

GROA training

Selwyn Jackson
15 February 2016



Agenda

- Motorboats
 - Types of engines
 - Fuel
 - Piloting tips
 - SAMSA boat regulations
 - SAMSA skipper's certificate

Types of petrol engines - advantages

Two stroke

- Lighter
- Smaller
- Cheaper
- Simpler engine design
- Better power to weight ratio
- Oil added to fuel
- Can be laid down either side

Four stroke

- Quieter
- More fuel efficient
- Oil in crankcase
- Uses less oil
- Can idle for long periods, spark plug does not get carboned up
- More environmentally friendly

Petrol engine types - disadvantages

Two stroke

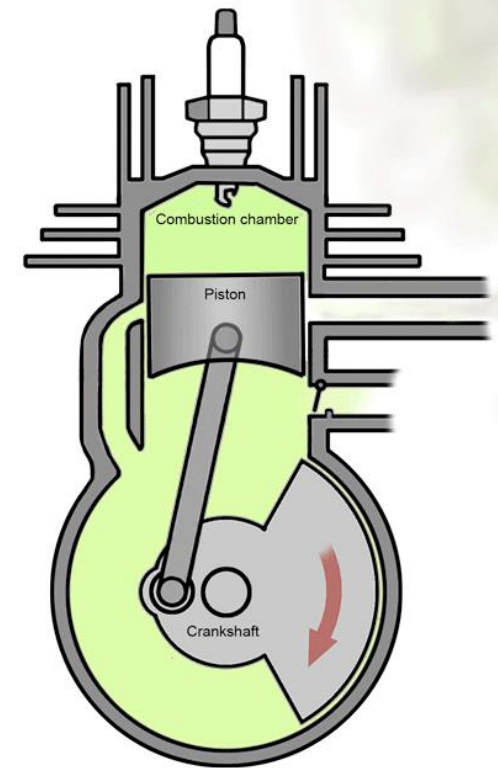
- Noisy
- Fuel inefficient
- Oil must be added to fuel
- Uses more oil
- Idling for long periods causes spark plug to get carboned up
- Less environmentally friendly

Four stroke

- Heavier
- Bigger
- More complex design
- Lower power to weight ratio
- More expensive
- Must be laid down on correct side

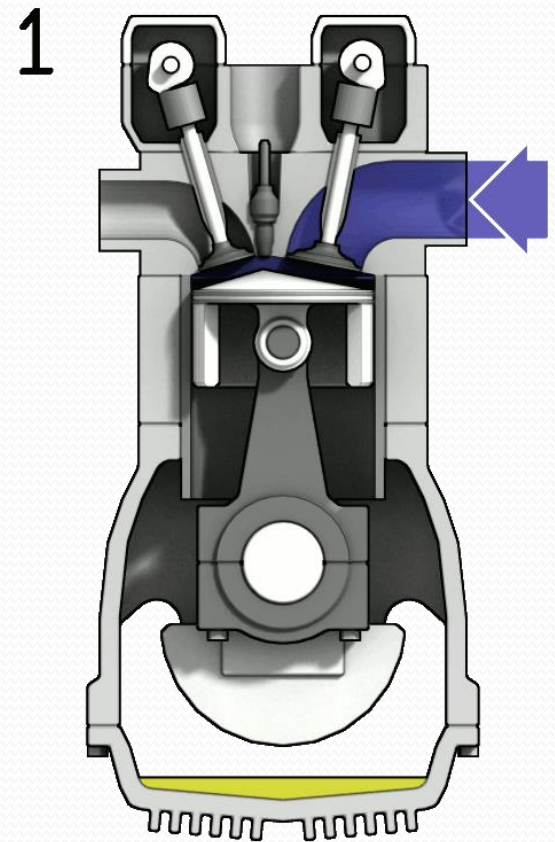
Two stroke

- Power stroke every revolution
- No valves
- Fresh charge is mixed with exhaust gasses
- Fuel passes through crankcase and oil in fuel does lubrication



Four stroke

- Power stroke every 2 revolutions
 1. Intake
 2. Compression
 3. Power
 4. Exhaust
- Valves control inlet and outlet
- Larger flywheel to keep rotation going
- Separate crankcase with oil



Two stroke engines



Four stroke engines



Filling petrol tanks

- Add oil for two stroke engines – 1:50 (Yamaha says 1:100)
 - Use 1:50 - 20 litre tank takes 400 ml
 - 1:100 lean ratio can cause piston rings to freeze up
 - Use outboard oil (best for water cooled engines)
 - Oil should be added to tank first so fuel mixes properly
 - 2 stroke engine on unmixed fuel is like running it without oil
- Do not add oil to four stroke engine petrol tanks



Key points

- Two stroke mix 1:50 (even for Yamaha)
- Mark all tanks
- Fill tanks more than 20 metres away from water
- Two stroke engines need to be revved every now and then to clear the carbon off the spark plug
- Take care when laying down four stroke - usually on handle
- If in doubt – ASK



Gears

- Do not change gears too quickly – damage gearbox
 - Always pause in neutral before going the other way
- Yamaha and Parson – forward/reverse gear lever
- Mercury – on throttle



Dead man switch or Kill switch

- Should be connected to pilots wrist
 - Kills engine if you fall out
- Do not use cable tie to hold switch
- Mercury has a switch



Tell tale

- Check tell tale regularly
- Stream of water indicates that water cooling is working



Shallow water

- In shallow water lift motor
- Keep propeller from hitting rocks
- Use paddle



SAMSA requirements for motor boats

- The smaller pleasure vessels such as kayaks, canoes, sailing dinghies and other sailing vessels under 7 metres, rowing boats and other vessels powered by human-power, power driven vessels **powered by engines ≤ 15 HP**, jet skis and the like are either exempted from parts of the regulations or have special provisions which apply to them
- but they shall have **sufficient buoyancy** to keep the vessel afloat when completely swamped; and
- shall carry the **safety equipment** provided for in the table in Annexure 2 (Small Vessel Regulations)

Safety equipment for SAMSA

- Category R, max 15hp motor:
 - Built in buoyancy
 - Approved buoyancy aid for each person in boat
 - 10m tow line
 - Bailing device for boats that are not self bailing
- Recommended:
 - Paddle

SAMSA skipper's certificate R

- Required for any boat with engine greater than 15hp
- Category R vessels operating solely on inland waters:
 - Defined as all water areas accessible to the public and contained within ports and fishing harbours lagoons, rivers, dams, wetlands and lakes in the Republic

SAMSA skipper's certificate

Date issued
Datum uitgereik: 2009-02-23



TVS/53(2)

Certificate No.
Sertifikaat Nr.

038790

REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID-AFRIKA

CERTIFICATE OF COMPETENCE
BEKWAAMHEIDSERTIFIKAAT



Issued by the South African Maritime Safety Authority on behalf of the Government of the Republic of South Africa in terms of the Merchant Shipping Act, 1951 (Act 57 of 1951) to a skipper of a small vessel./Uitgereik deur die Suid-Afrikaanse Maritieme Veiligheidsowerheid namens die Regering van die Republiek Suid-Afrika kragtens die Handelskeepvaartwet, 1951(Wet 57 van 1951) aan 'n skipper van 'n klein vaartuig.

1. Issued to: / Uitgereik aan: **SELWYN HAMILTON JACKSON**
(Full names and surname)/ (Volle voorname en van)
2. Identity No: / Identiteitsnommer: **520525 5035 081**
3. Type and category of vessel or vessels involved: / Tipe en kategorie van betrokke vaartuig of vaartuie:
CATEGORY R VESSEL (≤ 9 METRES)
4. Level of Competency and limitations (if any): / vlak van Bekwaamheid en beperkings (indien enige):
SKIPPER OF A POWER DRIVEN VESSEL LIMITED TO OPERATING WITHIN A PORT, FISHING HARBOUR, TIDAL RIVER, LAGOON, ESTUARY AND ALL INLAND WATER IN SOUTH AFRICA
5. Additional Endorsements (if any): / Bykomende Endossemente (indien enige):
5.1 NIL
6. Date of test: / Datum van toets: **2008-07-27**
7. Examination Authority: / Eksamenowerheid: **SADSAA**
8. It is hereby certified that the above named person has been tested and found to have the required sense of responsibility and standard of knowledge and experience to act as skipper of the vessel or vessels described in this certificate. / Dit word hierby gesertifiseer dat bogenoemde persoon getoets is en bevind is om te beskik oor die nodige verantwoordelikhedsin en standaard van kennis en ondervinding om op te tree as skipper van die vaartuig of vaartuie soos beskryf in hierdie sertifikaat.
9. Any enquiries regarding this certificate can be directed to THE REGISTRAR OF SEAFARERS, SAMSA, P.O Box 13186, Hatfield 0028. Tel: + 27 12 366 2600, Fax: + 27 12 366 2601 / Enige navrae aangaande hierdie sertifikaat kan gerig word aan DIE REGISTRATEUR VAN SEEVAARDERS, SAMVO, Posbus 13186, HATFIELD, 0028, Tel: + 27 12 366 2600, Faks: +27 12 366 2601

SOUTH AFRICAN MARITIME
SAFETY AUTHORITY

OFFICIAL STAMP
AMPTELIKE STEMPEL
HATFIELD, PRETORIA, 0028


for CHIEF EXECUTIVE OFFICER, SAMSA
nms HOOF UITVOERENDEBEAMPTÉ, SAMVO

SAMSA Skipper's certificate R

- Over 16 years old
- Doctor's certificate
- Proof of identity
- 2 passport photographs
- 25 hours experience – signed by responsible person
- Attend approved course > 6 hours
- Written exam – pass mark 80%
- Practical evaluation (20 minutes)

- Costs are R1200 to R2000

Skipper's course (> 6 hours)

- General terminology
- Boat handling
- Rope work and knots
- Engines
- Legal knowledge and responsibility
- Rules of the road
- Environmental aspects
- Safety afloat
- Trailers

Small Vessel Seamanship Guide available from NSRI for R87

Practical evaluation (20 min)

- Pre-launch procedures - weather check, log trip, crew-briefing, vessel check
- Launch craft - inspect launch site, operate craft safety
- Anchor usage - let down, set and weigh anchor
- Ropes and knots - make basic knots and explain uses
- Routine checks - weather, position, fuel, currents and constant lookout
- Safety – show donning an approved lifejacket
- Outboard motors - working knowledge, emergency repairs, maintenance
- Loading and trim - ensure correct trim and proper stowage
- Man overboard drill - demonstrate retrieving crew member
- Capsized craft - explain recovery procedures
- Landing craft - dock or land craft safety
- After-use procedures - log trip, maintenance, inspection, check fuel



Always approach the slipway slowly and with caution and preferably in Reverse!

Don't forget ...

- Bung plugs



Have Fun