

Frank Dethridge Memorial Address

*From automation to autonomy:
Can the law keep up?*

Paul David QC

Alfred Tennyson

For I dip't into the future,
far as human eye could see,

Saw the vision of the world,
and all the wonder that would be;

Saw the heavens fill with
commerce, argosies of magic
sails,

Pilots of the purple twilight
dropping down with costly bales;



My Bike



How I left my comfort zone

Port of Auckland



The bustling vibrant port

Harbour traffic



E-scooters



The changes on my ride got me thinking

Questions arising

- Cargo ships without master, pilot or crew?
- Ferries with passengers but no master or crew?
- Automated cargo operations in port – digitally linked to autonomous ships?
- What will the effects and issues around this be?

Autonomous ships

Yara Birkland



USV Maxlimer



FinFerries 2018
80 passengers

How does technology work

- Data collection by sensors
- Real-time status of ship relayed to computers on board or to shore computers
- Analysis and responses given to carry out operation of ship
- All linked to advances in robotics, sensors and artificial intelligence/learning computers

Degrees of autonomy

- IMO-4 conditions from remote controlled and partially manned to fully autonomous with no crew.
- Important point-remote control or fully autonomous when no master or crew
- On-going scoping exercise
- Fundamentally changed the “ship”
- Offers opportunity and disruption

Happening

- IMO and CMI and various other countries' regulators believe change is not so far away
- First perhaps- specialist vessels – work boats, tugs, then ferries, small coastal trading ships
- Coastal waters progressing to ocean bound?
- Timing?

Regulation

- Maritime law principles broad system of longstanding legal principles relating to maritime venture
- Regulation for safe operation and navigation, design and construction, manning, prevention of pollution
- National law implements conventions and regulates nationally

Can autonomous ships fit in?

- Definitions of “ship”
- Generally broad and inclusive in international and national regulation
- Likely to cover unmanned ships
- But substance of key international instruments/ domestic safety regulation impossible/hard to apply

Substance doesn't work

- Radical change in operation
- Regulation on certification, operation, watch-keeping, collision avoidance and manning unworkable or not clearly effective

Need new rules?

- May well be a “ship” for registration/ jurisdiction
- But substance of most of regulatory law hard/difficult to operate – COLREGS, STCW, SOLAS
- Need specific rules for approval and operation – equivalent performance to manned but new

New liability scenario

- Liability for loss and damage in accident
- Possible shift in liability focus – from ship owner to manufacturer/ designer/ certifier
- Issues for national courts
- Insurance issues, also cyber risk, new pirates?

What are we doing?

- CMI work – IMO scoping exercise
- But at national level?
- Examine opportunity presented by technology
- Consider national regulatory framework
- Amendments to regulate autonomous ships for operation in NZ

Last word – home for tea

- Time to do the work is now
- Develop local expertise – local standards
- Potential real benefit for NZ
- Need for clarity



Final Thoughts

- Part of wide ranging change
- Timing uncertain
- Work to be done to keep up