

LightCraft

12m Regional Patrol Craft



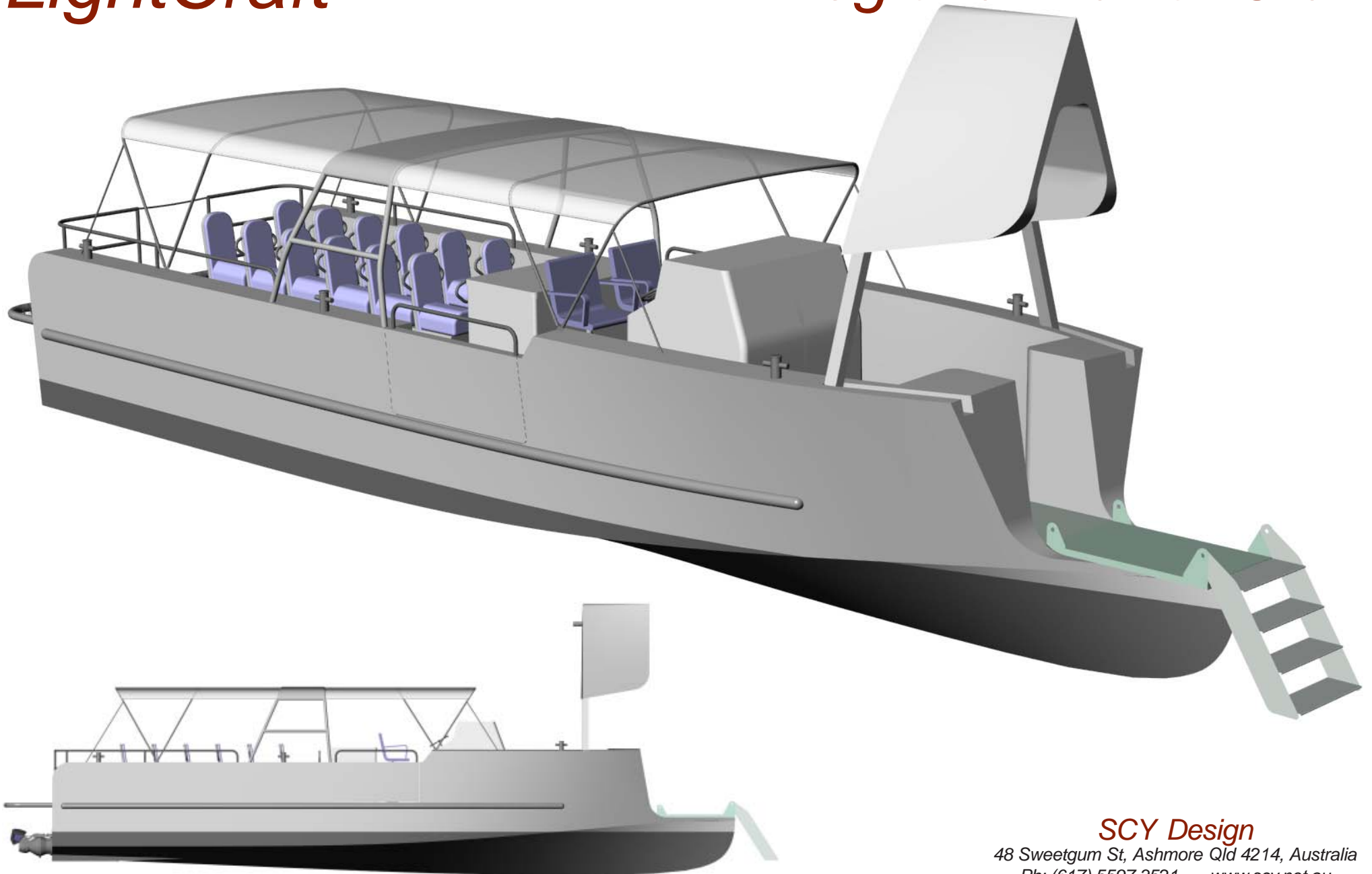
SCY Design

48 Sweetgum St, Ashmore Qld 4214, Australia

Ph: (617) 5597 3521 www.scy.net.au

LightCraft

12m Regional Patrol Craft



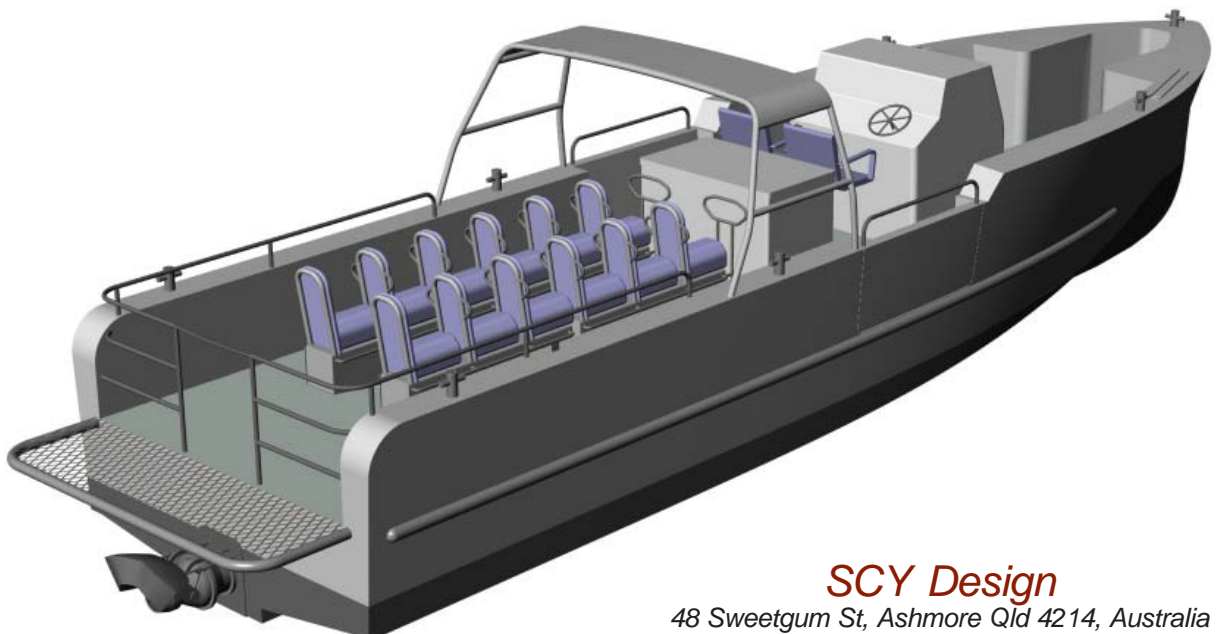
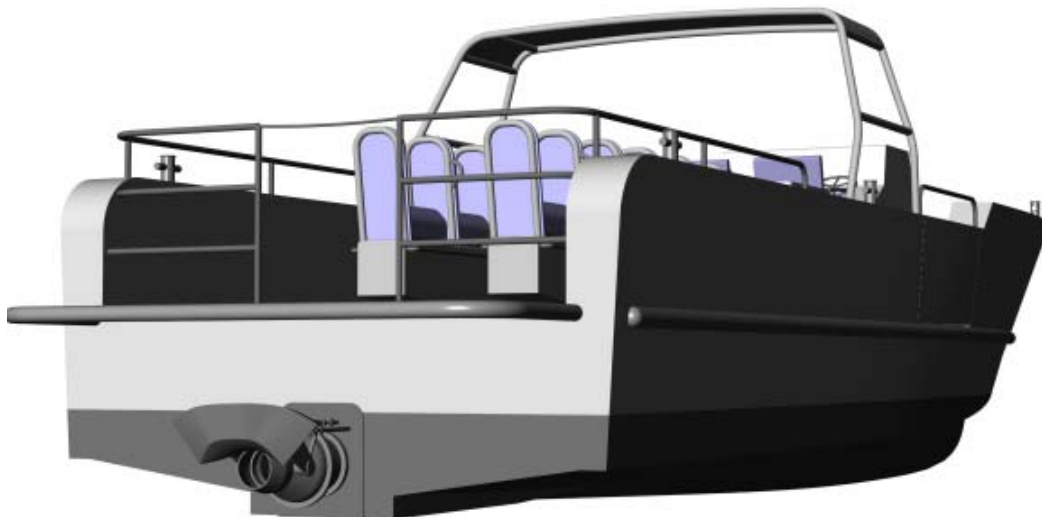
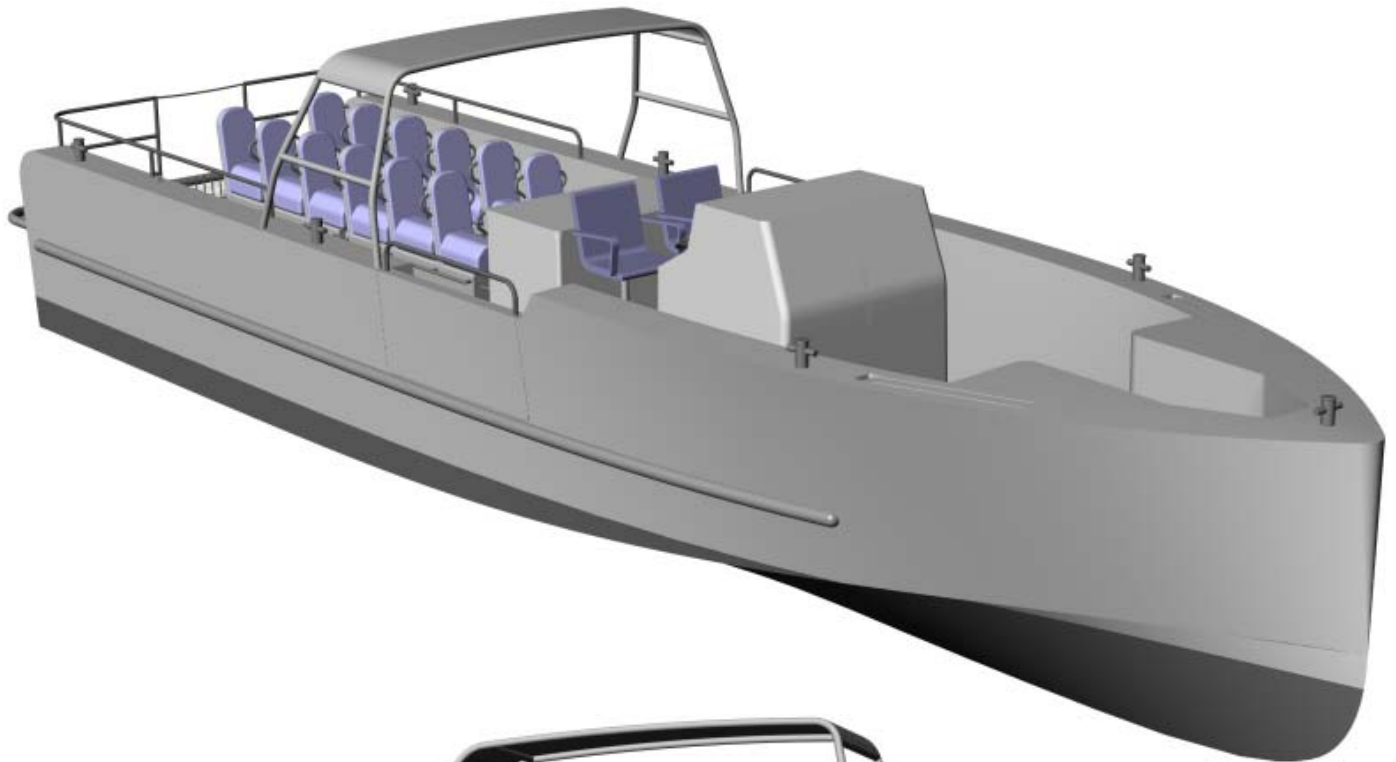
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LightCraft

12m RPC

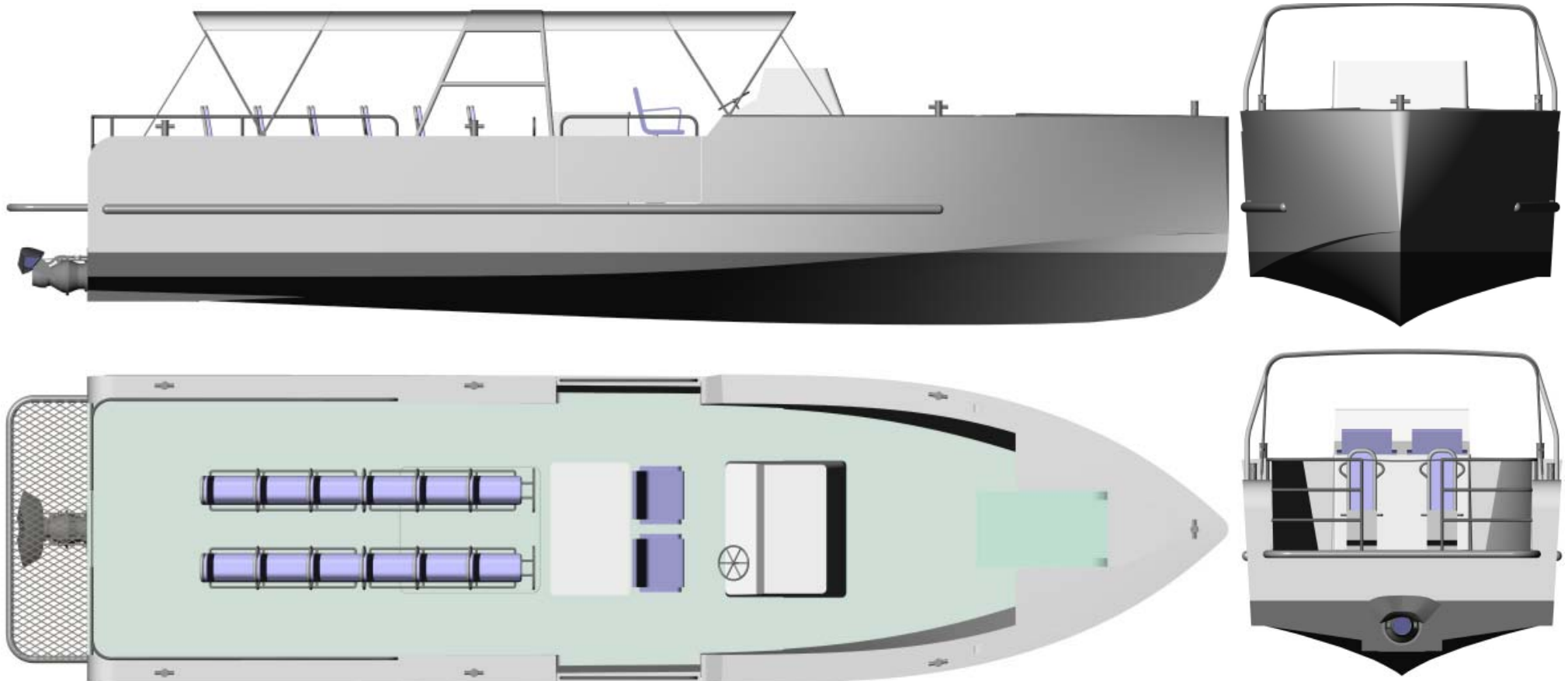


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LightCraft

12m Regional Patrol Craft



Class Standard :
DNV R3 Patrol
Survey: NSCV 2C

Construction :
Marine Grade Aluminium

LOA : 11.8m
Lmoulded: 11.8m
LWL : 11.7m
Beam : 3.2m
Draft : 0.8m
Deadrise: 19deg.
Fuel : 1000ts

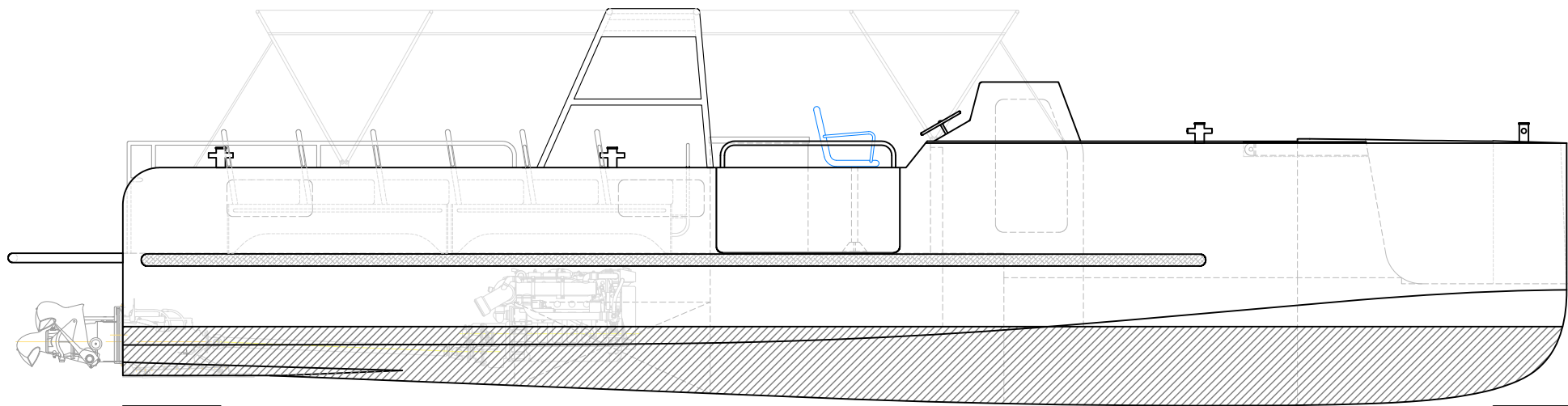
Aft Deck : 29m²
Foredeck: 3.5m²
Cargo Hold: 4.8m³

Payload 1: 12 Pax + 600kg Cargo
Payload 2: 3000kg

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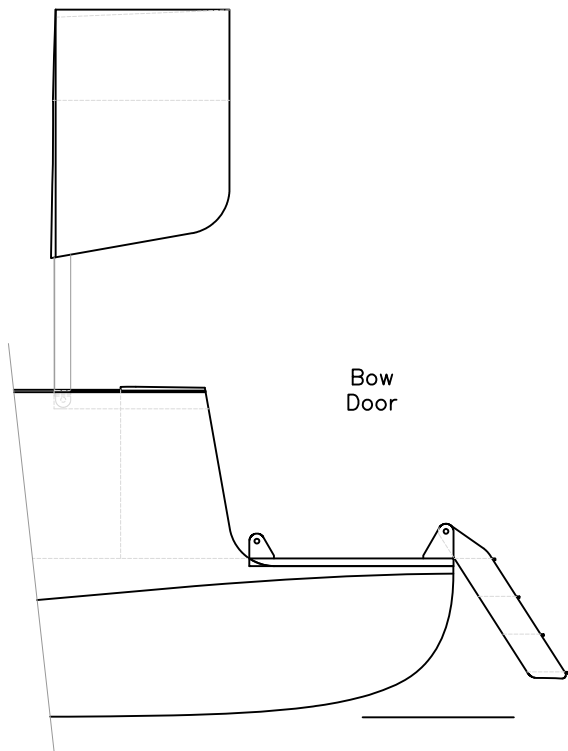
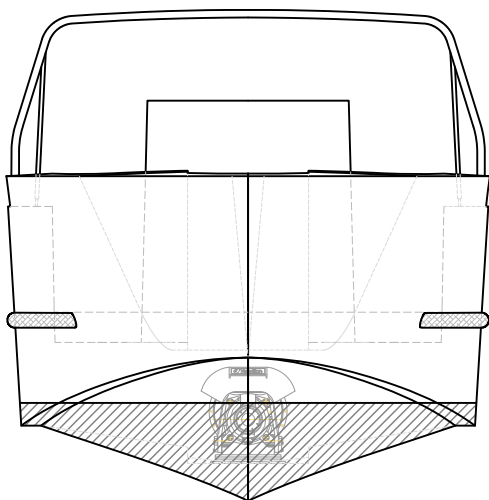
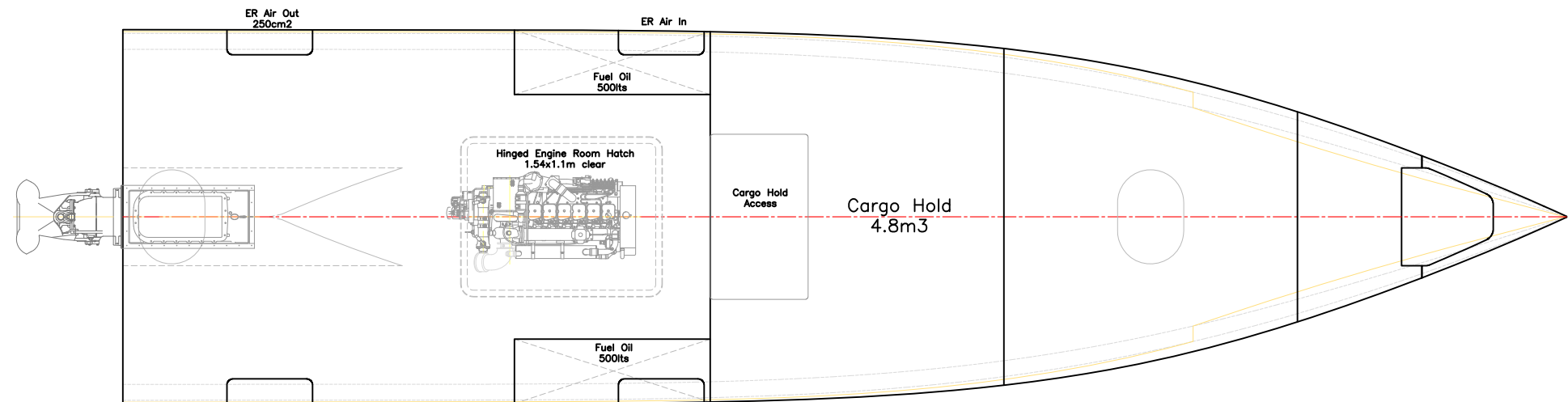
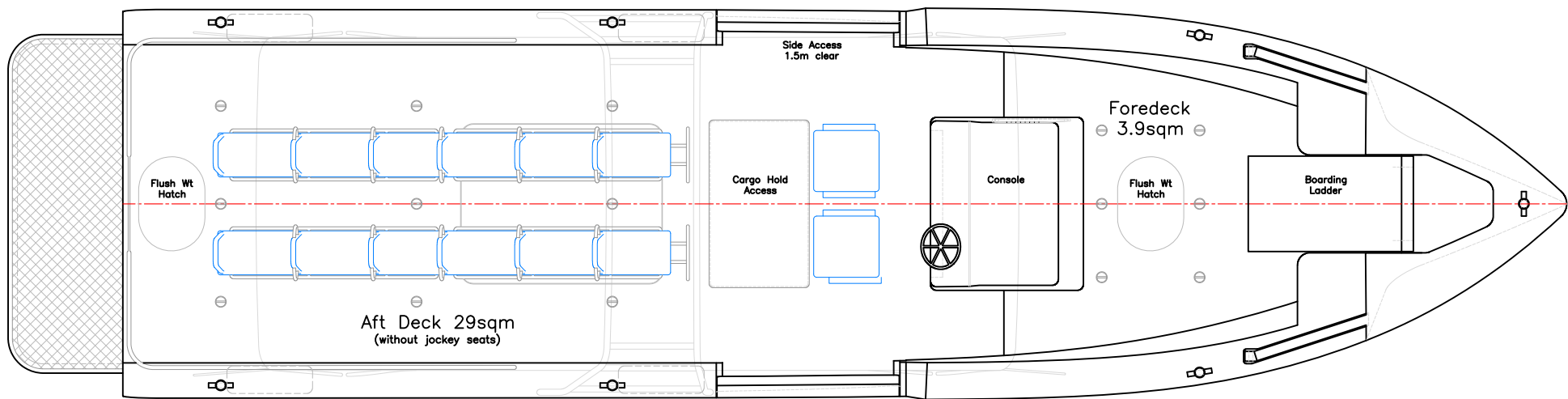
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12m Regional Patrol Craft



trsm 1 2 3 4 5 bhd 6 7 8 bhd 9 10 11 c.bhd 12 13 14

Engine Room Cargo Hold Fwd Void Forepeak



LOA: 12.7m
Lmoulded: 11.8m
LWL: 11.7m
Bmoulded: 3.2m
Bchine: 3.05m
Deadrise @ trsm: 9deg
Deadrise @ lcg: 19deg
Afrontal: 6m2 (to chine)
DRAFT(max): 0.6m
FUEL: 2x500lts
MAIN ENGINES: Cummins QSB6.7
380hp @ 3000rpm
GEARBOX: ZF 280-1
PROPULSION: Hamilton HJ292
CLASS: DNV R3 Patrol
SURVEY: NSCV 2C 2+12
(restricted offshore 30nm)
CONSTRUCTION: MARINE GRADE
ALUMINIUM

MAIN ENGINES: Cummins QSB6.7
380hp @ 3000rpm
SPEED max: 23knots (2.2t dwt)
SPEED cruise: 20knots (2.2t dwt)
RANGE: 330nm (2.2t payload)
MAIN ENGINES: Cummins QSB6.7
4800hp @ 3300rpm
SPEED max: 26knots (2.2t dwt)
SPEED cruise: 22knots (2.2t dwt)
RANGE: 330nm (2.2t payload)
PAYLOAD max1: 3 tonne
PAYLOAD max2: 12x100kg + 600kg
PERSONNEL: 12
CREW: 2

LightCraft
aluminium workboats

VESSEL: 12m Regional Patrol Craft

TITLE: GENERAL ARRANGEMENT

DWG No: 12RPC-100

DATE: 5/10/2014

SCALE: A3 1:35

DRAWN: MDW

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Load Conditons

WEIGHT
kg

LCG
m

VCG
m

LC 1 - Lightship

| | | | | | | |
|--------------------|-----|------|------|-------------|-------------|-------------|
| Lightship | | | | 5006 | 5.10 | 1.19 |
| Entrained Water | 1 | 45 | | 45 | 0.18 | 0.37 |
| Fuel Pt | 10% | 500 | 0.84 | 42 | 4.40 | 0.68 |
| Fuel Stbd | 10% | 500 | 0.84 | 42 | 4.40 | 0.68 |
| crew/effects | 2 | 105 | | 210 | 5.10 | 2.05 |
| stores | | | | 100 | 6.00 | 1.40 |
| passengers + gear | 0 | 100 | | 0 | 2.80 | 2.25 |
| pax gear (in hull) | 0 | 20 | | 0 | 6.00 | 0.70 |
| cargo | 0 | 1000 | | 0 | 2.80 | 1.75 |
| deadweight | | | | 394 | 5.18 | 1.59 |
| condition 1 | | | | 5445 | 5.06 | 1.22 |

LC 2 - Passenger Range

| | | | | | | |
|----------------------------|-----|------|------|-------------|-------------|-------------|
| Lightship | | | | 5006 | 5.10 | 1.19 |
| Entrained Water | 1 | 45 | | 45 | 0.18 | 0.37 |
| Fuel Pt | 50% | 500 | 0.84 | 210 | 4.40 | 0.60 |
| Fuel Stbd | 50% | 500 | 0.84 | 210 | 4.40 | 0.60 |
| crew/effects | 2 | 105 | | 210 | 5.10 | 2.05 |
| stores | | | | 100 | 6.00 | 1.40 |
| passengers + gear | 12 | 100 | | 1200 | 2.80 | 2.25 |
| pax gear (in hull) | 12 | 20 | | 240 | 6.00 | 0.70 |
| cargo | 0 | 1000 | | 0 | 2.80 | 1.75 |
| deadweight | | | | 2170 | 3.83 | 1.70 |
| departure condition | | | | 7221 | 4.69 | 1.34 |

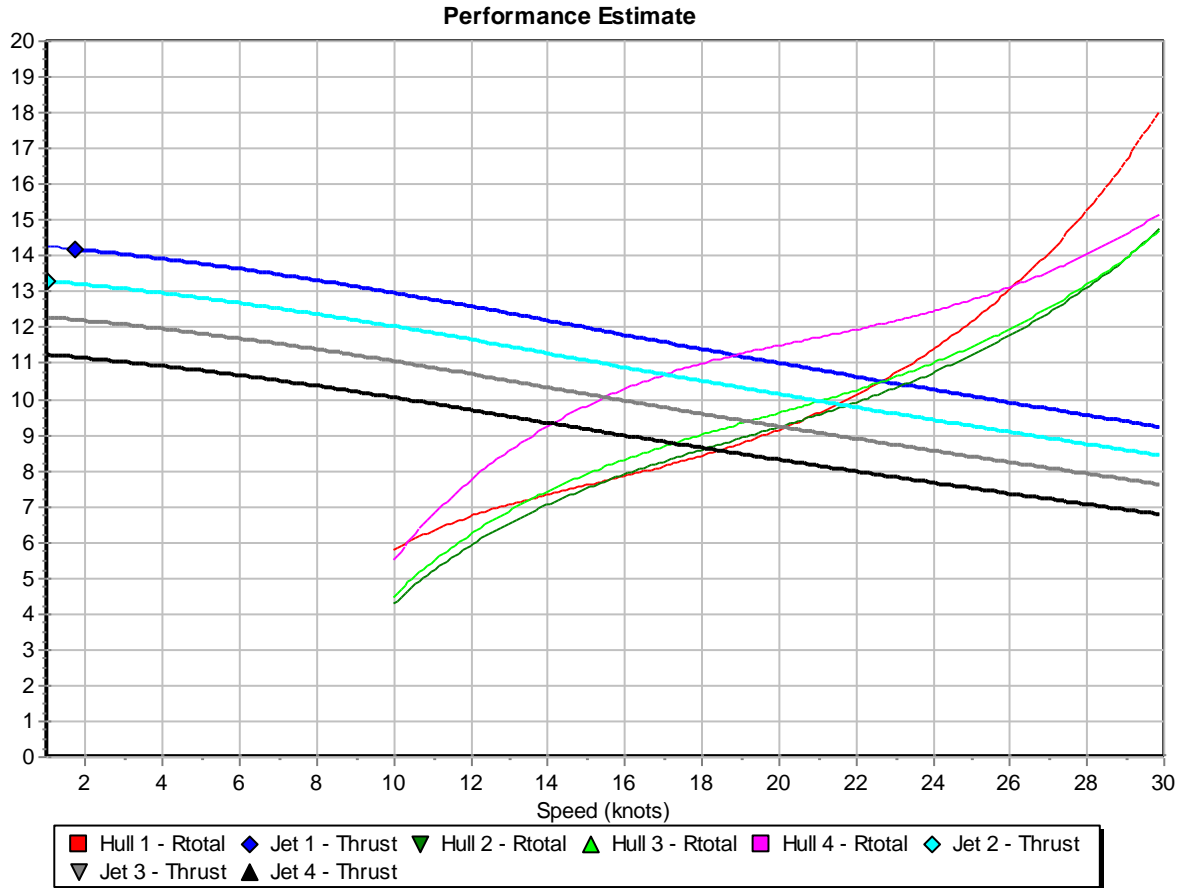
LC 3 - Passenger Departure

| | | | | | | |
|----------------------------|------|------|------|-------------|-------------|-------------|
| Lightship | | | | 5006 | 5.10 | 1.19 |
| Entrained Water | 1 | 45 | | 45 | 0.18 | 0.37 |
| Fuel Pt | 100% | 500 | 0.84 | 420 | 4.40 | 0.80 |
| Fuel Stbd | 100% | 500 | 0.84 | 420 | 4.40 | 0.80 |
| crew/effects | 2 | 105 | | 210 | 5.10 | 2.05 |
| stores | | | | 100 | 6.00 | 1.40 |
| passengers + gear | 12 | 100 | | 1200 | 2.80 | 2.25 |
| pax gear (in hull) | 12 | 20 | | 240 | 6.00 | 0.70 |
| cargo | 0 | 1000 | | 0 | 2.80 | 1.75 |
| deadweight | | | | 2590 | 3.93 | 1.59 |
| departure condition | | | | 7641 | 4.67 | 1.32 |

LC 4 - Max Cargo Depart

| | | | | | | |
|----------------------------|------|-----|------|-------------|-------------|-------------|
| Lightship | | | | 5006 | 5.10 | 1.19 |
| Entrained Water | | 1 | 45 | 45 | 0.18 | 0.37 |
| Fuel Pt | 100% | 500 | 0.84 | 420 | 4.40 | 0.68 |
| Fuel Stbd | 100% | 500 | 0.84 | 420 | 4.40 | 0.68 |
| crew/effects | | 2 | 105 | 210 | 5.10 | 2.05 |
| stores | | | | 100 | 6.00 | 1.40 |
| passengers + gear | | 0 | 100 | 0 | 2.80 | 2.25 |
| pax gear (in hull) | | 1 | 1000 | 1000 | 6.00 | 0.70 |
| cargo | | 2 | 1000 | 2000 | 2.80 | 1.75 |
| deadweight | | | | 4150 | 4.09 | 1.29 |
| departure condition | | | | 9201 | 4.62 | 1.23 |

Project: SCY Design 12m Regional Patrol Craft



Hull Resistance

| Curve | Displacement | LWL | LCG | BPx | Deadrise Mid / Aft |
|--------|--------------|---------|--------|--------|--------------------|
| Hull 1 | 5445 kg | 11.70 m | 5.06 m | 3.05 m | 19.00° / 9.00° |
| Hull 2 | 7221 kg | 11.70 m | 4.69 m | 3.05 m | 19.00° / 9.00° |
| Hull 3 | 7641 kg | 11.70 m | 4.67 m | 3.05 m | 19.00° / 9.00° |
| Hull 4 | 9201 kg | 11.70 m | 4.62 m | 3.05 m | 19.00° / 9.00° |

Hull resistance includes allowances for light air and wave resistance plus the Blount and Fox pre-planing factor. A correction factor has been included for any change in deadrise angle.

WaterJet Thrust

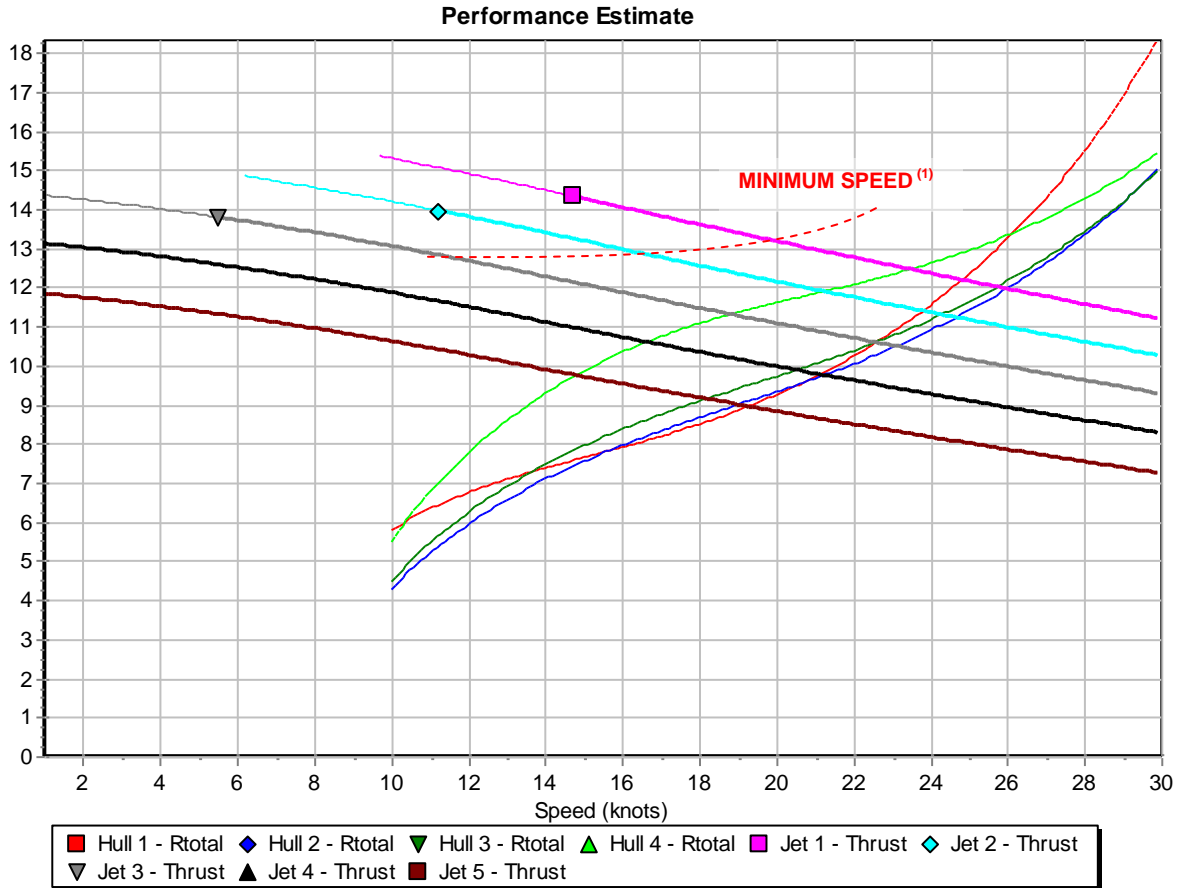
| Curve | Jet Model | Jet Input Power (-3% for Gearbox η) | Jet RPM | Impeller (approx. only) | % of Rated Power | Engine Details <i>Cummins QSB6.7 380hp@3000RPM</i> | Gear Ratio <i>ZF 280-1</i> |
|-------|-----------|--|---------|----------------------------|------------------|---|-------------------------------|
| Jet 1 | 1 x HJ292 | 1 x 368.6 mhp | 2310 | T22.00 | 100 | 380mbhp@3003RPM | 1.3:1 |
| Jet 2 | 1 x HJ292 | 1 x 331.7 mhp | 2230 | T22.00 | 90 | | |
| Jet 3 | 1 x HJ292 | 1 x 294.9 mhp | 2144 | T22.00 | 80 | | |
| Jet 4 | 1 x HJ292 | 1 x 258.0 mhp | 2051 | T22.00 | 70 | | |

⁽¹⁾ Lowest safe boat speed for continuous operation for input power levels to avoid cavitation (includes a 5 knot safety margin).

- Gear reductions have been assumed to have a 3% loss of power.
- The provided engine's power and revs have been used but not checked to be correct with manufacturer's specifications.
- Assumed full power is available to the jets (i.e. no auxiliary pumps, generators, etc. attached to engine).
- Maximum displacement is assumed to include the weight of the jet/s, gearbox/s, engine/s, controls, etc.

Warning: This is an estimate of speed only and no guarantee is expressed or implied. Hull resistance and Waterjet thrust have been estimated using information supplied & it is the responsibility of the designer / builder to satisfy themselves as to the accuracy of this information.

Project: SCY Design 12m Regional Patrol Craft Cummins QSB 6.7 480hp



Hull Resistance

| Curve | Displacement | LWL | LCG | BPx | Deadrise Mid / Aft |
|--------|--------------|---------|--------|--------|--------------------|
| Hull 1 | 5445 kg | 11.70 m | 5.06 m | 3.05 m | 19.00° / 9.00° |
| Hull 2 | 7221 kg | 11.70 m | 4.69 m | 3.05 m | 19.00° / 9.00° |
| Hull 3 | 7641 kg | 11.70 m | 4.67 m | 3.05 m | 19.00° / 9.00° |
| Hull 4 | 9201 kg | 11.70 m | 4.62 m | 3.05 m | 19.00° / 9.00° |

Hull resistance includes allowances for light air and wave resistance plus the Blount and Fox pre-planing factor. A correction factor has been included for any change in deadrise angle.

WaterJet Thrust

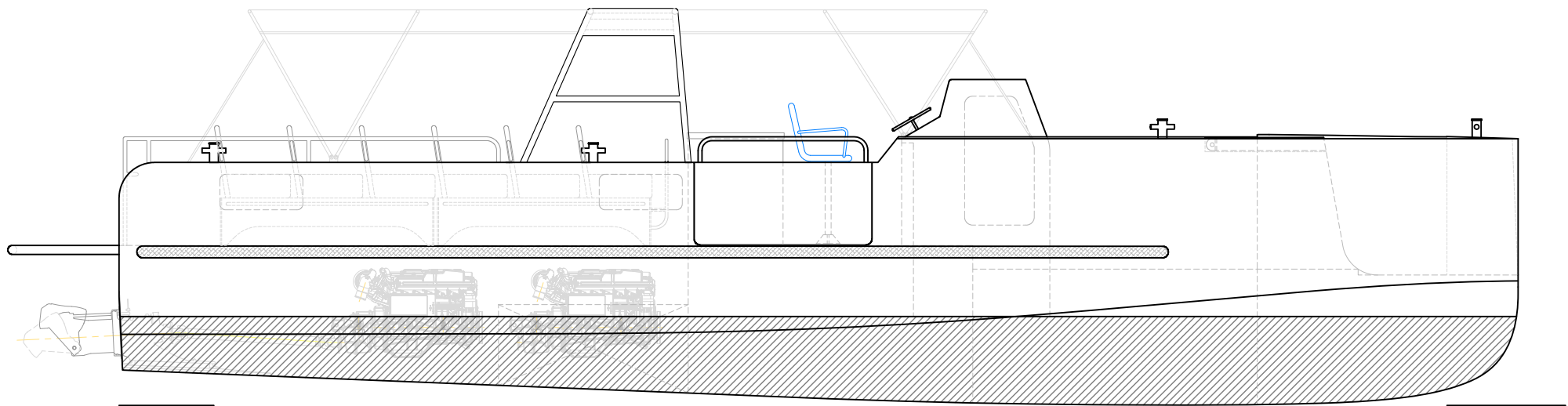
| Curve | Jet Model | Jet Input Power (-3% for Gearbox η) | Jet RPM | Impeller (approx. only) | % of Rated Power | Engine Details <i>Cummins QSB6.7 480mhp @ 3300RPM</i> | Gear Ratio <i>ZF280-1</i> |
|-------|-----------|--|---------|----------------------------|------------------|--|------------------------------|
| Jet 1 | 1 x HJ292 | 1 x 465.6 mhp | 2528 | T21.20 | 100 | 480mhp @ 3286RPM | 1.3:1 |
| Jet 2 | 1 x HJ292 | 1 x 419.0 mhp | 2441 | T21.20 | 90 | | " |
| Jet 3 | 1 x HJ292 | 1 x 372.5 mhp | 2347 | T21.20 | 80 | | " |
| Jet 4 | 1 x HJ292 | 1 x 325.9 mhp | 2244 | T21.20 | 70 | | " |
| Jet 5 | 1 x HJ292 | 1 x 279.4 mhp | 2132 | T21.20 | 60 | | " |

(1) Lowest safe boat speed for continuous operation for input power levels to avoid cavitation (includes a 5 knot safety margin).

- Gear reductions have been assumed to have a 3% loss of power.
- Assumed full power is available to the jets (i.e. no auxiliary pumps, generators, etc. attached to engine).
- Maximum displacement is assumed to include the weight of the jet/s, gearbox/s, engine/s, controls, etc.

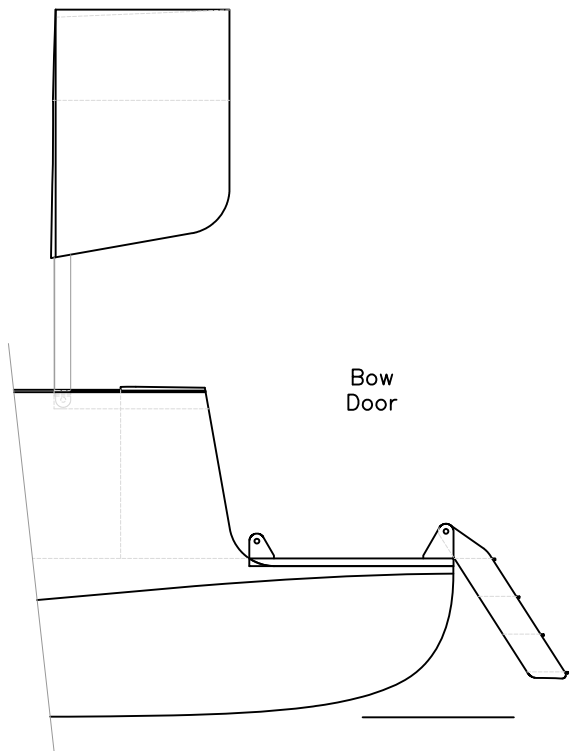
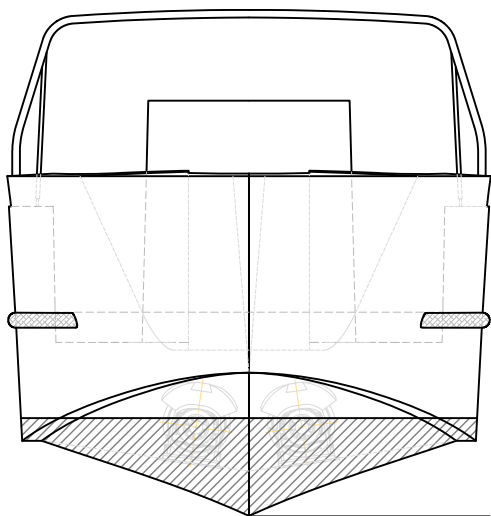
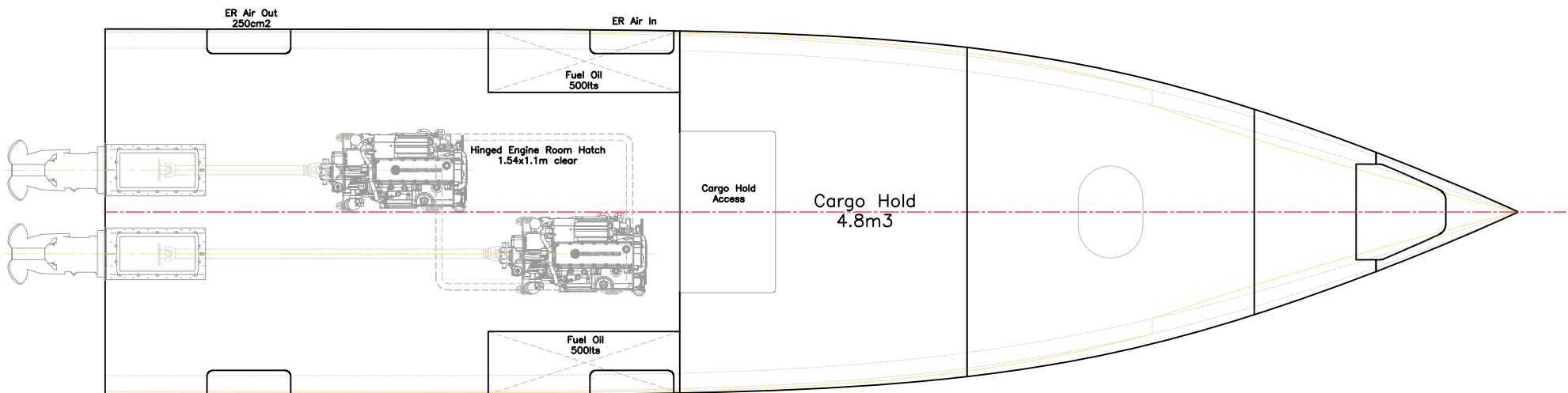
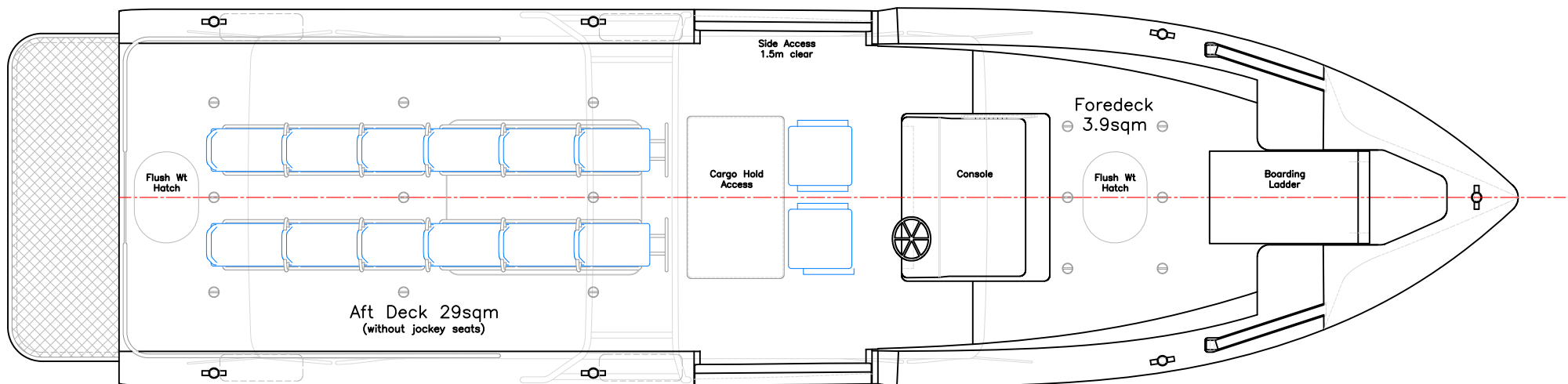
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12m Regional Patrol Craft



trsm 1 2 3 4 5 bhd 6 7 8 bhd 9 10 11 c.bhd 12 13 14

Engine Room Cargo Hold Fwd Void Forepeak



LOA: 12.7m
Lmoulded: 11.8m
LWL: 11.7m
Bmoulded: 3.2m
Bchine: 3.05m
Deadrise @ trsm: 9deg
Deadrise @ lcg: 19deg
Afrontal: 6m2 (to chine)
DRAFT(max): 0.6m
FUEL: 2 x 500lts
MAIN ENGINES: 2 x Steyr 3.2ltr
GEARBOX: 2 x ZF63
PROPULSION: 2 x Hamilton HJ241

MAIN ENGINES: 2 x Steyr SE236
231hp @ 3550rpm
SPEED max: 26knots (2.2t dwt)
SPEED cruise: 22knots (2.2t dwt)
RANGE: 320nm (1.6t payload)

MAIN ENGINES: 2 x Steyr SE306
292hp @ 3550rpm
SPEED max: 29knots (2.2t dwt)
SPEED cruise: 22knots (2.2t dwt)
RANGE: 320nm (1.6t payload)

CLASS: DNV R3 Patrol
SURVEY: NSCV 2C 2+12
restricted offshore 30nm
CONSTRUCTION: MARINE GRADE
ALUMINIUM

PAYLOAD max1: 3 tonne
PAYLOAD max2: 12x100kg + 600kg
PERSONNEL: 12
CREW: 2

LightCraft
aluminium workboats

VESSEL: 12m Regional Patrol Craft

TITLE: GENERAL ARRANGEMENT

DWG No: 12RPC-100

DATE: 5/10/2014

SCALE: A3 1:35

DRAWN: MDW

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Load Conditons

WEIGHT
kg

LCG
m

VCG
m

LC 1 - Lightship

| | | | | | | |
|--------------------|-----|-----|------|-------------|-------------|-------------|
| Lightship | | | | 5130 | 4.97 | 1.20 |
| Fuel Pt | 10% | 500 | 0.84 | 42 | 4.40 | 0.68 |
| Fuel Stbd | 10% | 500 | 0.84 | 42 | 4.40 | 0.68 |
| crew/effects | | 2 | 105 | 210 | 5.10 | 2.05 |
| stores | | | | 100 | 6.00 | 1.40 |
| passengers + gear | | 0 | 100 | 0 | 2.80 | 2.25 |
| pax gear (in hull) | | 0 | 20 | 0 | 6.00 | 0.70 |
| cargo | | 0 | 1000 | 0 | 2.80 | 1.75 |
| deadweight | | | | 394 | 5.18 | 1.59 |
| condition 1 | | | | 5524 | 4.99 | 1.23 |

LC 2 - Passenger Range

| | | | | | | |
|----------------------------|-----|-----|------|-------------|-------------|-------------|
| Lightship | | | | 5130 | 4.97 | 1.20 |
| Fuel Pt | 50% | 500 | 0.84 | 210 | 4.40 | 0.60 |
| Fuel Stbd | 50% | 500 | 0.84 | 210 | 4.40 | 0.60 |
| crew/effects | | 2 | 105 | 210 | 5.10 | 2.05 |
| stores | | | | 100 | 6.00 | 1.40 |
| passengers + gear | | 12 | 100 | 1200 | 2.80 | 2.25 |
| pax gear (in hull) | | 12 | 20 | 240 | 6.00 | 0.70 |
| cargo | | 0 | 1000 | 0 | 2.80 | 1.75 |
| deadweight | | | | 2170 | 3.83 | 1.70 |
| departure condition | | | | 7300 | 4.63 | 1.35 |

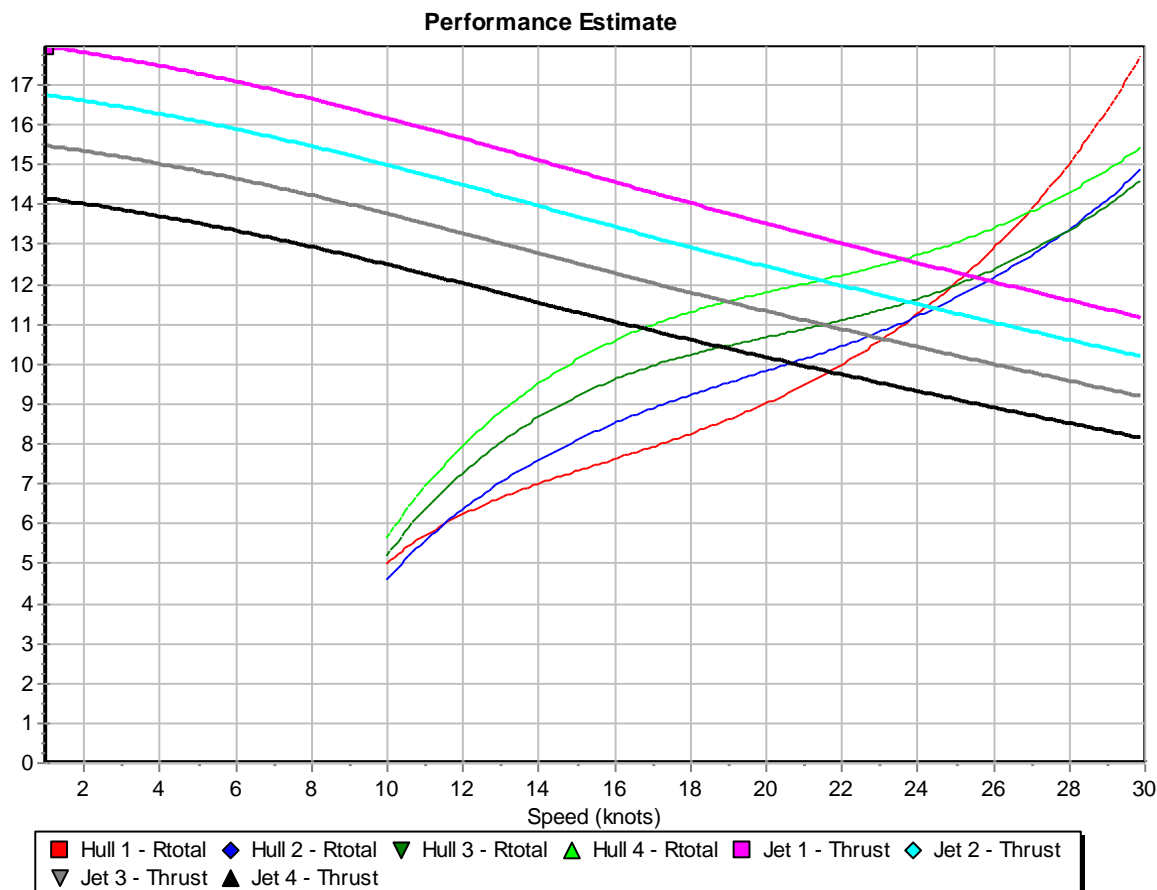
LC 3 - Passenger Departure

| | | | | | | |
|----------------------------|------|-----|------|-------------|-------------|-------------|
| Lightship | | | | 5130 | 4.97 | 1.20 |
| Fuel Pt | 100% | 500 | 0.84 | 420 | 4.40 | 0.80 |
| Fuel Stbd | 100% | 500 | 0.84 | 420 | 4.40 | 0.80 |
| crew/effects | | 2 | 105 | 210 | 5.10 | 2.05 |
| stores | | | | 100 | 6.00 | 1.40 |
| passengers + gear | | 12 | 100 | 1200 | 2.80 | 2.25 |
| pax gear (in hull) | | 12 | 20 | 240 | 6.00 | 0.70 |
| cargo | | 0 | 1000 | 0 | 2.80 | 1.75 |
| deadweight | | | | 2590 | 3.93 | 1.59 |
| departure condition | | | | 7720 | 4.62 | 1.33 |

LC 4 - Max Cargo Depart

| | | | | | | |
|----------------------------|------|-----|------|-------------|-------------|-------------|
| Lightship | | | | 5130 | 4.97 | 1.20 |
| Fuel Pt | 100% | 500 | 0.84 | 420 | 4.40 | 0.68 |
| Fuel Stbd | 100% | 500 | 0.84 | 420 | 4.40 | 0.68 |
| crew/effects | | 2 | 105 | 210 | 5.10 | 2.05 |
| stores | | | | 100 | 6.00 | 1.40 |
| passengers + gear | | 0 | 100 | 0 | 2.80 | 2.25 |
| pax gear (in hull) | | 1 | 1000 | 1000 | 6.00 | 0.70 |
| cargo | | 1 | 2000 | 2000 | 2.80 | 1.75 |
| deadweight | | | | 4150 | 4.09 | 1.29 |
| departure condition | | | | 9280 | 4.58 | 1.24 |

Project: SCY Design 12m Regional Patrol Craft Twin SE236



Hull Resistance

| Curve | Displacement | LWL | LCG | BPx | Deadrise Mid / Aft |
|--------|--------------|---------|--------|--------|--------------------|
| Hull 1 | 5524 kg | 11.70 m | 4.99 m | 3.05 m | 19.00° / 9.00° |
| Hull 2 | 7720 kg | 11.70 m | 4.62 m | 3.05 m | 19.00° / 9.00° |
| Hull 3 | 8300 kg | 11.70 m | 4.41 m | 3.05 m | 19.00° / 9.00° |
| Hull 4 | 9280 kg | 11.70 m | 4.58 m | 3.05 m | 19.00° / 9.00° |

Hull resistance includes allowances for light air and wave resistance plus the Blount and Fox pre-planing factor. A correction factor has been included for any change in deadrise angle.

WaterJet Thrust

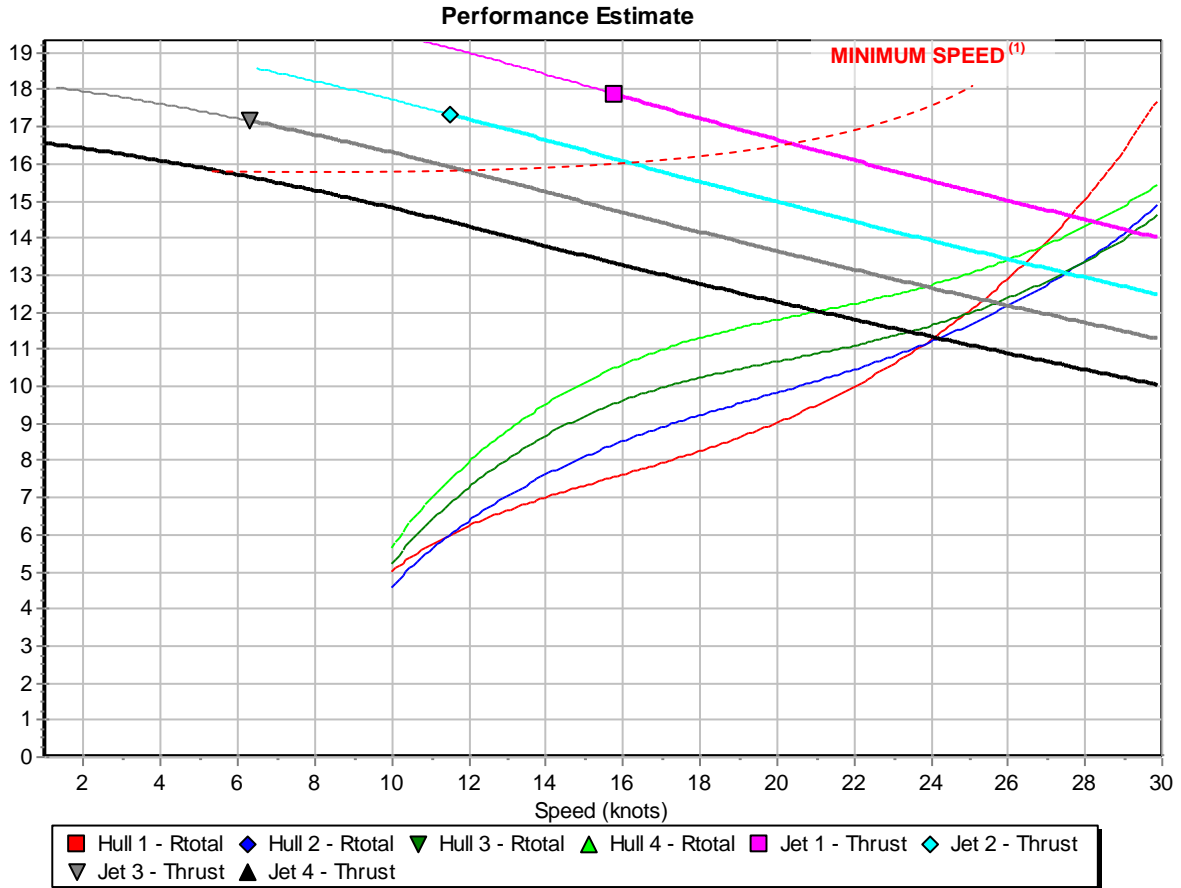
| Curve | Jet Model | Jet Input Power | Jet RPM | Impeller | % of Rated Power | Engine Details | Gear Ratio |
|-------|-----------|---------------------------|---------|----------------|------------------|--------------------------------|------------|
| | | (-3% for Gearbox η) | | (approx. only) | | Steyr SE236 231hp @ 3550RPM | ZF 63 |
| Jet 1 | 2 x HJ241 | 2 x 224.0 mhp | 2801 | T7.50 | 100 | 231bhp @ 3518RPM | 1.256:1 |
| Jet 2 | 2 x HJ241 | 2 x 201.7 mhp | 2704 | T7.50 | 90 | | " |
| Jet 3 | 2 x HJ241 | 2 x 179.3 mhp | 2600 | T7.50 | 80 | | " |
| Jet 4 | 2 x HJ241 | 2 x 156.8 mhp | 2487 | T7.50 | 70 | | " |

⁽¹⁾ Lowest safe boat speed for continuous operation for input power levels to avoid cavitation (includes a 5 knot safety margin).

- Gear reductions have been assumed to have a 3% loss of power.
- Minimum jet rpm (highest gear ratio) is always preferred to maximise margins over cavitation.
- Assumed full power is available to the jets (i.e. no auxiliary pumps, generators, etc. attached to engine).
- Maximum displacement is assumed to include the weight of the jet/s, gearbox/s, engine/s, controls, etc.

Warning: This is an estimate of speed only and no guarantee is expressed or implied. Hull resistance and Waterjet thrust have been estimated using information supplied & it is the responsibility of the designer / builder to satisfy themselves as to the accuracy of this information.

Project: SCY Design 12m Regional Patrol Craft Twin SE306



Hull Resistance

| Curve | Displacement | LWL | LCG | BPx | Deadrise Mid / Aft |
|--------|--------------|---------|--------|--------|--------------------|
| Hull 1 | 5524 kg | 11.70 m | 4.99 m | 3.05 m | 19.00° / 9.00° |
| Hull 2 | 7720 kg | 11.70 m | 4.62 m | 3.05 m | 19.00° / 9.00° |
| Hull 3 | 8300 kg | 11.70 m | 4.41 m | 3.05 m | 19.00° / 9.00° |
| Hull 4 | 9280 kg | 11.70 m | 4.58 m | 3.05 m | 19.00° / 9.00° |

Hull resistance includes allowances for light air and wave resistance plus the Blount and Fox pre-planing factor. A correction factor has been included for any change in deadrise angle.

WaterJet Thrust

| Curve | Jet Model | Jet Input Power (-3% for Gearbox η) | Jet RPM | Impeller (approx. only) | % of Rated Power | Engine Details Steyr SE306 292bhp@3550RPM | Gear Ratio ZF 220 |
|-------|-----------|--|---------|----------------------------|------------------|---|----------------------|
| Jet 1 | 2 x HJ241 | 2 x 292.0 mhp | 3161 | T6.80 | 100 | 292mbhp@3530RPM | 1.128:1 |
| Jet 2 | 2 x HJ241 | 2 x 254.9 mhp | 3021 | T6.80 | 90 | | " |
| Jet 3 | 2 x HJ241 | 2 x 226.6 mhp | 2905 | T6.80 | 80 | | " |
| Jet 4 | 2 x HJ241 | 2 x 198.3 mhp | 2778 | T6.80 | 70 | | " |

(1) Lowest safe boat speed for continuous operation for input power levels to avoid cavitation (includes a 5 knot safety margin).

- Gear reductions have been assumed to have a 3% loss of power.
- Minimum jet rpm (highest gear ratio) is always preferred to maximise margins over cavitation.
- Assumed full power is available to the jets (i.e. no auxiliary pumps, generators, etc. attached to engine).
- Maximum displacement is assumed to include the weight of the jet/s, gearbox/s, engine/s, controls, etc.

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