 7097/8  
info@consiliumhellas.gr

## INDIA

**Consilium India Pvt. Ltd.**

Mumbai  
Phone: +91 2267935150-53

## India cont

*Vishakhapatnam:*  
Phone: +91 891 301 03 20  
consilium.vizag@consilium.ae

*Cochin*  
Phone: +91 484 238 4298

## ITALY

**Consilium Italy Srl.**

Florence  
Phone: +39 0571 68121  
cmi@consilium.it

*Genova*  
Phone: +39 010 553 3900

*Naples*  
Phone: +39 081 542 3122

## JAPAN

**Consilium Nittan Marine Ltd**

Tokyo  
Phone: +81 3 5333 7060  
cnm@consilium-nittan.com

## NETHERLANDS

**Consilium BV**

Rotterdam  
Phone: +31 182 382 422  
info\_nl@consilium.co.uk

## NORWAY

**Consilium Scandinavia AS**

Oslo  
Phone: +47 22 30 90 30  
mail@consilium-norway.no

## SPAIN

**Consilium RMI Spain S.A.**

Bilbao  
Phone: +34 94 404 2121  
attcliente@consiliummispain.com

*Barcelona*  
Phone: +34 94 404 2121

## SINGAPORE

**Consilium Marine**

**Singapore Pte.Ltd.**

Singapore  
Phone: +65 6570 8998  
mail@consilium.sg

## SOUTH KOREA

**Consilium Marine Korea Ltd.**

Pusan  
Phone: +82 51 740 5869/71-4

## CINK

(Consilium Iljin Navigation Korea)

Phone: +82 51 755-6193/4  
+82 51 755 9191

## QATAR

**Consilium Qatar LLC**

Doha  
Phone: +974 442 4849

## UAE

**Consilium Middle East (FZC)**

Sharjah  
Phone: +971 6 55 70 740

## Abu Dhabi

**Consilium Middle East  
General Contracting LLC  
Consilium Middle East Eqmt.  
& Spare Parts LLC**  
Phone: +971 2 622 93 46

## SAUDI ARABIA

*Dammam*

**Consilium Saudi Arabia**  
Phone: +966 3 8179214  
info.ksa@consilium.ae

## UK

**Consilium Marine UK**

Falkestone  
Phone: +44 1268 41 77 45  
info\_uk@consilium.co.uk

*Glasgow*  
Phone: +44 1268 41 77 45

## USA

**Consilium Marine US**

*Fort Lauderdale*  
Phone: +1 954 791 7550

*Long Beach*  
Phone: +1 954 791 7550

*Houston*  
Phone: +1 954 791 7550

## VIETNAM

**Consilium Vietnam JSC**

Hanoi  
Phone: +84 4 37 93 14 31

## Ho Chi Minh City

Phone: +84 8 410 13 38



www.consilium.se