

ALANNAH RILEY – ADVANCED DANISH-BUILT MULTI-RIG PRAWN FREEZER TRAWLER FOR CASTLETOWNBERE

At a time when the order books of boatyards in Ireland and the UK, as well as countries like Denmark, Norway, Spain and Holland, are at their highest level for over 20 years, it is not surprising that the inclusion of new technology and innovative ideas are increasingly prominent, as designers and owners work together to achieve optimum levels of efficiency and catch quality, in line with fishing opportunities, reports **David Linkie**

The latest example of this forward thinking is the _m versatile multi-rig prawn freezer trawler Alannah Riley S 40 that recently completed her maiden trip, fishing prawns on the Porcupine Bank some 150 miles from her home port of Castletownbere, Co Cork.

Owned by Neil Minihane, in partnership with his sons David and Ross Minihane of Castletownbere, Alannah Riley was designed and built by Vestværfтет ApS, of Hvide Sande, Denmark.

Significant firsts on Alannah Riley, which is named after David and Ross Minihane's daughters Alannah and Riley, include:

- Twin catch hoppers aft
- Highly automated catch selection/washing and prawn processing systems
- Twin blast-freezing rooms
- 4 split trawl winches
- 6 net drums

This advanced level of specification highlights the fact that Alannah Riley is primarily designed for freezing prawns at sea, when using three customised low-standing trawls. In addition to triple-rigging, the vessel's versatile working arrangements are equally suitable for single or twin-rig trawling when targeting demersal species.

Clearly, Neil, David and Ross Minihane, together with designer Ove Kristensen of Vestværfтет ApS and the main suppliers, including VCU, GEA

The new Castletownbere multi-rig prawn freezer trawler Alannah Riley features a number of innovative ideas.

▶ Two split net drums and trawl winches are mounted amidships on the shelter and boat decks respectively.



Refrigeration Ireland Ltd, Rapp Marine, Barry Electronics and Fraserburgh netmakers Faithlie Trawls, have put high levels of experience and thought into Alannah Riley. Noel O'Regan of

Promara acted as the owner's consultant throughout the design and build project of Alannah Riley which is classed in Bureau Veritas.

As a result, the owners are

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Congratulations and good fishing to Neil, David and Ross Minihane on their new vessel Alannah Riley S 40.

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▲ Urk specialists VCU supplied a highly automated catch handling...

confident that Alannah Riley will prove well-suited to the task of fishing prawns down to 250 fathoms on the Porcupine Bank in the North Atlantic, some 120 miles west of Ireland, in frequently challenging conditions.

After Alannah Riley completed her maiden trip to the Porcupine Bank, skipper Ross Minihane said: "We are delighted by the initial level of performance Alannah Riley delivered on our first trip, when

the boat, together with all the machinery/equipment and fishing gear performed well.

"Full credit for this goes to the boatyard and all the suppliers, who, together with our crew and families, have been extremely supportive from the very beginning of the project."

Insured by D&D Insurances Ltd, Alannah Riley will land her catches through the Castletownbere Fishermen's Co-Op.

Rapp Marine deck machinery

The comprehensive package of hydraulic deck equipment enabling Alannah Riley to engage in single, twin and multi-rig trawling was designed, supplied and commissioned by Rapp Marine.

All fishing activities are undertaken from the hardwood-planked trawl deck, which extends for half of the vessel's length at shelterdeck level.

Two sets of large-diameter split net drums (2 x 21t), slightly staggered to give ease of access to the drive motors, are arranged forward on the trawl deck, in direct line with shooting and hauling openings across the transom. These can be sealed off in poor weather by hydraulically-operated stern

doors capped with large-diameter rollers. With the stern already watertight up to the level of the shelterdeck, this feature provides an added metre of protection that will prove invaluable when the crew are mending torn gear on deck in heavy weather. Provision has also been made for badly torn gear to be transferred to the main deck through a port deck hatch.

A further two trawls are carried ready to shoot on two single 21t net drums positioned abaft the main trawl gantry above the trawl deck. These elevated drums are mounted on the boatdeck, with the nets being shot and hauled under a large-diameter transverse retaining bar.

Two of Alannah Riley's four



Looking aft along the trawl deck from boat deck level, showing some of the Rapp Marine deck machinery including the elevated single net drums positioned under the main trawl gantry; split nets drums forward on the trawl deck; split trawl winches and the Toimil 20t/m folding deck crane.



Rapp Marine engineer Drew Elphinstone commissioning the aft starboard split trawl winch.

split trawl winches (19t) are positioned on the boatdeck abaft the wheelhouse, giving direct leads aft under the trawl gantry to the central set of hanging blocks on the transom gantry.

The other two split trawl winches are mounted fore and aft on the main deck, aft on each side of the catch reception hopper. The warps from these winches lead vertically upwards to a hanging block on the aft side of the main gantry, from where they are led aft to the outer set of hanging blocks on the transom gantry.

In order to allow Alannah

Riley to tow from the optimum point in relation to sea and tidal conditions, the towing blocks can be moved across the transom gantry by using remotely-controlled hydraulic rams.

All four split trawl winches are operated through a Scantrol iSYM Autotrawl system. The easy to use touch-screen control panel provides skippers Ross Minihane and Patrick Driver with a number of operating modes, including maintaining a fixed wire length/water depth ratio through an interface to the WASSP multi-beam sounder.

Catches are lifted aboard

using two port and starboard Gilson winches (6t) positioned midway up the trawl gantry.

Two 4t codend winches are mounted at each quarter on the boatdeck to assist with general gear handling arrangements. Additional flexibility when working on the trawls is provided by a Toimil 20t/m folding deck crane c/w a Rotzler 1.8t winch, mounted on the port boat deck.

As customary, the skipper has full control of all deck machinery when hauling and shooting the gear from a trawl console in the wheelhouse, which provides a commanding view of the working deck.

General layout

Of round bilge hull form, Alannah Riley has main dimensions of LOA 28.62m, reg length 23.9m, beam 9m, depth moulded (maindeck 4.42m, shelterdeck 6.8m) and draft 5.6m.

Alannah Riley features two continuous decks at main and shelterdeck level, while the boatdeck is continued aft of the wheelhouse to form wrap-round walkways that give maximum safety on the trawl deck, and direct elevated access across the transom.

The hull below the main deck is subdivided into five watertight compartments: forepeak; tank section with deep fuel tanks port and starboard/thruster compartment; insulated freezer and refrigerated holds; engineroom; and aft peak, housing fuel, lube and hydraulic oil tanks as well as the steering gear compartment.

The main accommodation areas are arranged across the forward sections of the main and shelterdecks. Three twin and three single-berth cabins

are located on the main deck adjacent to a WC/shower room and a crew changing area to port, through which the main deck is accessed.

Separate galley, messdeck, and TV lounge are arranged one

deck up, where there is also a skipper's single-berth ensuite cabin. A walk-in technical room giving easy access to the main items of electronic equipment displayed in the wheelhouse, and a workshop, line the

starboard side of the vessel forward.

All internal accommodation areas on Alannah Riley are finished to an extremely high standard using natural-coloured laminates and timber facings,



▲ ... and prawn processing system.

Congratulations

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One of the two blast-freezer rooms located on the main deck.

to give an attractive and homely feel, which is appreciated by the crew.

Barry Electronics of Killybegs supplied, installed and commissioned Alannah Riley's extensive array of electronic equipment, information from which is displayed on two tiers of flat screens flush-mounted in

the freestanding main forward console.

Details of the trawler's location are processed by Furuno GP170S and GP33 GPS receivers, and heading is provided by a Furuno SC50 satellite compass. Positioning data received is interfaced to two Sodena Turbowin

Faithlie Trawls supplies custom-designed prawn nets from Fraserburgh

Faithlie Trawls of Fraserburgh supplied two complete sets of multi-rig prawn trawls now being used by Alannah Riley.

The bespoke package of triple-mouth letterbox-style prawn trawls was ordered by the owners following the successful performance of similar nets Faithlie Trawls delivered last year for use on the Castletownbere trawlers

Dawn Ross S 346 and Ocean Venture II S 121.

The wider bosum nets were originally developed by Faithlie Trawls for use on the Fraserburgh twin-rig trawler Jacqueline Anne FR 243, three years ago. Since then, Willie Hepburn and his team have made comparable triple-mouth nets for several more Fraserburgh vessels, including

the new builds Rebecca FR 143 and Daystar FR 86.

Alannah Riley's trawls feature heavier netting and rigging, reflecting the greater depth of water worked on the Porcupine Bank compared to the North Sea grounds.

Alannah Riley is using 37-fathom triple-rig trawls and shorter 30-fathom quad-rig trawls. Both sets of trawls incorporate triple-mouth 30ft bosoms and are rigged on 6in and 8in discs.

The triple rig trawls are spread by two sets of Thyboron Type 11 76in and 50in trawl doors.

A different configuration of sweeps, including rubber leg bridles supplied by Swan Net-Gundry of Killybegs, together with a 2000kg Thyboron middle roller, is used for quad-rigging.

Swan Net-Gundry also supplied Alannah Riley with 4 x 1000-fathom lengths of 22mm DYNICE Dyneema warp rather than convention trawl wire. In addition to greater durability, DYNICE warps are reported to perform more efficiently when towing in soft mud, while also giving reduced abrasion to the vessel and blocks.



Alannah Riley's three 37-fathom triple-mouth letterbox-style prawn trawls made by Faithlie Nets, crated up ready for delivery to Denmark.

plotting systems supporting a combination of tidal data, AIS and ARPA tracking.

Other main items of navigation equipment include Furuno FAR1518 and M1835 radars, a Furuno FA-170 AIS transceiver and a Simrad AP70 digital autopilot with dual control.

Bottom-sounding and fish-detection duties onboard Alannah Riley are performed by a WAASP 80 kHz multi-beam sounder, a new Furuno FSV-1900B CHIRP (multi-frequency transmission sweeps) sounder and a Furuno FSV-84 sonar.

The WAASP multi-beam sounder is fitted with a



▲ Barry Electronics supplied the comprehensive array of wheelhouse equipment.



We would like to wish Alannah Riley S 40 every future success

Designers and Suppliers of all types of Fishing Gear

Faithlie Trawl International Ltd, Bruce's Yard, Commerce Street, Fraserburgh. AB43 9LP

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▲ General view of Alannah Riley's aft engine room.



▲ The main wheelhouse console.



▲ The well-equipped galley...

precision Motion reference unit to provide optimum levels of reference data and, therefore, highly accurate mapping of the seabed.

Communications and safety equipment includes Sailor 6000 MF/HF GMDSS radio-telephones, Sailor 6126 DSC and Sailor 6210 VHF's, 2 x Icom GM-1600 handheld GMDSS VHF's, a Furuno NX 300 Navtex, and a BEL VSAT satellite communication system.

Barry Electronics also supplied an advanced CCTV system incorporating IP technology. The images from 14 cameras can be shown on any of five display monitors, providing maximum coverage and optimum levels of crew safety throughout the Alannah Riley at all times.



▲ ... and spacious messdeck.

Automated double catch handling system

Dutch specialists VCU of Urk, working in close liaison with Neil, David and Ross Minihane, supplied a custom-designed catch-processing system to Alannah Riley.

Although similar in principle to the revolving drum systems VCU supplied to the Scottish whitefish vessels Boy John, Rosebloom and Boy Andrew in the past two years, the one now performing successfully on Alannah Riley includes an automated prawn processing line.

On being released into one of two adjoining reception hoppers positioned adjacent to the transom either side of the vessel's centreline, an elevated conveyor is used to move



▲ One of the three twin-berth cabins on Alannah Riley.

prawns and fish forward for delivery onto a second conveyor leading across the full width of the main deck.

Crewmen make their selections of prawns (and/or gut whitefish) from the waist-height transverse conveyor while standing on raised gratings.

Prawns and fish are then placed into one of six compartments of two large, revolving stainless steel drums, with horizontal axes, housed



▲ The owners and crew provide a scale perspective to the working arrangements across the stern of Alannah Riley.

in watertight troughs arranged parallel to, and forward of, the fish selection conveyor. Intended primarily for prawns, the longer port drum has four transverse and three radial sections, while the shorter starboard drum, which will be mainly used for whitefish, incorporates two sections along its length.

After an adjustable period of time, during which catches in the receiving section are sprayed with water, the drum is automatically rotated through

120°. As a result, catches are then fully immersed in water at the bottom of the trough and washed thoroughly by bubble jets for the selected timescale, after which the drum rotates through a further 120°. This second movement lifts the contents of the previously submerged compartment clear of the washer.

On passing across short drainage shelves, another conveyor leads prawns to an automated dipping unit. Similar



▲ The central trawl console.



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in concept to the main catch selection/washing drums, the rotating prawn dip installation features nine compartments, each of which has a capacity of 63 litres. The independently time-controlled system ensures that prawns remain in the dip solution for the selected time (generally 8-15 minutes).

On release onto another catch conveyor, prawns are delivered to a large packing table, where a flush-mounted transverse conveyor, running along the middle of the table, takes the prawns to the crewmen for packing into 3kg cartons. Filled cartons are subsequently placed on storage racks in one of the two blast-freezing rooms located from the vessel's centreline to the starboard side, abaft the accommodation cabins.

After the product is frozen, it is then lowered to the forward freezer hold below the main deck, using a stainless steel lift located to port.

Danish refrigeration specialist Nordkol supplied two combined fishhold cooling/freezing systems, together with the associated compressor plant and a 2.5t Geneglance flake ice machine.

The two blast-freezer rooms



▲ Twin Cummins QSB 7 auxiliary engines drive 191kVA generators.
◀ The ABC 6DZ main engine.

on the main deck were supplied by GEA Refrigeration Ltd.

Engineerium

Alannah Riley's aft engineerium, which is characteristic of this design of vessel, features a particularly well-thought-out arrangement that will ensure maximum ease of access for all levels of service in years to come.

The main engine is a 6-cylinder ABC 6DZ model that develops 709kW @ 862rpm and is coupled to a Hundested CPG 280-2, 8.5:1 reduction gearbox to turn a Hundested four-bladed VP 3400mm-diameter propeller turning at a maximum speed of 101rpm in a matching high-efficiency nozzle. The centreline propulsion system is operated

through one of three sets of SeaMech electronic engine controls strategically positioned in the wheelhouse.

The vessel's main hydraulic system is driven by three Dennison load-sensing pumps via gearbox-mounted PTOs.

Two 37kW power packs, each driving Denison double-vane pumps, are used to operate the hydraulic towing pump, as well as to provide back-up operation for the split trawl winches. This arrangement also enables the deck machinery to be operated in harbour when the crew are either mending or taking on gear while routine maintenance work is carried out on the main engine.

Two Cummins QSB7 auxiliary engines drive 191kVA Newage Stamford 415/3/50 generators. A Mitsubishi S4 auxiliary engine running a 40kVA harbour genset is also fitted.

The engine exhausts are routed up through the port leg of the stylishly-raked aft gantry.

Housed in a combination of four main deep tanks (two forward and two aft), together with a daily service, Alannah Riley can start a trip carrying 72,000 litres of fuel.

Freshwater capacity is 17,000 litres. This total includes 12,000 litres in a bulbous bow tank, primarily for domestic use, and 5,500 litres in two wing tanks in the engineerium serving a 2.5t Geneglance ice machine. An ENWA freshwater maker is installed in the engine room with a capacity of 3,200 litres per 24 hours.

Two boxcoolers serve the main engine, gearbox and hydraulics. The Cummins auxiliaries are freshwater-cooled in conjunction with cooling pipes built into the bilge keels.

A hydraulically-operated Hundested SFT4 bow thruster of 120kW and Scan ST-2500 steering are also fitted.

A prominent feature of Alannah Riley is the extremely low level of noise evident throughout the boat. When steaming at 11 knots during trials, with 90% load on the ABC propulsion engine, the noise levels in the messdeck and cabins was recorded at 55dB (A). These very low levels, which mean that the main engine is barely discernible, are highly appreciated by the skipper and crew. ■



▲ General view of the catch selection, automated prawn dip and carton packaging arrangements on Alannah Riley.



Stern view of Alannah Riley.

Alannah Riley S 40

DETAILS

Owners: Neil, David and Ross Minihane, Castletownbere, Co Cork
Designer/Boatyard: Vestværfet ApS Hvide Sande Denmark
Agent: Castletownbere Fishermen's Co-op

DIMENSIONS and CAPACITIES

Length overall: 28.62m; **Length reg:** 23.95m; **Beam:** 9m; **Depth moulded:** Shelterdeck 6.8m; Maindeck 4.10m; **Draft:** 5.6m; **Tonnage:** 374 tonnes gross; **Fuel:** 72,000 litres; **Fresh water:** 17,000 litres; **Lube oil:** 2,000 litres; **Hydraulic oil:** 2,700 litres; **Blast freezer:** 2 x 10m³; Freezer hold 100m³; Refrigerated fishroom 100m³

ENGINEERUM

Main engine: ABC 6DZ of 709kW @ 862rpm driving through a Hundested CPG 280-2 8.5:1 reduction gearbox to a Hundested 3400mm-diameter four bladed CP propeller and matching high efficiency nozzle. **Speed:** 11.5 knots
Auxiliary engines: 2 x Cummins QSB7 153kW @ 1500rpm driving 2 x Stamford 191kVA 3/400/50kHz generators
Bow thruster: Hundested SFT 4 120kW
Fuel and oil filters: CC Jensen
Bilge & deck pumps: 2 x Azcue 7.5kW electrically-driven and 4 x ITT Flygt 4-inch deck suction pumps

DECK MACHINERY

Supplier: Rapp Marine
4 x 19t split trawl winches; two 2 x 21t split net drums; 2 x 21t single net drums; 2 x 6t Gilson winches; 2 x 4t Pullmaster codend winches; Toimil T-20500M/3 telescopic deck crane 20t/m c/w 1.8t Rotzler winch

FISH HANDLING/FISHROOM

Catch handling/prawn processing system: VCU Urk, Holland; **Refrigeration/freezing systems:** Nordkol, Hantsholm; **Blast freezing rooms:** GEA Refrigeration Ltd, Co Cavan; **Ice machine:** 1 x Geneglance 2.5t

ELECTRONICS

Suppliers: Barry Electronics Ltd, Killybegs; Scanmar and Michael Hayes, Skibbereen

Fish detection

Furuno FSV-84 sonar; Furuno FSV-1900B CHIRP echosounder 38kHz, WAASP multi-beam sounder; Scanmar ScanMate 6 net monitoring system c/w 3 x flow/symmetry sensors, 1 x multi-rig depth and angle master sensor and autotrawl integration using Scanbas 365 software

Navigation

Furuno FAR 1518 and M1835 radars; Furuno GP-170 and GP-33 GPS receivers; Furuno SC50 satellite compass; 2 x Sodena Turbowin plotting systems c/w AIS, ARPA interfaces; Simrad AP-70 autopilot C/W dual control; Furuno FA-170 Class A AIS

Communications

Sailor 6000 150W GMDSS MF/HF SSB radio telephone; Sailor 6126 DSC and Sailor 6210 VHF; 2 x Icom GM-1600 handheld GMDSS VHF; Furuno NX300 Navtex; Phontech talkback system; Jotron EPRIB and SART; BEL VSAT satellite communication system; BEL IP CCTV system c/w 4-way switcher & 8 x high resolution cameras; Intellian satellite TV

FISHING GEAR

Warp suppliers: Swan Net-Gundry, Killybegs - 4 x 1000 fathoms x 20mm-diameter DYNICE Dyneema warp; **Net Suppliers:** Faithlie Trawls Fraserburgh - 3 x 35-fathom triple-mouth prawn trawls rigged on 6in and 8in discs and 4 x 30-fathom twiple-mouth prawn trawls rigged on 6in & 8in discs; **Trawl doors:** 2 x Thyboron Type 11 76in, 2 x Thyboron Type 11 50in and 2000kg roller clump

ACCOMMODATION

4 x single-berth and 3 x twin-berth cabins

GENERAL

Engine controls: SeaMech electronic; **Insurance:** D & D Insurances Ltd, Dublin; **Lifesaving appliances:** Swan Net-Gundry and Viking; **Paint:** Hempel; **Steering:** AS Scan, Hvide Sande; **Wheelhouse seats:** 2 x Alu Design Skipper chairs