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နိဒါန်း

၁။ Rowing လှေများကို ရှေ့အခါက ရေကြောင်းဖြင့် တစ်နေရာမှ တစ်နေရာသို့ကူးသန်းသွားလာ နိုင်ခြင်း၊ ပင်လယ်ရပ်ခြားခရီးနှင့်နိုင်ရန်နှင့် စစ်ဘက်ဆိုင်ရာရေယာဉ်များဖြစ် အသုံးပြုခဲ့ကြသည်။ ထိုအချိန်က လှေအမျိုးအစားများ တစ်ခုနှင့် တစ်ခုမတူညီကျသော်လည်း လှေကိုရွေ့လျားနိုင်စေရန် လှော်တက်အရှည် နှင့် လူ၏ခွန်အားကိုအသုံးပြု၍ လှော်ခတ်ရသည်။ ထိုသို့လှော်ခတ်နိုင်ရန်အတွက် ကိုယ်ခန္ဓာကြံခိုင်မှု၊ ခွန်အားဗလရှိရန် လိုအပ်ပေသည်။

ယခုအခါတွင် ဖွံ့ဖြိုးတိုးတက်လာသည့်နှင့်အမျှ ခေတ်မီနည်းစနစ်များဖြင့် လှေကိုပြုလုပ်တပ်ဆင်ပြီး နည်းပညာပိုင်းနှင့် ကျွမ်းကျင်မှုကိုပေါင်းစပ်ကာ လှော်ခတ်လာကြသည်။ ၎င်း (Rowing) လှေအမျိုးအစား မှာ အနောက်နိုင်ငံသားများ၏ အဓိကအားကစားနည်းလည်းဖြစ်သည်။ Rowing အားကစားနည်းသည် လှေနှင့် အားကစားသမားအကြား ညီညွတ်စွာရွေ့လျားမှုလိုအပ်သည့် ကစားနည်းဖြစ်သည်။ Rowing လှေကို ကောင်းမွန်စွာလှော်ခတ်နိုင်ရန်နှင့် နည်းစနစ်ပိုင်းမှန်ကန်စွာ လေ့လာသင်ယူနိုင်ရန် တိကျမှန်ကန် သည့်ချိန်ညှိမှု၊ လိုအပ်သည့်ပစ္စည်းတပ်ဆင်နိုင်ရန် လိုအပ်ပါသည်။ Rowing လှေကို အဓိကအားဖြင့် (Sweep Rowing) နှင့် (Sculling Rowing) ဟူ၍ လှေအမျိုးအစား(၂)ခု ခွဲထားပါသည်။

၂။ သမိုင်းအကျဉ်းချုပ်

ကမ္ဘာ့သမိုင်း

ကမ္ဘာ့အပြည်ပြည်ဆိုင်ရာ လှေလှော်အဖွဲ့ချုပ်ကို ပြင်သစ်နိုင်ငံ၊ ဆွစ်ဇာလန်နိုင်ငံ၊ ဘယ်ဂျီယံနိုင်ငံနှင့် Adriatica (ယခုအခါ အီတလီနိုင်ငံအစိတ်အပိုင်း)စသည့် နိုင်ငံအသီးသီးတို့မှ (FISA) The Federation International des Societes d' Aviron ဟူ၍ ပြင်သစ်ဘာသာဖြင့်သော်လည်းကောင်း၊ အင်္ဂလိပ်ဘာသာဖြင့် International Federation of Rowing Associations ဟူ၍ ၁၈၉၂ ခုနှစ်၊ ဇွန်လ (၂၅)ရက်နေ့တွင် အီတလီနိုင်ငံ Turin မြို့၌ စတင်ဖွဲ့စည်းတည်ထောင်ခဲ့သည်။ အပြည်ပြည်ဆိုင်ရာလှေ (Rowing) အားကစားနည်းမှာ အိုလံပစ်အားကစားလှုပ်ရှားမှုတွင် သက်တမ်းအရင့်ဆုံးအားကစားနည်းအဖြစ် မှတ်တမ်းတင်ခံခဲ့ရပါသည်။

FISA ၏ ပထမဦးဆုံးပွဲစဉ်ဖြစ်သည့် (European Rowing Championship)ကို ၁၈၉၃ ခုနှစ်တွင် စတင်ကျင်းပပြုလုပ်ခဲ့သည်။ နှစ်စဉ် World Rowing Championship အား ၁၉၆၂ ခုနှစ်တွင် ပြိုင်ပွဲစတင် မိတ်ဆက်ပြုလုပ်ခဲ့သည်။ ပထမဦးဆုံး Rowing အားကစားနည်း ပြိုင်ပွဲဖြစ်သည့် Modern Games ပွဲအား ၁၈၉၂ ခုနှစ်တွင် ကျင်းပပြုလုပ်ခဲ့ရာ ရာသီဥတုမကောင်းခြင်းကြောင့် ပြိုင်ပွဲရပ်နားခဲ့ရသည်။ ထို့နောက် ၁၉၀၀ ခုနှစ် အိုလံပစ်အားကစားပွဲတော်တွင် Rowing အားကစားနည်းကို ထည့်သွင်းယှဉ်ပြိုင်ခဲ့သည်။ ထို့အပြင် အာရှ (ARF)အရှေ့တောင်အာရှ (SEARF) တို့ကို ဖွဲ့စည်းတည်ထောင်ခဲ့သည်။

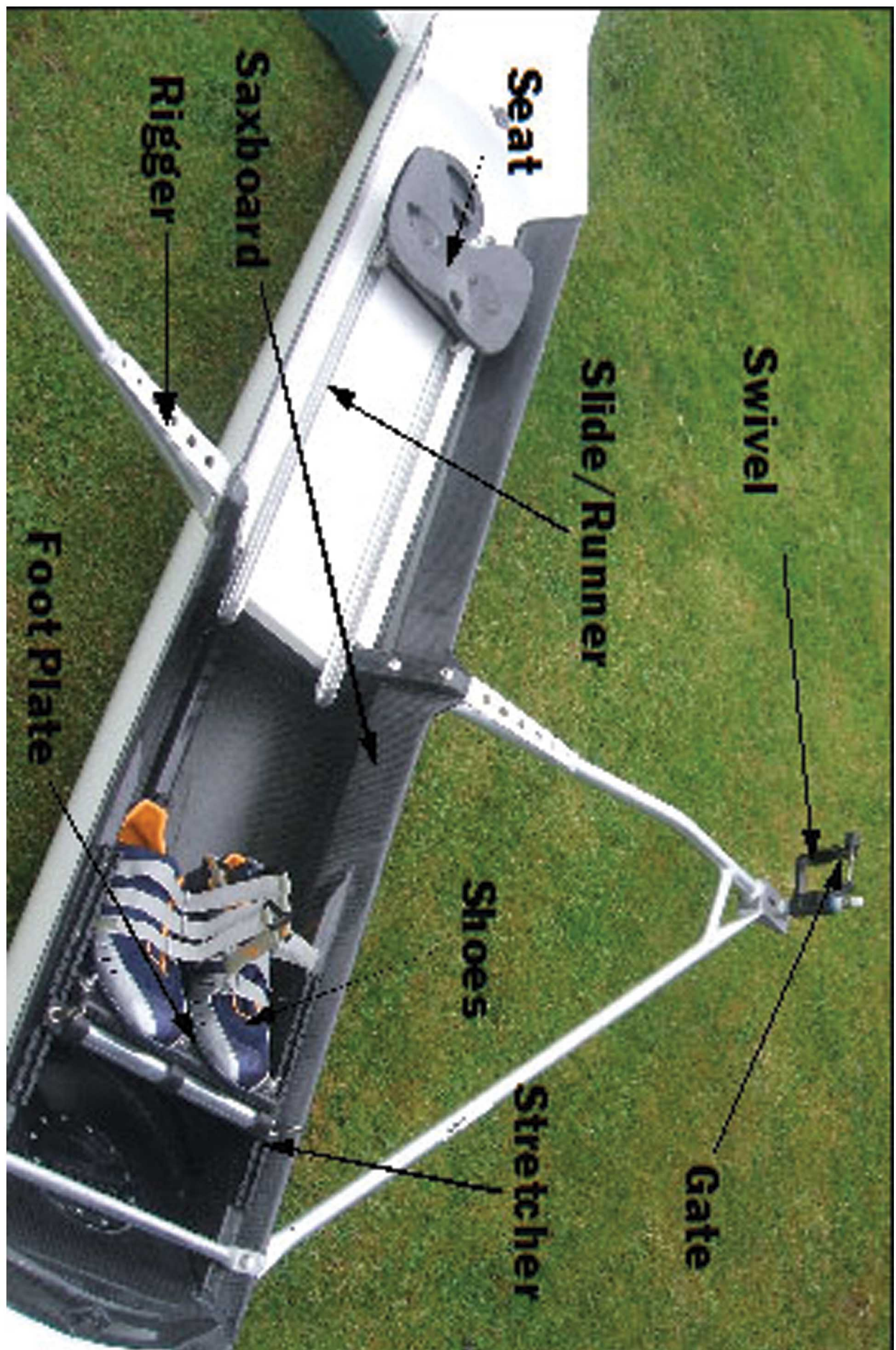
မြန်မာ့သမိုင်း

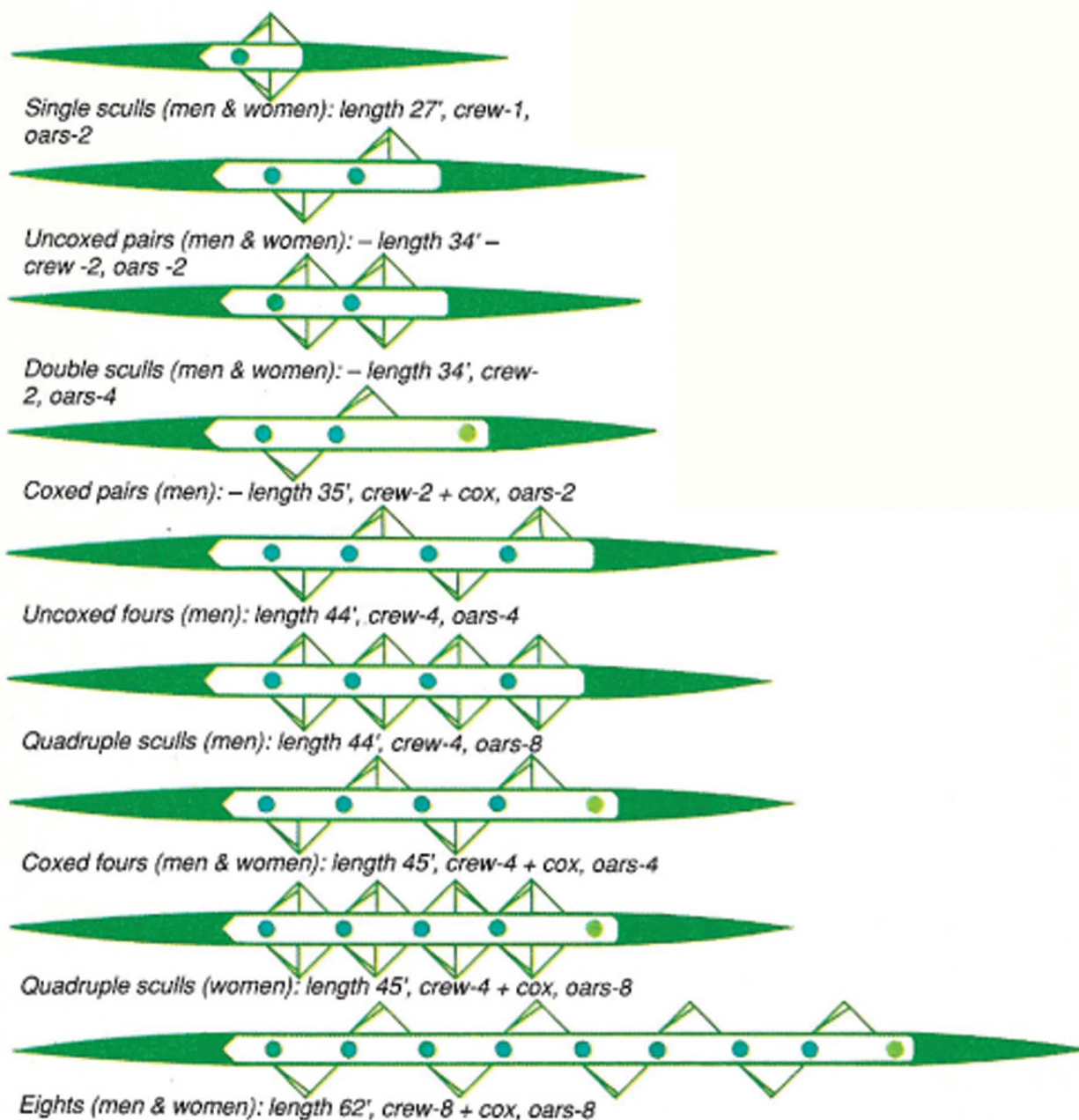
မြန်မာနိုင်ငံတွင် Rowing အားကစားနည်းကို ၁၉၂၃ ခုနှစ်တွင် ရောက်ရှိလာပြီး တက္ကသိုလ်ကျောင်းသား/သူများမှ စတင်လှော်ခတ်ကစားခဲ့ကြပြီးနောက် မြန်မာနိုင်ငံတပ်မတော်လှေလှော်ရွက်တိုက်အသင်း၊ ရေကျောင်းလူငယ်အသင်းများပေါ်ပေါက်၍ လှော်ခတ်ကစားခဲ့ကြပါသည်။

အပြည်ပြည်ဆိုင်ရာအားကစားနည်း ဝေါဟာရများ (Terminology)

1	Blade	တက်ရွက်
2	Shaft	တက်ရိုး
3	Leather & Button	သရေပတ်
4	Rowlock	ခပ်ကွင်း
5	Swivel	ခပ်ကွင်း
6	Pin	မဏ္ဍိုင်
7	Handle	လက်ကိုင်
8	Seats	ထိုင်ခုံ
9	Lock Gate	ခပ်ကွင်း ထိပ်ပိတ်
10	Rigger	ကိုင်းတံ
11	Foots Tretcher	ခြေကန်ပြားအနောက်မှအတန်း
12	Ribs	တံကူ
13	Foots Board	ခြေကန်ပြား
14	Keel Line	ဧရာတံ
15	Cox	ပဲ့ကိုင်း
16	Rudder	ပဲ့
17	Bow Side	မဘက်အခြမ်း
18	Stroke Side	စုံဘက်အခြမ်း
19	Bow	လှေဦးပိုင်း
20	Stern	ပဲ့ပိုင်း
21	Single Sculls	တစ်ယောက်လှော်လှေ (1X)
22	Double Sculls	နှစ်ယောက်လှော်လှေ (2X)
23	Quadruple Sculls	လေးယောက်လှော်လှေ (4X)
24	In-Together	ခြေနှစ်ဘက်သွင်း
25	Are You Ready	အသင့်ပြင်
26	Go/ Row	လှော်
27	Touch-Her-Rowing	ရေရှုပ်လှော်ခြင်း
28	Pontoon	လှေကပ်ရန် ဆိပ်ခံတံတား

29	Canoe	ကနူးလှေ
30	Kayak	ကနူးလှေ မျိုးကွဲ ဒူးထောက်လှော်လှေ
31	Neck	ကနူးတက်ရွက် အရင်းနေရာ
32	Joint	ကနူးတက်ရွက် အလယ်အဆက်
33	Aerobic (with Oxygen)	
34	Anaerobic (without Oxygen)	
35	Sculling Rowing	တစ်ဦးတက် နှစ်ချောင်းလှော်လှေများ
36	Sweep Rowing	တစ်ဦးတက် တစ်ချောင်းလှော်လှေများ
37	Pair With Coxswain	နှစ်တက် လှော်ပွဲကိုင်ပါလှေ
38	Pair Without Coxswain	နှစ်တက် လှော်ပွဲကိုင်မပါလှေ
39	Four With Coxswain	လေးတက် လှော်ပွဲကိုင်ပါလှေ
40	Four Without Coxswain	လေးတက် လှော်ပွဲကိုင်မပါလှေ
41	Eight With Coxswain	ရှစ်တက် လှော်ပွဲကိုင်ပါလှေ
42	Tub Four	လေးတက် လှော်ဝမ်းပြားလှေ
43	Clinker	နဘောကပ်လှေ
44	Shell	ဝမ်းလုံးလှေ
45	Square Position	တက်ရွက် မတ်ပုံစံ (၉၀ ဒီဂရီ)
46	Feather position	တက်ရွက် ပြားပုံစံ (၄၅၊၁၀၀ ဒီဂရီ)
47	Forward Position	ရှေ့ ဆုံးလာနေရာ
48	Back-Stop Position	နောက်ဆုံး လာနေရာ
49	Reach-Out	ရှေ့သို့ ယိုင်ခြင်း
50	Lean-Rack	နောက်သို့ ယိုင်ခြင်း
51	Flicking	တက်ရွက် ရေမှ နုတ်ခြင်း
52	Fixed-Tub	ကမ်းကပ် လှေတု
53	Crew	လှေလှော်အဖွဲ့ သား
54	Lateral Pressure	ဘေးသို့ တွန်းခြင်း
55	Get Ready	အသင့်ပြင်
56	Holds Across	လက်ခွကိုင်
57	One0-Foot-in	ခြေတဘက်သွင်း





Classes of Boat

The following classes of boat are recognised by FISA:

1. Single Sculls (1x)
2. Double Sculls (Sculls 2x)
3. Pair (2-)
4. Coxed Pair (2+)
5. Quadruple SSculls (4x)
6. Four (4-)
7. Coxed Four (4+)
8. Eight (8+)

World Championship Boat Classes

World Rowing Championships are held in the following events:

Men (M)	1x, 2x, 2-, 2+, 4x, 4-, 8+
Women (W)	1x, 2x, 2-, 4x, 4-, 8+
Lightweight Men (LM)	1x, 2x, 2-, 4x, 4-, 8+
Lightweight Women (LW)	1x, 2x, 4x
Under 23Men (BM)	1x, 2x, 2-, 4x, 4-, 4+, 8+
Under 23Women (BW)	1x, 2x, 2-, 4x, 4-, 8+
Under 23 Lightweight Men (BLM)	1x, 2x, 2-, 4x, 4-
Under 23 Lightweight Women (BLW)	1x, 2x, 4x,
Junior Men (JM)	1x, 2x, 2-, 4x, 4-, 4+, 8+
Junior Women (JW)	1x, 2x, 2-, 4x, 4-, 8+

Olympic Games Boat Classes

The programme at an Olympic regatta includes the following events:

Men (M)	1x, 2x, 2-, 4x, 4-, 8+
Women (W)	1x, 2x, 2-, 4x, 8+
Lightweight Men (LM)	2x, 4-
Lightweight Women (LW)	2x

Boat Classes at Wther Events

The events at Regional and Continental Championship regattas as well as multi-sport Games regattas shall be determined by the FISA Council after consultaion with the organisers and the Regional or Continental confederation, as appropriate.

၅။ ပြိုင်ပွဲစည်းမျဉ်းဥပဒေများ

Age Categories

The following age categories for rowers are recognised by FISA:

1. Juniors
2. Under 23
3. Seniors
4. Masters

Juniors

A rower may compete in a Junior rowing event until 31st of December of the year in which he reaches the age of 18.

Seniors and Under 23

A rower may compete in an Under 23 rowing event until 31st of December of the year in which he reaches the age of 22. Senior rowing events are open to rowers of all ages.

Additional Categories

In addition to the age categories, FISA recognises a lightweight category for Seniors and Under 23 as well as Para-Rowing category for seniors.

Innovations in Equipment

Innovations in equipment including, but not limited to, boats, oars, related equipment and clothing, must meet the following requirements before being used in the sports of rowing:

1. be commercially available to all competitors (patents may not exclude the use by a team or a competitor);
2. not significantly add to the cost of the sport;
3. not provide an advantage to some competitors over others or change the nature of the sport;
4. be safe and environmentally sound; and
5. be a positive development for the sport of rowing and maintain the principles, in particular those of fairness and equality, in the sport.

An innovation must be submitted to the FISA executive committee for evaluation.

If it is judged to meet the above conditions and is approved for use, it must be

readily available for all competitors by January 1st in order to be authorised for use in international Regattas that year. Crews with unapproved innovations shall not be allowed to compete.

The Executive Committee has the sole authority to decide all matters under this Rule including whether an innovation is significant, whether it is safe and environmentally sound and whether it is a positive development for the sport of rowing and maintains the principles of the sport.

Weight of Boats

All boats used at World Rowing Championship, World Rowing Cup, Olympic, Paralympic, Youth Olympic, relevant qualification regattas, Regional Games and Continental Championship regattas and all other International Regattas shall be of defined minimum weights.

1. Minimum boat weights are the following:

Designation	Boat type	Minimum Weight(kg)
1x	Single Sculls	14
2x	Double Sculls	27
2-	Pair	27
2+	Coxed Pair	32
4x	Quadruple Sculls	52
4-	Four	50
4+	Coxed Four	51
8+	Eight	96

2. Responsibility-It is solely the responsibility of the crew that their boat meets the required minimum weight.
3. Weight Scale- The weighing scales shall be provided by a FISA- approved manufacturer and shall indicate the weight of the boat to 0.1 kgs. The scales shall be connected to a printer so that a printed record of the boat weight is immediately available. At the beginning of each official training day and of each racing day, the scales shall be tested, using calibrated(gauged) weights, by a member of the Control Commission responsible for boat weighing.

4. Test weighing of boats-The weighing scale shall be available to the crews at least 24 hours before the first race of the regatta for test weighing of their boats. The scales shall be located on a horizontal base, inside a building or a tent to provide protection from the wind. The weighing area shall be easily accessible from the incoming pontoons and shall be exclusively reserved for the weighing of boats during the regatta.
5. Selection of Boats to be weighed- The person authorised by the President of the Jury shall make a random draw before the start of each racing session to select the boats which are to be weighed. He shall also have the right to include additional boats at any time before the finish of the race of the boat concerned if there is a suspicion that responsible person at the Control Commission.
6. Notification to Crews- A member of the Control Commission shall notify the crews of the selected boats as they leave the water after their races and they, or people appointed for that purpose, shall accompany each boat to the weighing scales. A selected crew is required to take its boat directly to the weighing scales when it is notified that the boat has been selected for weighing. Failure to do so may lead to the crew being penalised as if the boat had been underweight. Once the crew has been notified that the boat has been selected for weighing, no extra weight of any description can be added to the boat until the boat has been weighed.
7. Additional Items to be removed - Equipment which is not to be included in the weight of the boat shall be removed from the boat before weighing.

Coxswains

Coxswains are members of the crew. A women's crew may not therefore be steered by a man nor may a men's crew be steered by a woman except in races for Masters or if, in special circumstances, the Executive Committee permits otherwise. Age Categories shall also apply to coxswains, except in Masters events.

The minimum weight for a coxswain wearing the racing uniform is 55

Kilogrammes(kgs) for men's, Under 23 men's and Junior men's crews, and 50 kgs. for women's, Under 23 women's, Junior women's and mixed crews.

To make up this weight, a coxswain may carry a maximum of 10 kgs. dead weight

which shall be placed in the boat as close as possible to his person. No article of racing equipment shall be considered as part of this dead weight. At any time, before the race or until immediately after disembarkation, the Control Commission may require the weight of the dead weight to be checked. These provisions shall also apply to coxswains in lightweight races.

Weighing of Coxswains

Coxswains shall be weighed wearing only their racing uniform on tested scales not less than one hour and not more than two hours before their first race in each event in which they are competing on each day of the competition.

The weighing scales shall indicate the weight of the coxswain to 0.1 kgs.

The Control Commission may require on the occasion of the first weighing, or subsequently, the presentation of an official identity card with photograph.

Lightweights

A rower may compete in lightweight rowing events if he meets the following criteria:

1. A lightweight men's crew (excluding coxswain) shall have an average weight not exceeding 70 kgs. No individual lightweight male rower may weigh more than 72.5 kgs.
2. A lightweight male single sculler may not weigh more than 72.5 kgs.
3. A lightweight women's crew (excluding coxswain) shall have an average weight not exceeding 57 kgs. No individual lightweight male rower may weigh more than 59 kgs.

Length of the Course

1. International Regattas- The standard international racing distances shall be 2000 metres straight for men and women; in the categories Seniors and Under 23, lightweights and Juniors. For Masters (men, women and mixed crews) the course shall be 1000 metres straight.
2. World Rowing Championship regattas- The length of the standard World Championship course shall be 2,000 metres straight. The provisions of this Rule require the use of moveable starting installations in order that the bows of all boats of whatever class may be aligned on the same start line.

3. The length of the course and all intermediate distances shall be measured by an independent qualified surveyor and a certified plan shall be held by the organising committee. This plan shall be available for inspection by FISA at any time. For a World Rowing Championship, Olympic, Paralympic, Youth Olympic and relevant qualification regattas, FISA may request a further survey be carried out to standards specified in the latest edition of the "FISA Manual for Rowing Events".
4. The Executive Committee may grant exceptions to this rule where necessary for regattas in multi-sport competitions, Continental or other Championships where it is clearly demonstrated that a standard course is not reasonably achievable.
5. A non-standard course may be shorter (for example, sprints) or longer (for example, long distances, head of the river, etc.) than the standard course. It is not necessary that a non-standard course be straight.

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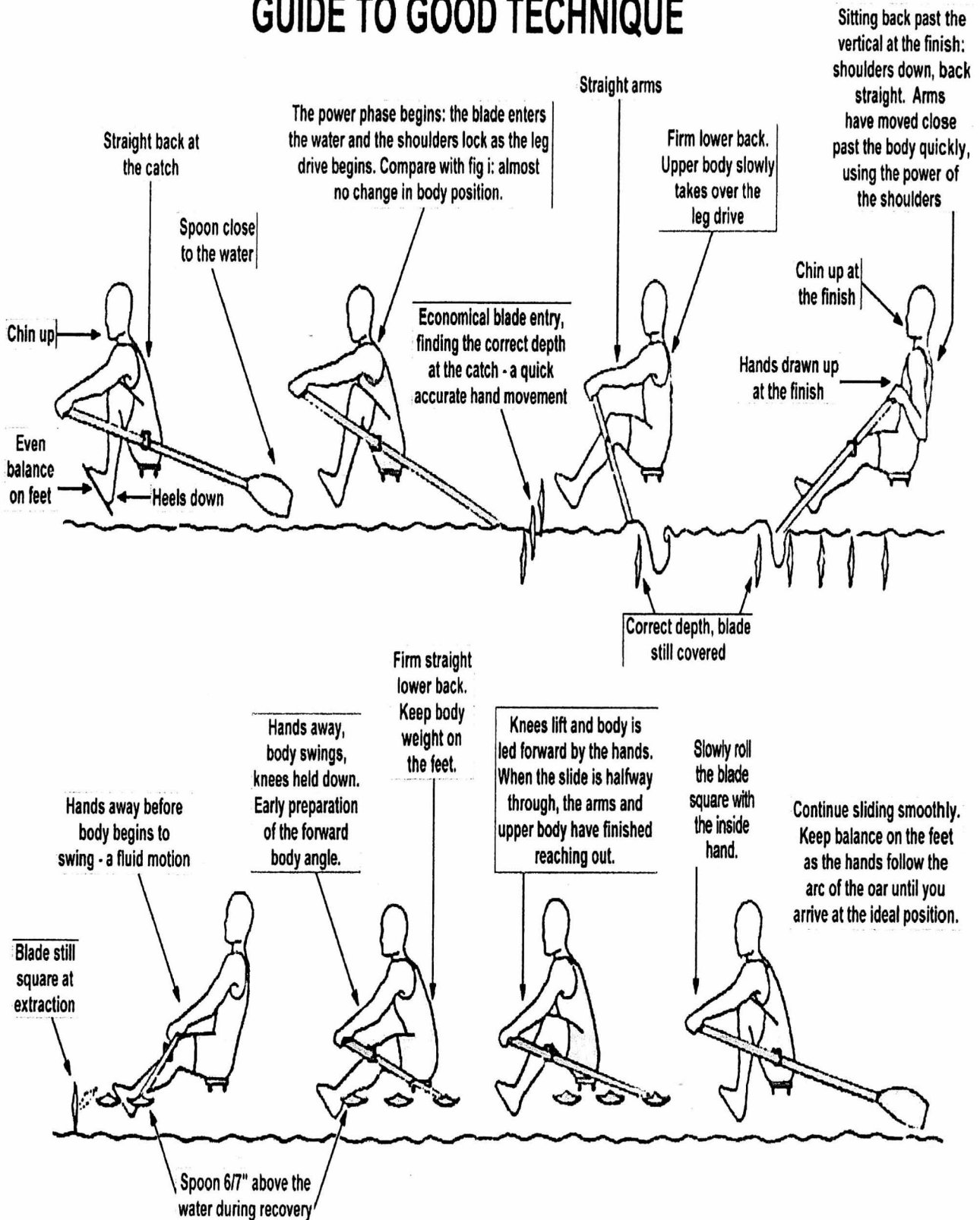
(A)

1. Introduction
2. Measuring Aids and Tools
3. Terminology
4. Adjustment of Boats and Equipment
5. The Angle, Height and Placement of the footstretcher
6. The Spread in Sculling and Sweep Rowing
7. The Height of the Swivel
8. The Placement of the Button on the Oar
9. The Pitch of the Blade
10. Basic Equipment Care
11. Maintenance
12. Simple Repairs of wooden material
13. Appendices

(B)

1. Physical Laws
2. Dynamics of Rowing
3. Mass + Movement = Force
4. Phases of the Stroke
5. Entry and first Half of the Drive
6. Finish of the Drive
7. Finish of the Release
8. First Half of the Recovery
9. Second Half of the Recovery
10. Summary

GUIDE TO GOOD TECHNIQUE



1.0 INTRODUCTION

Rowing is a sport that requires concerted motion between the athlete and the boat. To row effectively and to learn correct technique, it is clear that the boats and equipment must be properly adjusted and well maintained. The construction of modern boats offers the possibility of individualised rigging to allow the coach to take into account the anatomical and physiological aspects of each athlete.

In this course, the terminology of the principal parts of the boat and equipment will be presented. You will be introduced to the basic adjustments and the tools necessary to make the adjustments. Also, guidelines for the proper care and repair of the materials will be presented to assist in prolonging the life of the boat and equipment.

By the end of this course you will learn that the basic adjustments are easy to accomplish with the knowledge of the necessary measurements and a few simple tools. You, the coach, will then be able to provide the athletes with properly adjusted boats and equipment, which will allow the athletes to increase the benefits of training.

2.0 MEASURING AIDS AND TOOLS

It is necessary in the beginning to acquire a few simple measuring aids and tools to be able to make the adjustments on the boat and equipment. They are as follows:

- (1) a one-metre length of string,
- (2) a straight piece of wood, 1.5 metres in length,
- (3) a tape measure or measuring stick,
- (4) a screwdriver,
- (5) a set of wrenches (10mm, 11mm, 13mm, and 17mm),
- (6) a spirit level.

It is important to keep these measuring aids and tools together in a kit or tool box as this will ensure that time is not lost in searching for missing items.

3.0 TERMINOLOGY

The sport of rowing is divided into two distinct categories: sculling and sweep rowing.

Sculling events require each athlete to use two oars, which are pulled simultaneously and range from the single scull to the quadruple sculls. Sweep rowing events require each athlete to use one oar and range from boats containing as few as two athletes to as many as eight with coxswain.

There are three types of sculling boats: the single, the double and the quadruple. These have one, two and four athletes, respectively. There are five types of sweep rowing boats: the pair with coxswain, the pair without coxswain, the four with coxswain, the four without coxswain, and the eight with coxswain. The pairs, of course, have two athletes per boat.

Generally, the terminology used in naming the part of the boat and equipment and the points of adjustment for sculling and sweep rowing are identical. However, to ensure that this terminology is standardised, figures 1 to 3 present the basic terminology for the parts of the oar (figure 1),

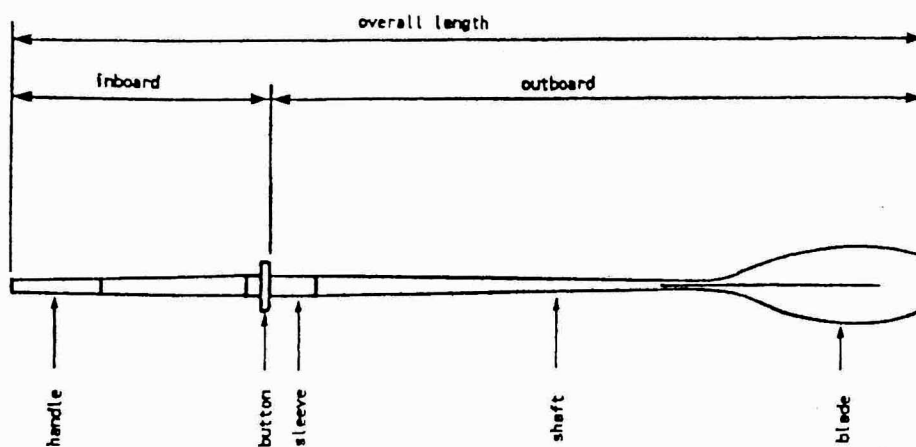


Figure 1 - Parts of the Oar

the parts and adjustment points of a sweep rowing boat (figure 2) and a sculling boat (figure 3).

The placement of the athlete in a boat, except in a single scull,

is generally designated by a numbering system that commences with the number one for the seat closest to the bow and continues to the number that corresponds to the seat position closest to the stern. The first and last seat positions may also be designated bow and stroke, respectively.

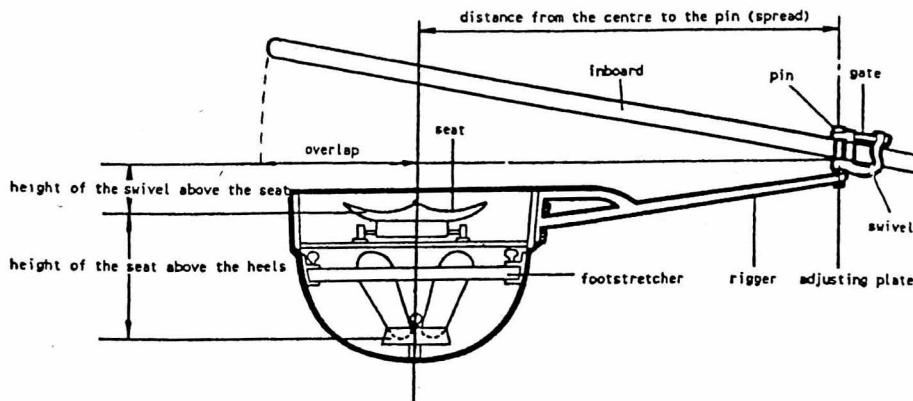


Figure 2 – Parts of a Sweep boat

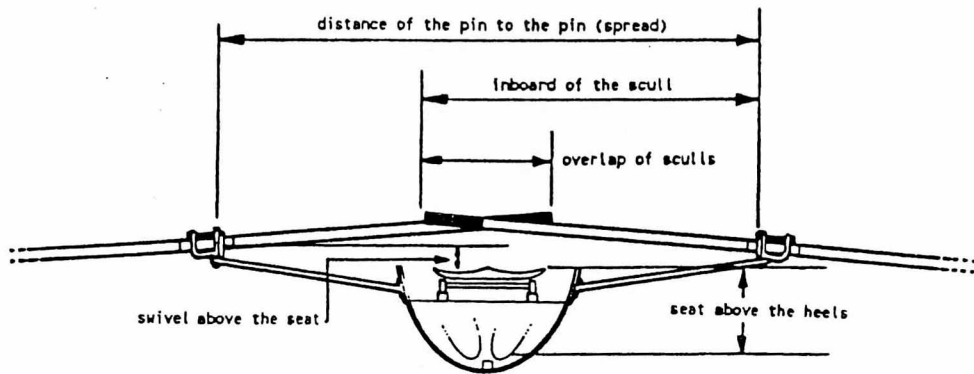


Figure 3 – Parts of a Sculling boat

The oars may be identified by seat placement and rowing side by the use of a numbering system (similar to the system for the placement of the athlete) and by the use of coloured tape or letter to designate the rowing side.

Generally, the letter "S" or red tapes identifies the stroke-side (the left side of the boat as viewed standing at the stern and facing the bow of the boat) and the letter "B" or green tape identifies the bow-side (the right side of the boat as views standing at the stern and facing the bow of the boat).

4.0 ADJUSTMENT OF BOATS AND EQUIPMENT

In the theory, the adjustments to the boats and equipment are the same for either type of boat, sculling or sweep. This section will present the information necessary to prepare a rowing boat.

4.1 *The Length and Placement of the Tracks*

The length of the tracks can vary from 65 cm, in the old boats, to 85 cm, in extreme cases. The normal length is between 70-75 cm. The tracks (see A in figure 4) are generally placed in a position that allows at least 65 cm between the extreme bow end of the tracks to a line that is perpendicular to the boat at the position of the working face of the swivel.

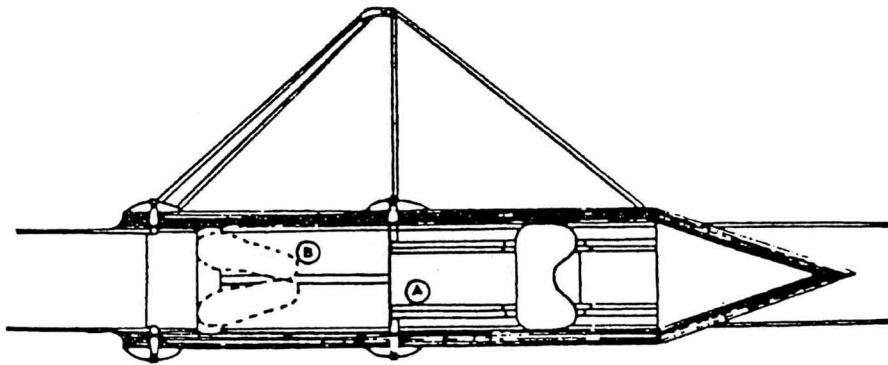


Figure 4 – Placement of the Tracks

4.2 *The Angle, Height and Placement of the Footstretcher*

Although in many boats the angle and height of the footstretcher is fixed by the boat builder, it is important to obtain a good position for the athlete which allows free and comfortable movement.

Therefore, in most new boats the angle and height of the footstretcher is adjustable.

It has been found that a good position for the angle of the footstretcher (see figure 5) is between 38-42 degrees. It has also been found that a good position for the height of the footstretcher (the vertical distance from the seat down to the heel of the footstretcher, see figures 2 and 3) is about 15 to 18 cm.

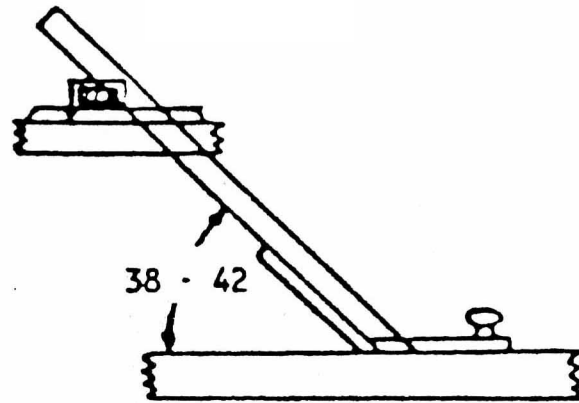


Figure 5 - Angle of the Footstretcher

The placement of the footstretcher is important because it controls the position of the oar at the entry and finish. Therefore, consideration must be given to the rowing technique utilised by the athlete and the athlete's position in relation to the working face of the swivel. Further, in all boats, the correct placement of the footstretcher must ensure a correct and uniform finish position.

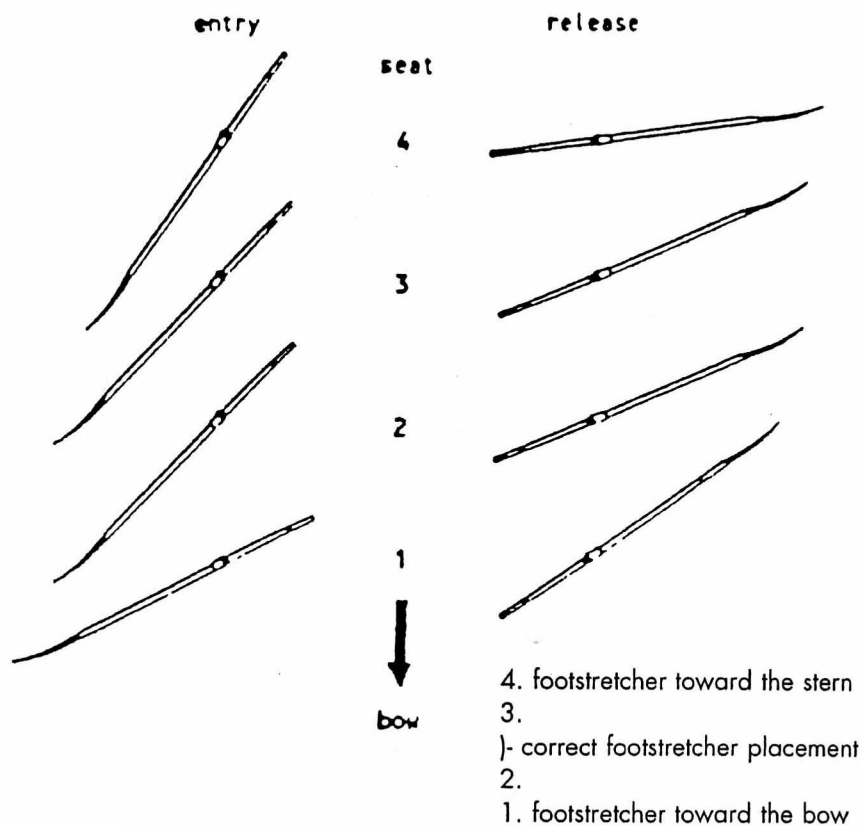


Figure 6 – Placement of the Footstretcher

The effect of the placement of the footstretcher is demonstrated in figure 6. The athlete in the top of the drawing has the footstretcher placed too close to the stern of the boat and the athlete in the bottom of the drawing has the footstretcher placed too close to the bow of the boat.

The athletes in the middle positions of the drawing have the footstretchers placed in the correct position.

4.3 The Spread in Sculling and Sweep Rowing

a) The Distance of Pin to Pin in Sculling.

In a sculling boat, the place of measurement of the spread is from the centre of the pin of one rigger to the centre of the pin of the rigger directly opposite. This distance is usually measured within the range of 156 to 160 cm (see figure 7). It should be noted that it is important to ensure that each pin has the same distance from the centre of the boat.

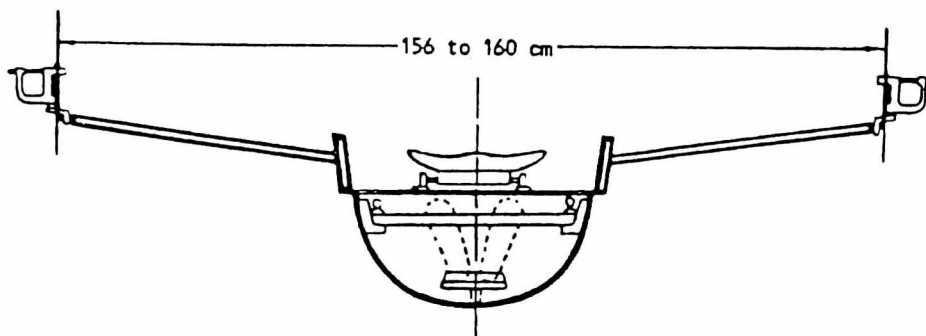


Fig. 7 - Measuring the Distance from Pin to Pin

b) The Distance of the Pin from the Centre in Sweep Rowing.

The place of measurement of the spread in a sweep rowing boat is different. The usual practice is to measure the distance of the pin from the centre of the boat on a line drawn perpendicular from the pin to a line extending lengthwise down the centre of the boat.

This distance varies from boat to boat because it is dependent upon the size and strength of the crew and the type of boat.

Use the following procedure to adjust the distance of the pin from the centre for each seat in a sweep rowing boat:

- 1) Measure the width of the boat at the point perpendicular to the pin (see 1 in figure 8).

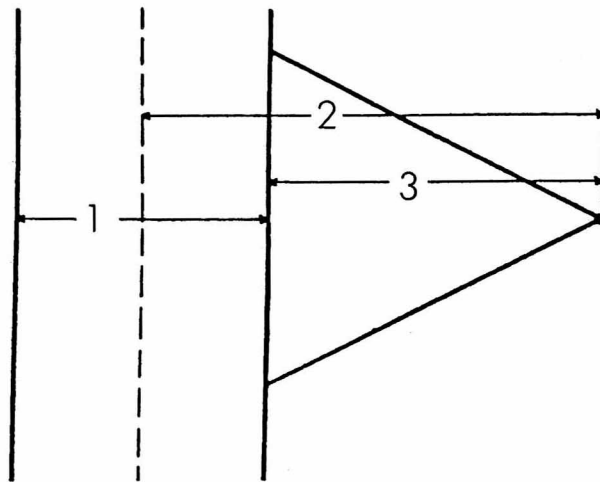


Fig. 8 - Measuring the distance from the Pin to the centre of the Boat

- (2) Determine the distance from the edge of the boat to the centre of the pin (see 2 in figure 8).
- (3) The result of measurement 2 added to one-half the measurement 1 will provide the measure of 3 (see figure 8) which is the distance of the pin from the centre of the boat. This distance is usually measured within the range of 80 to 90 cm (see figure 9).

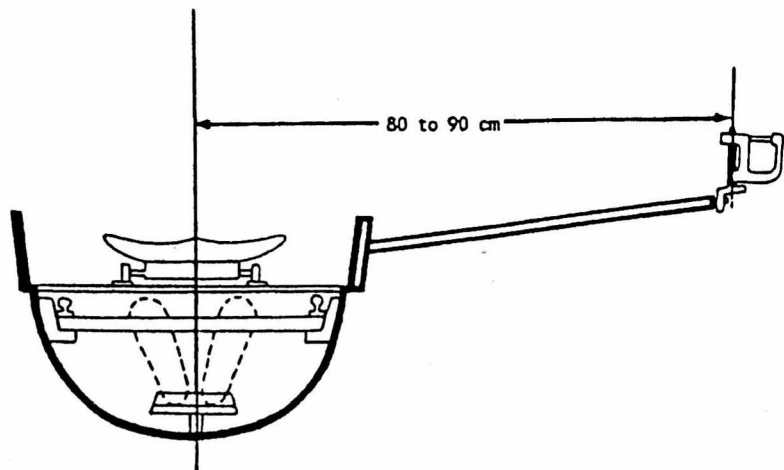


Figure 9 – A Standard Measurement

4.4 The Height of the Swivel

The height of the swivel is measured identically in sculling and sweep rowing boats. The height is the measure of the vertical distance from the lowest point of the seat to the top of the sill (of horizontal arm) of the swivel (see figure 2).

The height of the swivel is generally measured by placing the board across the gunwales of the boat at a position that is perpendicular to the swivel and measuring down to the seat and up to the swivel, both measured from the top face of the board. The point of the seat you choose to use should be consistently used from boat to boat as your reference point. These two measurements are then added to provide the measurement of height. The height is generally measured within the range of 16 to 18 cm.

The height may be changed by either raising or lowering the rigger on the boat or by altering the height of the swivel on the pin by the removal or addition of washers or spacers above or below the swivel.

4.5 The Placement of the Button on the Oar

The sculls and sweep oars are both divided into two parts by the position of the button. These two parts are termed the inboard and the outboard (see figure 1). The position of the button may be changed simply by loosening the nuts and bolts that secure the button to the oar, moving the button either towards or away from the blade, and tightening the nuts and bolts. Although it is important to have the correct outboard distance, the measurement for the correct position of the button is generally from the end of the handle or grip to the face of the button nearest the blade, the inboard distance.

The inboard distance is usually measured within the range of 85 to 90 cm for sculling oars and 110 to 118 cm for sweep oars, depending on the overall length of the sculls or sweep oars.

4.6 The Pitch of the Blade

This section will explain the measurement and adjustment of the pitch of the blade. The pitch of the blade is a measure in degrees of the inclination of the blade towards the stern of the boat during the drive phase of the stroke cycle.

It is important, in the beginning, to level the boat, both across the width of the boat and along the length of the boat (see figure 10).

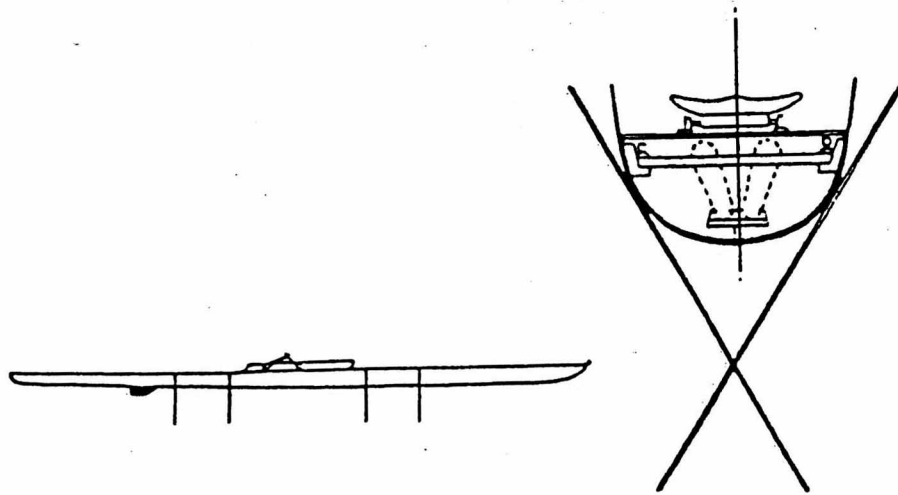


Fig. 10 - Level of the Boat

Next, it is necessary to check the angle of the pin. The pin should be vertical in all planes: outward and inward (the lateral angle) and the forward and backward (the stern angle).

Although the pin may be inclined outward (and should never be inclined inward), it has been determined, for the purposes of this course, that the lateral angle be 0 degrees. This position will maintain the same pitch of the blade from the entry to the finish positions of the stroke cycle. It will be explained in the Level II course of the FISA CDP that experienced athletes should use an outward lateral pitch of about 1 to 2 degrees. The purpose of this adjustment and the procedure to make the adjustment will also be explained in that course.

As the stern angle of the pin (the forward and backward inclination) should be 0 degrees, the pitch of the blade is determined

by the sum of the angle of the working face of the swivel and the angle of the flat back of the shaft or working face of the oar.

Generally, the working face of the swivel has a forward angle of 4 degrees while the working face of the oar has a forward angle of 0 to 4 degrees. Depending on the choice of oars, this would result in a pitch of blade between 4 and 8 degrees.

It is recommended that the pitch of the blade be about 8 degrees for novices or beginners. As the athlete improves in technical proficiency, the pitch of the blade may be decreased. The amount of the decrease is also dependent upon the event or type of boat. Further information on decreasing the pitch of the blade will be presented in Level II of the FISA CDP.

Next, it is necessary to measure the pitch of the blade.
To measure the pitch of the blade:

- (1) Place the oar in the swivel and have an assistant firmly hold the flat back of the shaft or working face of the oar at the button against the flat or working face of the swivel.
- (2) Place the oar perpendicular to the boat and hold it at a level comparable to its depth in the water.
- (3) Place a weighted string over the top of the blade, at a point 5 cm from the tip of the blade and allow it to hang in front of the blade until stable.
- (4) Measure the horizontal distance between the bottom edge of the blade and the hanging string (see figure 11).
- (5) Measure the width of the blade at the point 5 cm from its tip.
- (6) With these two measurements, refer to the chart shown in Appendix B to determine the pitch of the blade.

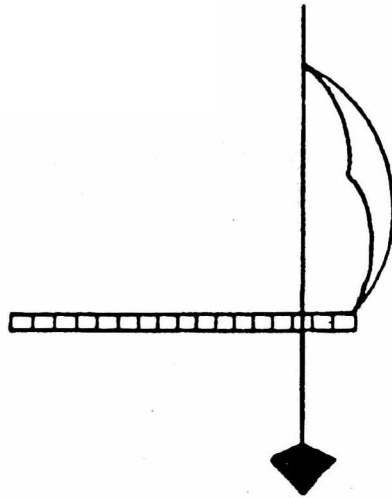


Figure 11- Measuring Pitch of the Blade

The desired pitch of the blade may be obtained by a simple adjustment of the equipment. Generally, this adjustment is made by either changing a plate on the face of the swivel or by loosening the locking devices on the swivel assembly and making the appropriate adjustment. In regard to the latter adjustment, it is preferable that the adjustment not alters the vertical position of the pin. With modern swivels; inserts with different degrees can be changed to adjust the inclination.

4.7 Summary

This section has provided you with the basic knowledge of rigging the boat and its equipment. The standard procedure presented in Appendix A provides a convenient checklist for the preparation and adjustment of the boat and equipment.

5.0 BASIC EQUIPMENT CARE

Proper care of the equipment is extremely important if the equipment is to function properly over a number of years. As the coach, your attitude towards the care of the equipment is reflected by the athletes. A talk to the athletes at the beginning of the year and intermittent discipline during the year can ensure that the athletes treat the equipment with respect. Besides, proper care of the equipment is the best preventative medicine available to prevent breakage in the race.

5.1 Maintenance

The boats and oars should be cleansed with water after every training session. Salt water and chemical in the lakes, rivers and bays can corrode the materials of the boat. Proper cleansing with fresh water can retard this deterioration. Tracks, seat wheels, and swivel pins should be cleansed and lubricated at least once a week during your training season.

It should be noted that the common practice of adding grease of petroleum jelly to the swivel, to allow the oar to be turned easier, may allow sand and other particles to accumulate causing damage to the swivel and oar. Therefore, the grease or jelly should be removed and replaced regularly.

The following is a list of possible trouble areas that should be examined and corrected prior to the problem becoming more serious and causing further damage to the boat and its equipment.

Possible Trouble Areas:

1. Worn swivel.
2. Loose fitting rigger components.
3. Loose nuts and securing devices.
4. Badly worn buttons or sleeves on the oar.
5. Oar too loose or too tight in the swivel.
6. Badly worn tracks
7. Badly worn seat wheels and axles.

5.2 Simple Repairs of wooden material

Even with the best preventative medicine there will still be equipment wear and deterioration. When breakage occurs, it will most likely occur during a training session on the water. The coach should be prepared with a toolbox containing the appropriate spare parts: swivels, pins, buttons, nuts, bolts and screws. These parts should be in the same kit with your rigging tools.

If there is an accident during training, such as colliding with floating debris or another boat, you can minimise the potential damage with some simple first aid. First, retrieve any shattered or splintered parts from the water to use later in the repair. Second, clean and dry the area around the crack, if not severely damaged. Third, cover the crack with some waterproofing tape. This will minimise the contact of the wood with the water and, thereby, reduce decay. However, if major damage occurs, head directly for land and get the boat out of the water to minimise exposure to the water.

After training, the crack should be properly repaired. The boat-builder can recommend the best glue to use for repair. The glue is placed on both sides of the crack and the two sides are pressed together until the glue is dry. The repaired area is then covered with varnish to provide waterproofing protection.

The same procedure is also necessary for wooden oars. Any scratches or punctures should be dried, sanded and varnished. The coach should be prepared for all this maintenance because good care of the material is required to preserve the basic elements of his passion: the boats and the oars.

For more information about repairs and maintenance, as well repair of composite boats, oars and sculls, see "Guide for Maintenance and Repair of Rowing Equipment", produced by FISA Material Commission in 1999.

6.0 APPENDICES

6.1 Appendix A

Standard Procedure for the Preparation and Adjustment of the Boat and Equipment

1. Place the boat on suitable supporting structures in an open working area.
2. Clean the boat and its equipment.
3. Check all moving parts on the boat.
4. Check and secure the rigger bolts.
5. Check and secure the position of the tracks.
6. If the angle and the height of the footstretchers are adjustable, make the appropriate adjustments.
7. Set the distance of the pin to pin or the pin from the centre of the boat and mark the position with a marker or tape.
8. Set the desired height of the swivel
9. Set the inboard or outboard on the oar.
10. Level the boat lengthwise and sideways
11. Place and hold the oar firmly in the swivel and perpendicular to the boat. With the blade at the correct height, set the pitch of the blade.
12. Re-check the height of the swivel.
13. Check the locking devices on the swivel.
14. Check that the swivel swings freely.

15. Check that all nuts and locking devices on the rigger are secure.
16. When the boat has been placed on the water, check that the footstretchers are properly set to ensure a correct and uniform finish position.

6.2 Appendix B

Table for Measuring the Pitch of the Blade:

Blade:	Degrees:				
cm	4	5	6	7	8
13	9.1	11.3	13.6	15.8	18.2
14	9.8	12.2	14.6	17.1	19.6
15	10.5	13.0	15.7	18.3	21.0
16	11.2	13.9	16.8	19.5	22.4
17	11.9	14.8	17.8	20.7	23.7
18	12.6	15.6	18.8	21.9	25.0
19	13.3	16.5	19.9	23.2	26.5
20	14.0	17.4	20.9	24.3	28.0
21	14.7	18.3	21.9	25.5	29.5
22	15.4	19.2	22.9	26.7	31.0
23	16.1	20.1	23.9	27.9	32.5

6.3 Appendix C

Table of Recommended Measurements

Club level - Macon blade - all measurements in cm.

Sculling:	Spread:	Outboard	Inboard	Length	Overlap
Men	158-160	212-210	86-88	298	18-22
Women	156-158	211-209	85-87	296	18-22

Club level - "Big Blade" - all measurements in cm.

Men	158-160	204-202	86-88	290	18-22
Women	156-158	200-202	86-88	288	18-22

Sweep Rowing:

Club level - Macon blade - all measurements in cm.

Boat:	Spread:	Outboard:	Inboard:	Length:	Overlap:
Men:					
2-	87	265	117	382	30
2+	88	264	118	382	30
4-	85	267	115	382	30
4+	86	266	116	382	30
8+	84	268	114	382	30
Women:					
2-	86	264	116	380	30
4-	85	265	115	380	30
8+	84	266	114	380	30

Club level - "Big Blade" - all measurements in cm.

Men:					
2-	87	257	117	374	30
2+	88	256	118	374	30
4-	85	259	115	374	30
4+	86	258	116	374	30
8+	84	260	114	374	30
Women:					
2-	86	256	116	372	30
4-	85	257	115	372	30
8+	84	258	114	372	30

1.0 INTRODUCTION

An athlete's technical proficiency, combined with a good physical capacity, can greatly enhance the level of his performance. Although the role of technique is common to every sport, rowing must be considered a sport that requires considerable technical proficiency to achieve a high level of performance.

Many different factors are combined in rowing, but only if we understand and master the technical factors will we be able to realize the complete benefit from training.

Although the technique of sculling and sweep rowing is essentially identical, the symmetrical movement of sculling is recommended for beginners. Therefore, the Basic Rowing Technique section of the FISA Coaching Development Program Course presents a basic description of sculling technique.

There are many possibilities for defining a particular technique. The system presented is one used by many countries around the world.

2.0 WHY TECHNIQUE?

It is of little value to develop strength, endurance and other physiological capabilities if these qualities cannot be used to increase the speed of the boat. As stated in the introduction, a benefit from training that increases the speed of the boat is realized when the athlete understands and practices an effective rowing technique.

3.0 PHYSICAL LAWS

When analysing rowing, we observe that the movement of the athlete and the boat are based mainly on physical laws that are the foundation for any discussion about rowing technique. The goal in rowing is to have the athlete, the moving power, propel the boat through the water.

In other types of boats the moving power can be a sail or a motor. Continuously turning a propeller or filling a sail provides the power. In rowing, the moving power is determined by the physical capacity of the athlete and the athlete's level of technical proficiency.

In rowing boats, the propulsive force is supplied intermittently because the oar is both in the water, with force being applied, and out of the water, with no force being applied. During the stroke cycle, the athlete is moving forward and backward on the sliding seat creating positive and negative force.

The positive force causes the boat to advance forward and the negative force causes this advancement to be hindered (figure 1). This fact compels us to concentrate our efforts to increase the influence of the positive force and to limit, wherever possible, the influence of the negative force.

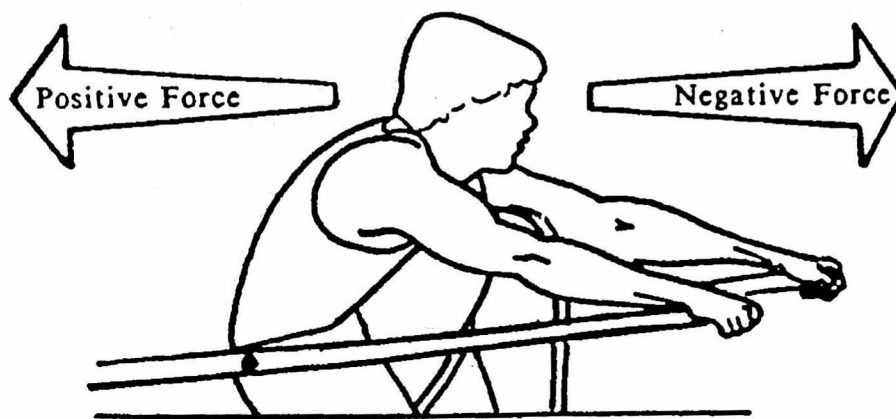


Figure 1 – The Directional Forces of Rowing

4.0 DYNAMICS OF ROWING

To understand how these forces are working, we can study diagram 1 to examine the velocity changes of a competition boat during the stroke cycle. These curves are the result of a study conducted by Wenzel Joesten of Berlin who analysed a film of the movement of the boat and the athlete's technique.

- (1) Velocity of the Boat (curve a)
- (2) Acceleration of the Boat (curve b)
- (3) Bow and Stern Pitching (curve c)

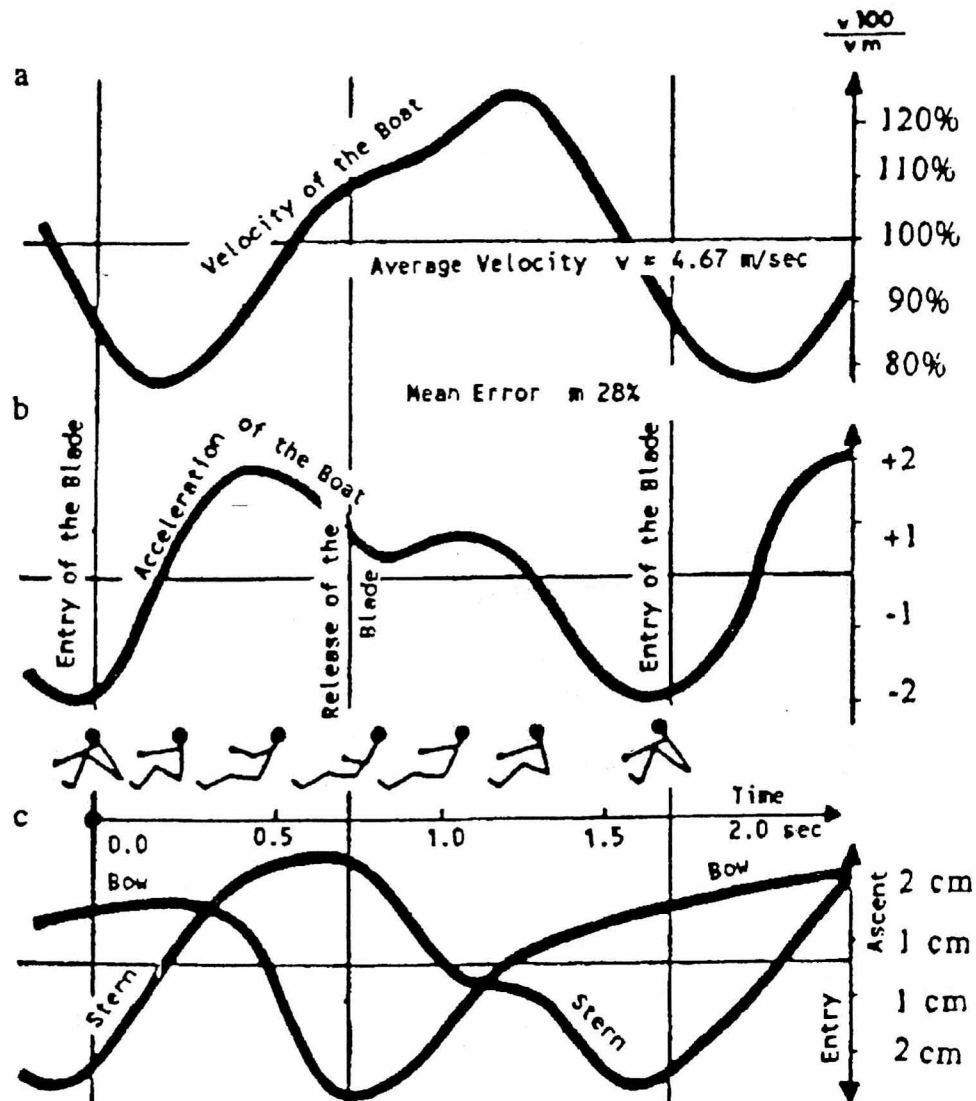


Diagram 1 - Analysis of a Competition Rowing Boat

The curve of velocity in the diagram (curve a) is the most interesting for it demonstrates the velocity variation of the boat during one stroke in relation to the average velocity. We can use this curve to analyse the technique of a good or a bad crew. A good crew has less variation from the average velocity while the characteristic of the curve does not vary.

The curve of acceleration (curve b) shows the acceleration of the boat. The boat attains the greatest acceleration during the drive and the least acceleration during the recovery. The stick figures located below curve b demonstrate the position of the athlete during the stroke cycle and in relation to time in seconds. The curve of pitching (curve c) in the diagram demonstrates pitching, the longitudinal oscillation of the boat. There are two curves, one indicates the bow movement and the other shows the stern movement.

5.0 MASS + MOVEMENT = FORCE

Our analysis will now be focused on curve a, the curve of the velocity variation, and on the stick figures of the athlete during the stroke cycle as they both appear in diagram 1. As you can observe in the diagram, the maximum velocity is achieved immediately after the extraction of the oar from the water and the minimum velocity immediately after the oar has entered the water. To explain the observations of maximum and minimum velocity, we must examine the movement of the athlete from the extraction of the oar to the entry of the oar in the stroke cycle. During this period the body weight of the athlete moves from the bow to the stern (figure 2). For example, in a men's eight-oared shell with an average weight of 85 kilograms per athlete, there are 680 kilograms of mass in movement.

If we now consider the formula $\text{MASS} + \text{MOVEMENT} = \text{FORCE}$, the question must arise: Where does this force go?

When the new drive starts, the mass in movement towards the stern has to stop and change direction and, at this moment, a large quantity of force is produced which opposes the velocity of the boat. This negative force is transmitted to the boat by the foot stretcher (See A in figure 2). In the release, the opposite occurs. The body mass is inclined towards the bow of the boat and this allows a free movement of the boat with a minimum of resistance.

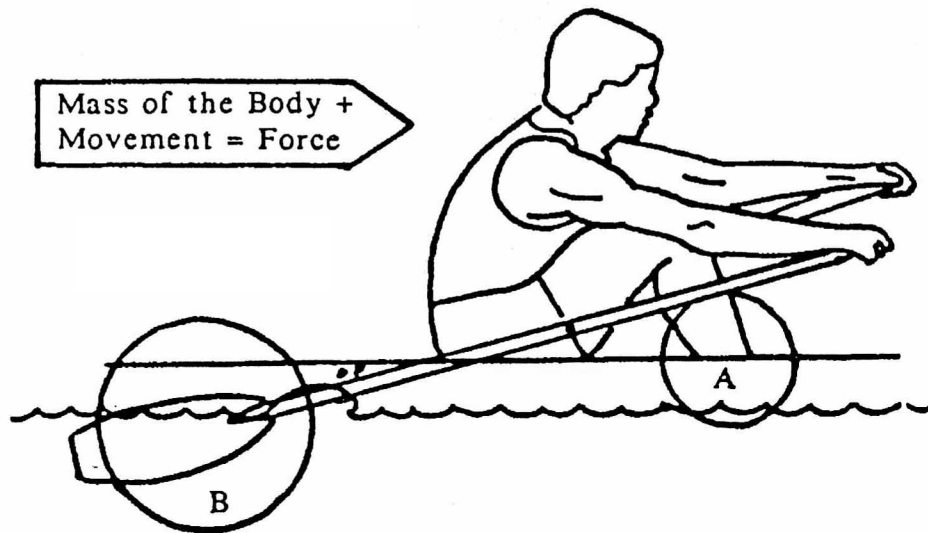


Figure 2 – Points of Contact

The only way to reduce the influence of the negative force is with a proper entry of the oar to the water (See B in figure 2).

Remember, one of the purposes of good technique is to limit the effect of the negative forces. Here we can clearly observe the difference between good and bad crews. It is not an exaggeration to state that the most important point of the stroke is the entry. With a direct entry (the oar must enter the water before all the force is pushing on the foot stretcher), we can reduce the influence of the negative force by transferring that force to the blade.

However well the entry is performed, there will always be some negative force and we will always have the lowest velocity immediately after the entry. Our objective in improving technique will be to reduce the variation in velocity.

This effect of interaction between negative and positive force is repeated between 220 and 250 times within the 2000 meter race distance. A small loss of velocity during each stroke will result in the boat having a lower average velocity and covering less distance per stroke. For example, a reduction of 5 cm per stroke in distance travelled multiplied by the number of strokes in a race, results in a loss of about 12.5 meters over 2000 meters.

6.0 PHASES OF THE STROKE

We will now examine, one by one, the phases of the stroke cycle and provide technical explanations based on the effectiveness of the various movement possibilities. There are various possibilities for technique; the one we are presenting is a clarification of the movements that is relatively easy to understand.

6.1 Preparation

It is important that the athlete utilizes his total height in a natural position and that he does not push his shoulders ahead too far assuming an unnaturally forced position. The angle of the body (approximately 45 degrees) allows the adequate use of the slide and is ideal for the transmission of the leg force to the stroke (figure 3).

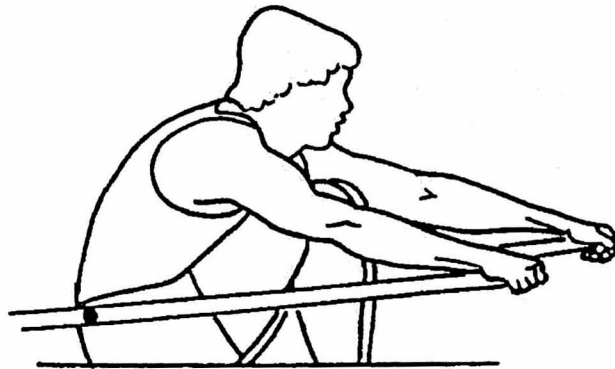


Figure 3 - Preparation

6.2 Entry and First Half of the Drive

During the entry the body weight is transmitted to the footstretcher using the force of the legs; this is especially noticeable in this first phase of the stroke. At the same time, the athlete is actively utilizing the other body muscles to produce efficient work in the water (figure 4).

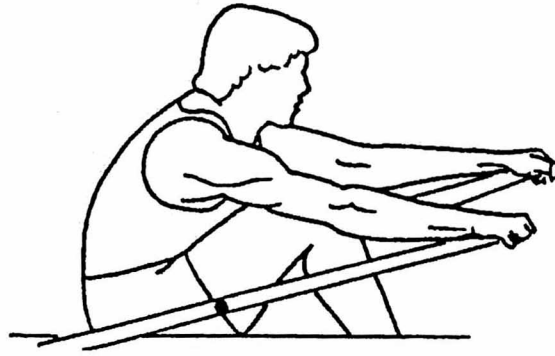


Figure 4 - The entry and First Half of the drive

6.3 Finish of the Drive

In relation to the muscular force, the first half of the drive is relying primarily on the legs. Further in the drive, the back muscles enter into action and, towards the end, the shoulders and the arms.

It is important that the body weight is utilized at all times and that the work is transmitted to the oars (figure 5).

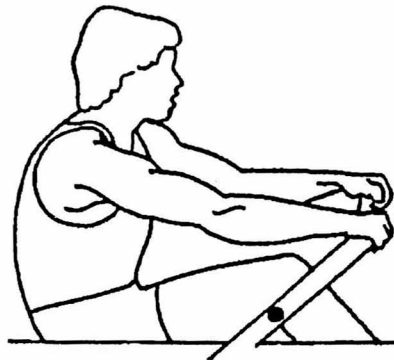


Figure 5 - Finish of the Drive

6.4 Finish and Release

As described for figure 5, the shoulders and the arms close the drive. During this part of the stroke it is important to always keep the body weight behind the oars to achieve the maximum effect

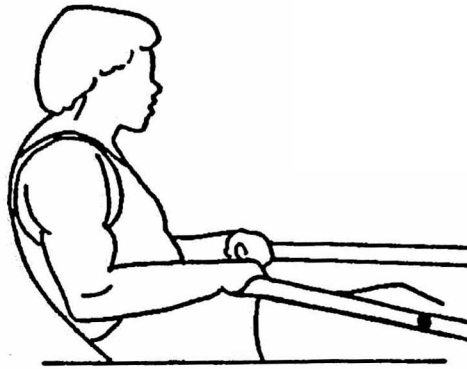


Figure 6 - Finish and Release

6.5 First Half of the Recovery

In the recovery, it is necessary to think that the hands are directing the movement by quickly and fluidly pushing the oars away from the body after the release.

The movement that follows starts when the arms are fully extended (figure 7).

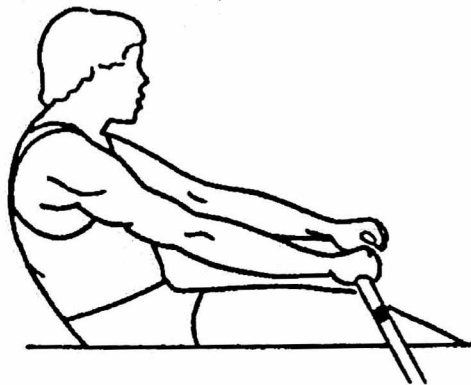


Figure 7 - First Half of the Recovery

6.6 Second Half of the Recovery

While the hands continue to advance, the upper body starts fluidly to lean forward until it reaches the correct position of the entry (45 degrees). When the arms are extended and the upper body is in the entry position, the athlete starts moving the seat forward to initiate the new stroke (figure 8).

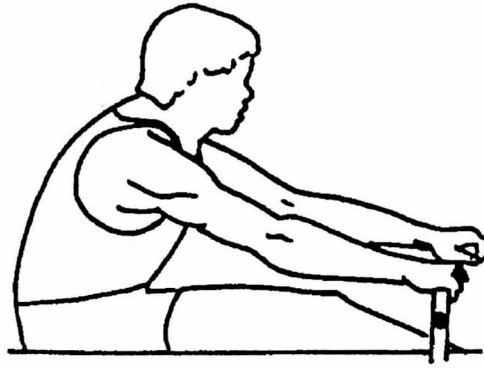


Figure 8 - Second Half of the Recovery

It should be noted that, in the sculling movement, the FISA Coaching Development Program recommends the adoption of a standard hand position with the left hand in front of the right hand during the drive and recovery.

7.0 SUMMARY

This analysis is technical and, in practice, all movements have to follow each other in a fluid, continuous cycle. It is extremely important that the upper body is properly prepared for the next stroke before the seat begins to move forward.

As stated in the introduction, the technique of sculling and sweep rowing is essentially identical, though the asymmetrical movement of sweep rowing does require an adaptation of the body to the movement of one oar. This adaptation will be discussed in Levels II and III of the FISA Coaching Development Program Course.

၇။ လေ့ကျင့်ရေးစနစ်များနှင့်နည်းလမ်းများ (Training Methods and Means)

1. Basic Principles of Training
2. Active Participation
3. All-Around Development
4. Specialization
5. Individualization
6. Variety
7. Progressiveness of Training
8. Systematization

1.0 INTRODUCTION

The role of the coach in the development of athletic potential is very interesting and challenging. It is also a very demanding role because it requires knowledge of all aspects of the athlete's life and the requirements of the sport. With this information, you, as the coach, are in a position to prepare a training program that will assist the athlete to achieve his or her training objectives. The training program will provide the format that will guide the athlete through the proper sequence of development throughout his or her athletic career.

The FISA Coaching Development Program provides information in this course on the basic principles of training, the concept of periodization and the development of a training program. This course is intended to provide you with the ability to design and implement simple training programs. Courses to be offered in the FISA CDP Levels II and III will provide more specific information, particularly in regard to the integration of the principal components in the development of athletic potential - the physical, technical and psychological components.

2.0 BASIC PRINCIPLES OF TRAINING

Basic training methodology has its own principles, which are based on scientific investigations. These investigations provide guidelines which systematically direct the whole process of training and are known as the principles of training.

2.1 *Active Participation*

The coach and athlete should be active participants in a joint effort to design and implement a training program. This principle is more important with experienced athletes than with beginners since beginners do not possess the knowledge and are subject to the direct control and guidance of the coach. The coach and athlete should develop training objectives and work together in the development of short and long term training programs. Experienced athletes may be encouraged to develop their own program with the assistance of their coaches to ensure the quality of the program.

The coach and athlete should establish tests and standards to be met periodically during the training season in order to monitor and control the effectiveness of the program. This will provide information to assist in the modification of the program during the training season and from season to season.

This active participation will provide a motivating force to enhance the commitment of the athlete and encourage the pursuit of excellence in training.

2.2 All-Around Development

All-around physical preparation is an essential part in the development of athletes. In fact, the establishment of a broad base of physical development should be considered a prerequisite for specialization in any sport. This is particularly important for youth and beginners because it is necessary to build a large base of physical fitness and skill to prepare the athlete for the increasing demands of the rowing specific training that will occur as the athlete develops.

Although the developing athlete will always maintain an all-around physical preparation program, rowing specific training will become more important both during the training season and from season to season throughout the athlete's career.

2.3 Specialization

During the athlete's career, he or she trains with the purpose of specializing in rowing. This specialized training for rowing is necessary given the high level of competition in sport today. This applies to all aspects of training and results in the amount of special rowing exercises being progressively and constantly increased.

Although specialization is a complex process, these special exercises may be divided into two groups. The first group comprises exercises that are similar to the sequence of the movement requirements of the sport (for example, utilization of the rowing ergometer or on the water technical exercises). The second group comprises exercises that represent partial movements of

the whole sequence of movements. These exercises activate single or multiple muscle groups in a way similar to the movement requirements of the sport (for example, utilization of a strength training program).

Therefore, the development of training programs will present the interesting challenge of properly utilizing exercises for both all-around development and sport specialization while giving consideration to short and long term athletic development.

2.4 Individualization

It is necessary to individualize training to enhance the prospects for reaching personal training objectives because of variations in each athlete's ability, potential, characteristics of learning and the specific requirements of rowing.

These variations will result in different individual capacities and, therefore, a training program for one athlete may not provide the proper development for another athlete.

This realization is particularly important in the event that a programme that has been designed for a senior or experienced athlete is utilized in training a junior or beginning athlete.

The sport of rowing with events for individuals and crews offers the challenge of developing training programs those are both individual and crew specific with consideration also being given to short and long term objectives. This ability is the real art of coaching and is developed after years of practice.

2.5 Variety

The utilization of a variety of physical activities provides two benefits. One is physical; the other is psychological.

A variety of physical activities, particularly during the early part of the training season, increases the all-around physical development of the athlete and, thereby, improves the peak performance capabilities that may be achieved with rowing specific training.

The increasing demands of rowing specific training, which necessitates a high volume of training and the utilization of repetitive special exercises, may result in the athlete becoming stale and suffering mental fatigue.

Therefore, it is important for the coach to be creative by drawing upon a repertoire of variations in training in order to maintain the athlete's interest and motivation to achieve short and long term performance objectives.

2.6 Progressiveness of Training

The improvement of physical performance comes with the adaptation of the human body to a certain quality and quantity of work. After the athlete's body has adapted to the given work, no further improvement can be expected unless an increased training load is used to force the body to a further adoption and, therefore, to a further improvement of physical performance.

Essentially, the training program must provide an adequate amount of work to cause the athlete to become fatigued. After the athlete has had an opportunity to recover and adept, and is thus prepared for an increase in work, the training program must systematically increase the amount of work. This will result in higher levels of adaptation and improved performance capabilities.

2.7 Systematization

In the preparation of the training programs, it is necessary to develop a systematic plan. This plan should be based on scientific and training principles and be arranged methodically in a form that organizes the training of the athlete and ensures the proper regularity of training.

The development of a systematic plan will improve the quality of training because the plan would provide a format in which the athlete and coach could test, monitor and control performance capabilities. A systematic plan will also provide a model to be reviewed and revised for the next training season and throughout the athlete's career.

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(Tactical Skill & Training)

The Program is divided into 5 periods as follows:

- Period 1. Preparation period 1: October - January*
- Period 2. Preparation period 2: January - February*
- Period 3. Pre-competition period: March - April*
- Period 4. Competition period: May - June - July
Championships "Peak" Program*
- Period 5. Recovery period: (August) September*

PERIOD 1: October - January (Preparation period 1)

Program October:

Main effekt: Maximum Strength.

Secondary effect: General Endurance.

Program November:

Main effekt: Maximum Strength and General Endurance.

PERIOD 2: January - February (Preparation period 2)

Program January and February:

Main effekt: General Endurance and Muscular Endurance.

PERIOD 3: March - April (Pre-competition period)

Program March and April:

Main effekt: Basic Specific Endurance and Rowing Technique.

PERIOD 4: May - June - July (Competition period)

Program Weeks without competition:

Main effekt: Increased Specific Endurance.

Program Weeks with competition:

Main effekt: "Super-Compensation" effect and Race preparation.

Training Program: October

Day:	Program:	Rec.:	Heart rate:	Stroke rate:	Km:
Monday	A) Warming up: Running/Gymnastic 30 min B) Weight training (Volume-training)** C) Flexibility - Gymnastic		130-150		
Tuesday	A) Warming up: Rowing/Running/Gymnastic 30 min B) Weight training (Volume-training) C) Flexibility - Gymnastic		130-150		
Wednesday	A) Running: Slow Distance B) Flexibility		130-150		10-12
Thursday	A) Warming up: Rowing/Running/Gymnastic 30 min B) Weight training (Volume-training) C) Flexibility - Gymnastic		130-150		
Friday	A) Running: Warming up B) Hillrunning: Ca. 5 min 3-5 rep. C) Flexibility	4'-6'	130-150 170-190		3-4 5-8
Saturday	A) Warming up: Rowing/Running/Gymnastic 30 min B) Weight training (Volume-training) C) Flexibility		130-150		
Sunday	A) Rowing (or) Running (or) Cycling C) Flexibility		130-150 130-160 130-160	18-20	20 14-16 35-50

*) Se program for Weight training. **) Lightweight rowers should use program "Top-pyramide"

Training Program: November

Day:	Program:	Rec.	Heart rate:	Stroke rate:	Km:
Monday	A) Warming up: Running/Gymnastic 30 min B) Weight training (Maximum strength training *) ** C) Flexibility - Gymnastic		130-150		
Tuesday	A) Warming up: Rowing/Running/Gymnastic 30 min B) Weight training (Volume-training) C) Flexibility - Gymnastic		130-150		
Wednesday	A) Rowing/Running: Slow Distance B) Flexibility		130-150	(15-18)	10-12
Thursday	A) Warming up: Rowing/Running/Gymnastic 30 min B) Weight training (Volume-training) C) Flexibility - Gymnastic		130-150		
Friday	A) Running: Warming up B) Hillrunning: Ca. 5 min 3-5 rep. C) Flexibility	4'6"	130-150 170-190		3-4 5-8
Saturday	A) Warming up: Rowing/Running/Gymnastic 30 min B) Weight training (Volume-training) C) Flexibility		130-150		
Sunday	A) Rowing (or) Running (or) Cycling B) Flexibility		130-150 130-160 130-160	18-20	20 14-16 35-50

*) Se program for Weight training. **) Lightweight should use "Top-pyramid"

Training Program: December

Day:	Program:	Rec.:	Heart rate:	Stroke rate:	Km:
Monday	A) Warming up: Running/Gymnastic 30 min B) Weight training (Maximum strength training)** C) Flexibility - Gymnastic		130-150		
Tuesday	A) Running: Long Slow Distance B) Flexibility		130-150		10-12
Wednesday	A) Warming up: Rowing/Running/Gymnastic 30 min B) Weight training (Maximum strength training) C) Flexibility - Gymnastic		130-150		
Thursday	A) Running: Warming up B) Hillrunning: Ca. 5 min 5 rep. C) Flexibility	4'-6'	130-150 170-190		3-4 5-8
Friday	A) Warming up: Rowing/Running/Gymnastic 30 min B) Weight training (Maximum strength training) C) Flexibility - Gymnastic		130-150		
Saturday	A) Rowing (or) Running (or) Cycling B) Flexibility		130-150 130-160 130-160	18-20	20 14-16 35-50
Sunday	A) Rowing (or) Running (or) Cycling B) Flexibility		130-150 130-160 130-160	18-20	20 14-16 35-50

*) Se program for Weight training. **) Lightweight should use "Top-pyramid"

Training Program: January

Day:	Program:	Rec.:	Heart rate:	Stroke rate:	Km:
Monday	A) Warming up: Running/Gymnastic 30 min B) Weight training (Maximum strength training) C) Flexibility - Gymnastic		130-150		
Tuesday	A) Running: Warming up B) Running: Short Interval 20/10 sec. x 12 min. 2 series. C) Flexibility	3'-5'	130-150 180-190		3-5 4-6
Wednesday	A) Warming up: Running/Gymnastic 30 min B) Weight training (Weight Endurance)* C) Flexibility - Gymnastic		130-150		
Thursday	A) Running: Warming up B) Hillrunning: Ca. 5 min. x 5 rep. C) Flexibility	4'-6'	130-150 170-190		3-4 5-8
Friday	A) Warming up: Running/Gymnastic 30 min B) Weight training (Weight Endurance) C) Flexibility - Gymnastic		130-150		
Saturday	A) Rowing (or) NB! Running (or) Cycling B) Flexibility		130-150 130-160 130-160	18-20	20 14-16 35-50
Sunday	A) Rowing (or) NB! Running (or) Cycling B) Flexibility		130-150 130-160 130-160	18-20	20 14-16 35-50

*) Se program for Weight training Endurance. NB! = Rowing if possible.

Training Program: February

Day:	Program:	Rec.:	Heart rate:	Stroke rate:	Km:
Monday	A) Warming up: Running/Gymnastic 30 min B) Weight training ("Top-pyramid") C) Flexibility - Gymnastic		130-150		
Tuesday	A) Rowing: Long Slow Distance B) Flexibility		130-150	18-20	16-20
Wednesday	A) Rowing: Warming up/Technical "Drills" B) Rowing: 4 x 8 min. C) Flexibility	3'-4'	130-150 140-160	18-20 22-24	3-5 10-12
Thursday	A) Rowing: Technical "Drills" B) Hillrunning: Ca. 5 min. x 3 rep. C) Flexibility	4'-6'	170-190		6-8 5-8
Friday	A) Rowing: Warming up/Technical "Drills" B) Rowing: 3 x 12 min. C) Flexibility	3'-4'	130-150 140-160	18-20 22-24	3-6 10-12
Saturday	A) Rowing: Technical "Drills" B) Rowing: Slow Distance C) Flexibility		130-160	20-22	3-6 12-16
Sunday	A) Rowing: Technical "Drills" B) Rowing: "Fartlek" C) Flexibility		130-170	18-28	3-6 12-16

OBS! "Drills" and "Fartlek" see descriptions.

Training Program: March - April

Day:	Program:	Rec.:	Heart rate:	Stroke rate:	Km:
Monday	A) Warming up: Running/Gymnastic 30 min B) Weight training ("Top-pyramid") C) Flexibility - Gymnastic		130-150		
Tuesday	A) Rowing: Warming up B) Rowing: Long Interval 3-4 x 5 min. C) Flexibility	3'-5'	130-150 160-170	18-20 26-30	4-6 10-12
Wednesday	A) Rowing: Warming up B) Rowing: Short Interval 30/20 (strokes) x 10. 2 series C) Flexibility	4'-6'	130-150 170-180	18-20 28-30	4-6 10-12
Thursday	A) Rowing: Warming up B) Rowing: 3 x 12 min C) Flexibility	4'-6'	130-150 160-170	18-20 26-28	4-6 12-14
Friday	A) Rowing: Warming up B) Rowing: 4-3-2-1 x 3 (23-25-27-29) C) Flexibility	3'-4'	130-150 130-170	18-20 23-29	4-6 12-14
Saturday	1. A) Rowing: Warming up B) Rowing: Short Interval 40/20 (strokes) x 8. 2 series C) Flexibility *2. A) Rowing: LSD B) Flexibility	4'-6'	130-150 170-180 140-160	18-20 28-30 22-24	4-6 12-14 16-20
Sunday	A) Rowing: Warming up B) Rowing: 2 x 8 min. (2000 m) C) Flexibility	10'-12'	130-150 170-180	18-20 28-30	4-6 12-14

*) = If possible

Training Program May-June-July

(Weeks before Regattas)

Day:	Program:	Rec.:	Heart rate:	Stroke rate:	Km:
Saturday	1. A) Rowing: Warming up B) Rowing: 4-6 x 500 m C) Flexibility	1'-2'	130-150 Max	18-20 Max	4-6 8-10
	2. A) Rowing: Warming up B) Rowing: 2-3 x 1000 m C) Flexibility	6'-8'	130-150 Max	18-20 Max	4-6 10-12
Sunday	1. A) Rowing: Warming up B) Rowing: 2-3 x 1000 m C) Flexibility	6'-8'	130-150 Max	18-20 Max	4-6 10-12
Monday	A) Rowing 65-70% B) Flexibility		140-150	22-24	20
Tuesday	A) Rowing: Warming up B) Rowing: 2-3 x 5 min C) Flexibility	4'-6'	130-150 170-180	18-20 28-30	4-6 10-12
	*** 2. A) Rowing 60-65% B) Flexibility		130-140	20-22	12
Wednesday	A) Rowing: Warming up B) Rowing: 1x1000 m + 1x500 m C) Flexibility	8'-10'	130-150 Max	18-20 Max	4-6 8
Thursday	A) Rowing: Fartlek B) Flexibility		130-180	18-36	12-16
	*** 2. A) Rowing: Fartlek B) Flexibility		130-180	18-36	12-16
Friday	A) Rowing: Fartlek B) Flexibility		130-180	18-36	12-16
	*** 2. A) Rowing: Fartlek B) Flexibility		130-180	18-36	12-16
Saturday	A) Regatta				
Sunday	A) Regatta				

***| = Second rowing session if possible.

Training Program: May-June-July

(Weeks without Regattas)

Day:	Program:	Rec.:	Heart rate:	Stroke rate:	Km:
Monday	A) Rowing 65-70%*) B) Flexibility		140-150	22-24	16-20
Tuesday	A) Rowing: Warming up B) Rowing: 4-3-2-1 x 3 C) Flexibility	10'-12'	130-150 140-180	18-20 26-32	4-6 12-14
	**12. A) Rowing: 65-70% B) Flexibility		140-150	22-24	12-16
Wednesday 1.	A) Rowing: Warming up B) Rowing: Short Interval 30/10 (strokes) x 10 (60/20 sec) 2 series 6'-8' C) Flexibility		130-150 170-180	18-20 30-34	4-6 12-14
	**12. A) Rowing: 65-70% B) Flexibility		140-150	22-24	12-16
Thursday	A) Rowing: Warming up B) Rowing: Long Interval 3-4 x 5 min. C) Flexibility	4'-6'	130-150 170-180	18-20 28-32	4-6 12-14
Friday	A) Rowing: Warming up B) Rowing: 3 x 12 min. C) Flexibility	8'-10'	130-150 160-170	18-20 27-29	4-6 12-14
	**12. A) Rowing: 60-65% B) Flexibility		130-140	20-22	12-16
Saturday	A) Rowing: Warming up B) Rowing: Short Interval 17/5 (strokes) x 20 (30/15 sec) 2 series 6'-8' C) Flexibility		130-150 170-180	18-20 34	4-6 12-14
	**12. A) Rowing: 60-65% B) Flexibility		130-140	20-22	12-16
Sunday	A) Rowing: Warming up B) Rowing: 2-3 x 2000 m (1250/500/250) 15'-20' (30/32-32/34-34/38) or 7 min. (4-2-1) (30/32-32/34-34/38) C) Flexibility		130-150 180-190	18-20 30-38	4-6 12-14

*) = Every two weeks one session with "Top-pyramid" **) = Second session if possible.

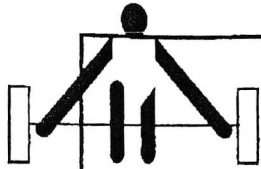
Training Program: (August) September

Day:	Program:	Rec.:	Heart rate:	Stroke rate:	Km:
Monday	A) Any kind of activity (walking/jogging/swimming/golf/tennis/soccer or any other ballgame) Rowing if you really feel for it.				
Tuesday	A) FREE, or some kind of aerobic				
Wednesday	A) As Monday				
Thursday	A) As Tuesday				
Friday	A) As Monday				
Saturday	A) Free				
Sunday	A) As Monday				

Do what you feel for; you should enjoy it!

Training Program: "Peak"

Day:	Program:	Rec.:	Heart rate:	Stroke rate:	Km:
Monday	A) Rowing: Long Distance B) Flexibility		130-150	18-22	16-20
Tuesday	A) Rowing: Warming up B) Rowing: Long Interval 3 x 4 min. C) Flexibility	4'-6'	130-150 170-180	18-20 30-33	4-6 8-10
Wednesday	A) Rowing: Warming up B) Rowing: Short Interval 30/10 (strokes) x 6. 3 series C) Flexibility	4'-6'	130-150 170-180	18-20 30-34	4-6 10-12
Thursday	A) Rowing: Long Distance B) Flexibility		130-150	18-22	16-20
Friday	A) Rowing: Warming up B) Rowing: 3-2-1 x 3 (28-30-34) C) Flexibility	5'-7'	130-150 160-190	18-20 28-34	4-6 10-12
Saturday 1.	A) Rowing: Warming up B) Rowing: Short Interval 20/10 (strokes) x 6. 3 series C) Flexibility	8'-10'	130-150 180-190	18-20 32-36	4-6 10-12
2.	A) Rowing: Long Distance B) Flexibility		130-150	18-22	12-16
Sunday	A) Rowing: Warming up B) Rowing: 2 x 2000 m (1250/500/250) 15'-20' or 7 min. (4-2-1) (30/32-32/34-34/38) C) Flexibility		130-150 180-190	18-20 30-38	4-6 12-14



Weight Training

Volume Training

FISA The International Rowing Federation

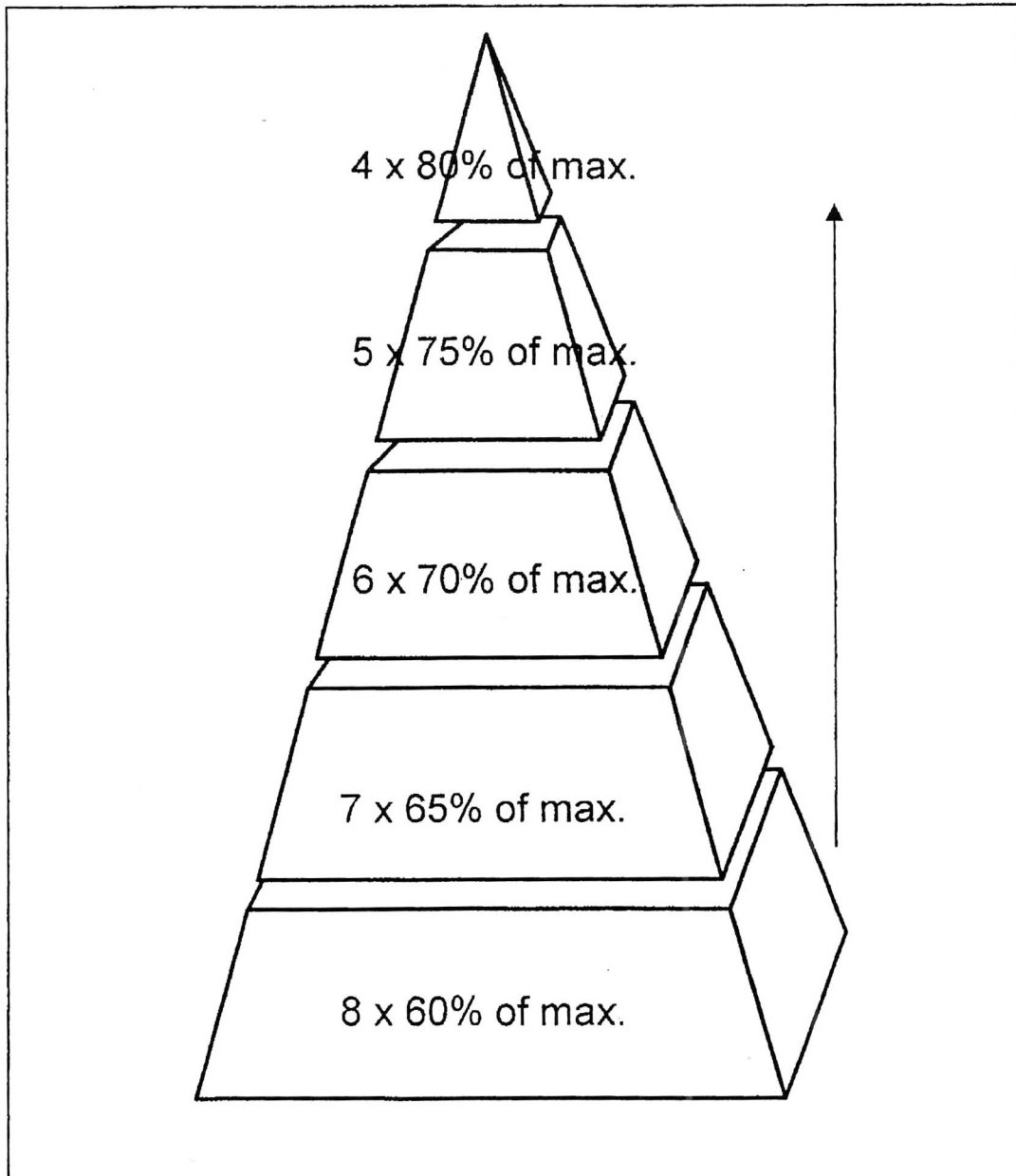
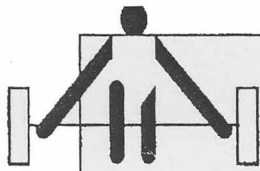


Fig. A



Weight Training

Maximum strength

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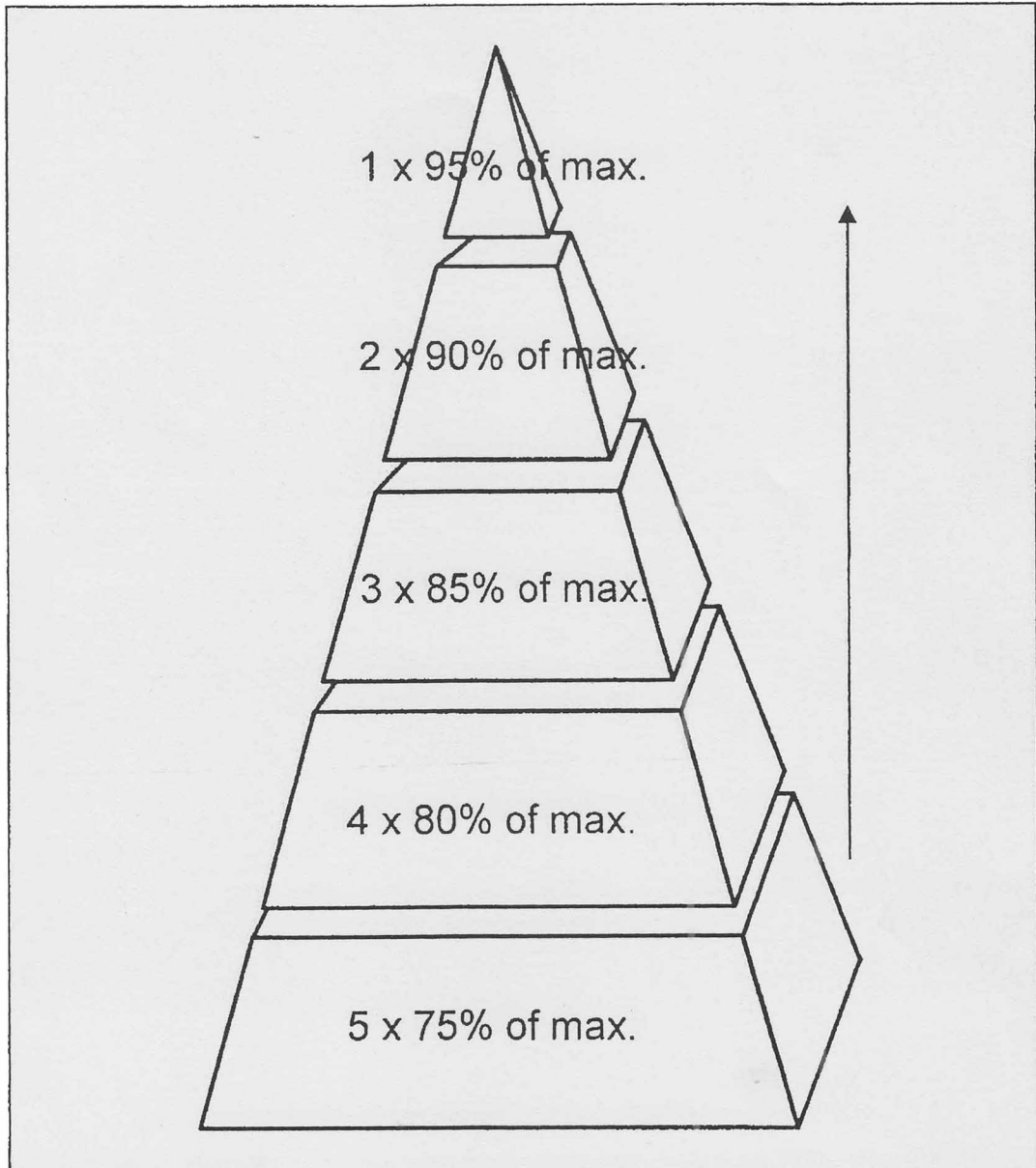
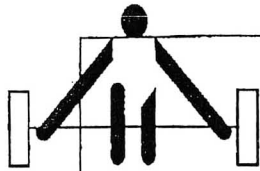


Fig. B



Weight Training

"Top-pyramid" training

FISA The International Rowing Federation

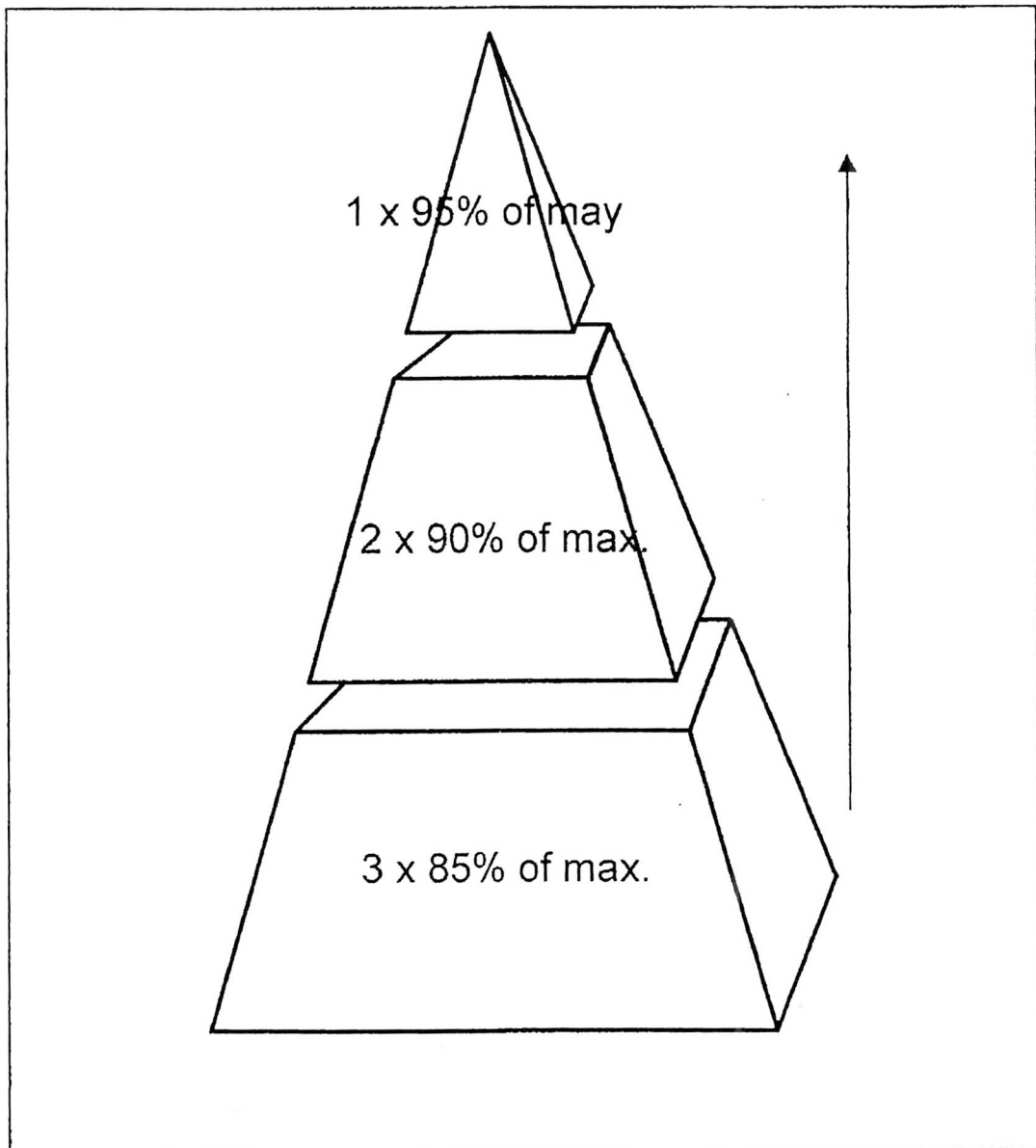
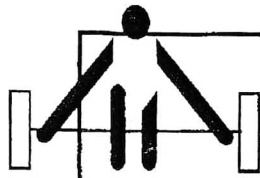


Fig. C



Weight Training

Endurance

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<p>A</p>	<p><i>Exercise A and B</i></p> <p>Load: 35-45% of max Series: 3 Rep: 60-80 Rate: 20-26 Rest: 3-4 Min.</p>	<p>B</p>
<p>C</p>	<p><i>Exercise C</i></p> <p>Load: 35-45% of max Series: 3 Rep: 60-80 Rate: 20-24 Rest: 3-4 Min.</p>	
<p>D</p>	<p><i>Exercise D and E</i></p> <p>Load: 0-5 kg. Series: 3 Rep: D/40 E/50 Rest: 3-4 Min</p>	<p>E</p>

Fig. D

၉။ လေ့ကျင့်ရေးကာလအပိုင်းအခြားများခွဲခြားခြင်း (Training Periodisation)

1. Periodization
2. Training Load
3. Training Cycles-The Wave Principle of Training
4. Planning each Training Period
5. Planning each Training Cycle
6. Planning each Training Session
7. A yearly Training Program
8. Planning a Training Program
9. Establish an Objective
10. Develop a Systematic Plan
11. Implement Plan
12. Monitor and Review the Plan
13. Appendices

3.0 PERIODIZATION

Periodization is the process of dividing an annual training program into periods of training to allow the program to be set into manageable segments and to ensure a correct peaking for the main competition or training objective of the year.

The process of periodization depends on the use of the concepts of training loads and the wave principle of training. This information will enable better understanding of the principal components of periodization: training period, training cycle and training session.

3.1 Training Load

The training load consists of the quantity and quality of work. Quantity is represented by distance of work, time of work, or number of repetitions, etc. Thus, a rowing training session may be described as, for example, 16 kilometres in distance during which 3 repetitions of 10 minutes of work will be performed.

Quality is the effort exerted in the training session. It may be represented as the speed of running, the amount of weight lifted, heart rate maintained, or, in the boat, a combination of pressure applied on the blade and the stroke rating, etc. Thus, the example rowing training session above may be further described as 3 repetitions of 10 minutes of work at a rating of 26 strokes per minute while maintaining a heart rate of 140-170.

In a systematic plan of training, the training load goes from quantity to quality. This means that, after a period of adjusting to a new training season, the training starts with a large quantity of a relatively low or medium quality of work to provide all-around development and improvement in endurance capabilities.

As the training season progresses, there is a gradual increase in quality and a corresponding decrease in quantity. This enables the development of the specific needs of the sport of rowing and the necessary performance capabilities to achieve the training objective.

Although this procedure is for the major part of the program, it must be considered as a guide because training in any period of the year is complex and must cover all aspects of the work requirements of rowing.

3.2 Training Cycles - The Wave Principle of Training

The training cycle is a limited period of training, usually between 4 and 8 weeks, during which the programme is directed toward a certain training objective. Training cycles follow the wave principle of applying alternating phases of increasing and decreasing training load.

It has been demonstrated that this step or wave approach is more efficient than the linear or continuous method of loading. As opposed to the continuous method, the wave principle requires that a training load increase must be followed by a decrease in training load during which the athlete's body is able to recover and adapt to the training load. This enables the athlete to be subjected to progressively increasing training loads.

It has also been demonstrated that the best results in improvement of performance can be achieved if the training load is gradually increased during three successive training sessions up to the athlete's maximum load capability (for example 50%, 75%, 100%) and followed by a very light training session or a complete rest. This applies to training programs of five or more sessions per week. If the frequency of training sessions is less, the program can be designed with one day off after every outing and with the training load being gradually increased to its maximum on the weekend.

The wave principle of changing the training loads will apply throughout the training cycle, which means that the maximum load will vary from week to week creating the wave approach to training. Appendix A provides an example of this principle.

3.3 Planning each Training Period

A systematic training program based on scientific and training principles is fundamental to the successful pursuit of high level

athletic performance. The systematic training programme is developed by working in reverse chronological order from the date of the main competition or training objective and dividing the training season into the appropriate number of training periods.

Each period has different aims and, to some extent, will continue the application of the concepts of training load and the wave principle of training.

The periodization of the training season may be represented as follows:

- A. *Preparation Period (six months).*
- B. *Competition Period (five months).*
- C. *Transition Period (one month).*

The aims of each period are:

A. Preparation Period.

- 1. To develop general physical fitness.
- 2. To develop rowing technique, specific physical fitness for rowing and psychological preparedness for the coming competition period.

B. Competition Period.

- 1. Further development of rowing technique, specific physical fitness for rowing and psychological preparedness for competition mainly by training in the boat.
- 2. To develop and stabilize competition performance.

C. Transition Period.

- 1. Physical and mental relaxation.
- 2. Relief from the pattern of systematic training.

3.4 Planning each Training Cycle

Each period is divided into one or more training cycles of 4 to 8 weeks in length. The plan for each cycle gives the athlete an outline of the particular activities on the land and in the boat. It shows the kinds of exercises, the quantity and quality of the work, and a detailed program for each training session in the cycle. The plan for each cycle takes into consideration the different degrees of training load and rest intervals within the week and within the whole cycle (see Appendices A & B).

3.5 Planning each Training Session

The aim of the period and cycle and the purpose of each session should be carefully explained to the athlete. Every training session must begin with a good warm up on the land (5 to 10 min. of light jogging and 5 min. of mobility exercises) and also in the boat (systems of warm up in the boat vary from crew to crew).

After the warm up in the boat, there is a time for technical exercises because the teaching of technique or correction of technical faults requires mental concentration, which deteriorates with the increasing fatigue of the athlete during the training session.

After the technical exercises have been completed, the main part of the session is devoted to the principal aim of the training period and the training cycle. The last part of the training session is for relaxation and a warm down. During the training session, the coach should present a clear purpose for the session by keeping unnecessary communication to a minimum and concentrating on a few important points that will assist the athlete in maintaining the proper focus during each session.

At the conclusion of each session, the coach should exchange observations with the athlete or crew and evaluate the session. This procedure will assist in the process of monitoring and controlling the training program and, thereby, increasing the benefits to be derived from each future training session.

3.6 A Yearly Training Program

Appendix B has been included to present an actual year round training program that you may use to train your club athletes. It is important to realize that these programs must be adapted to the specific needs of your athletes giving consideration to their individual state of development and future training objectives.

4.0 PLANNING A TRAINING PROGRAM

An annual training program is the most important tool for the coach to direct and guide athletic training over the training year. It is based on the principles of training and the concept of periodization.

Planning a training program requires a clear understanding of the objective of the program and a procedure to achieve the objective. This purpose may be accomplished by utilizing the following guidelines:

1. *Establish an objective.*
2. *Develop a systematic plan.*
3. *Implement the plan.*
4. *Monitor and review the plan.*

4.1 Establish an Objective

The objective of a training program will be the achievement of a defined performance level at a designated competition. This competition may occur at the culmination of either a few months of training (a short term objective) or many years of training (a long term objective).

It should be noted that, as athletic potential may only be optimised by year round training, emphasis should be placed upon the development of year round training programs.

4.2 Develop a Systematic Plan

A systematic plan is developed by working in reverse chronological order from the date of the objective of the plan and dividing the training season into the appropriate number of training periods. This procedure is called periodization (see section 3.0) and may be represented as demonstrated in diagram 1.

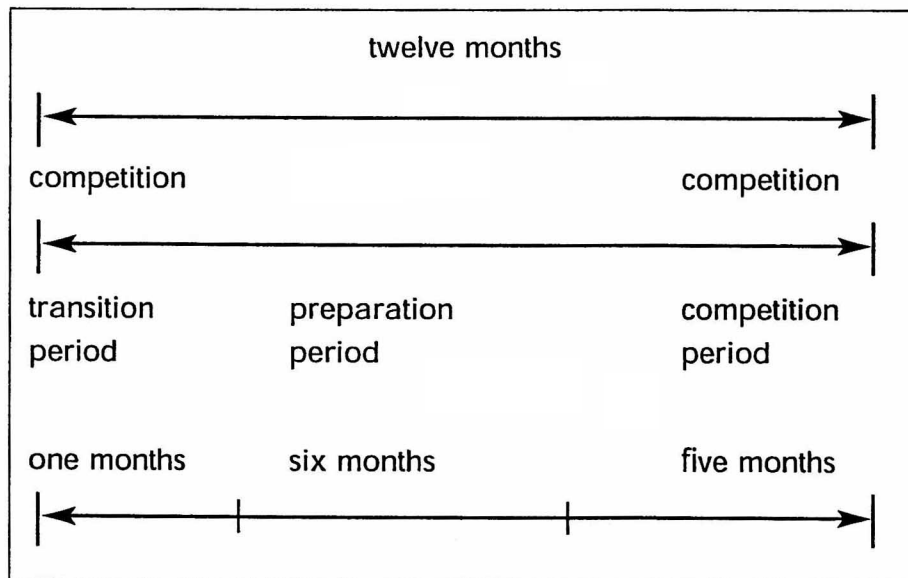


Diagram 1 - Periodization Plan

It is important to realize that a systematic plan must be developed in conjunction with an understanding of how to implement the plan. This is probably the most difficult aspect of designing and monitoring a training programme. It requires an understanding of the basic principles of training (see section 2.0), the concepts of training loads and training cycles (see sections 3.1 and 3.2), the energy systems, proper rowing technique and the methodology of learning.

4.3 Implement the Plan

The coach and athlete must make a conscious decision to proceed with the plan and become active participants in the training process. This ensures that the athlete maintains the proper motivation in the pursuit of the training objective and that the athlete trains regularly and conscientiously.

4.4 Monitor and Review the Plan

It is important that the plan includes various tests and standards that are to be attempted and successfully completed, both on and off the water, during the training season. These tests and standards will provide valuable information on the athlete's developing capabilities and on the effectiveness of the plan in directing the athlete towards the training objective.

As well, it is important that both the coach and athlete maintain a training journal to document their observations and comments about the training. This information is invaluable in the process of reviewing the plan both during and after the training season. This review will allow modification to be made in the programme during the season and from season to season to enhance the athlete's opportunity to achieve his or her athletic potential.

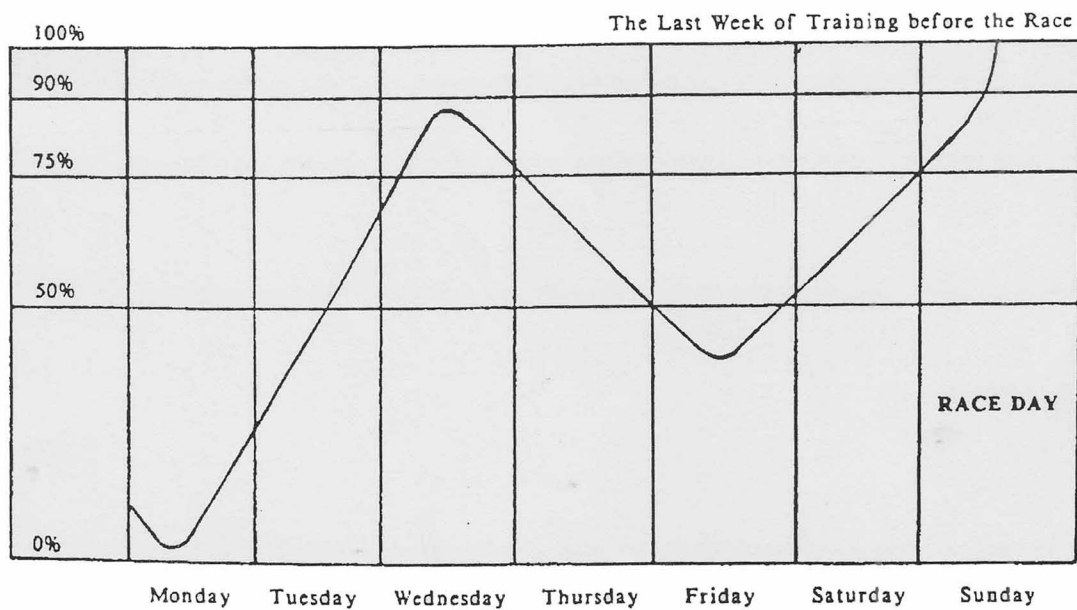
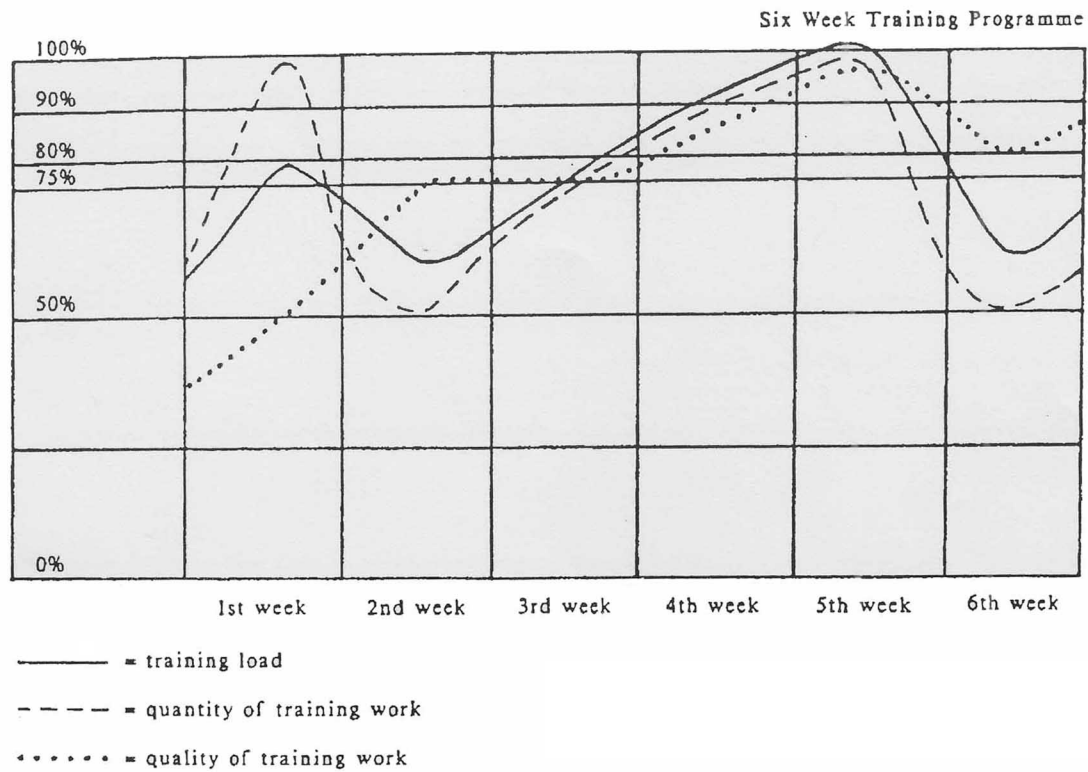
This procedure for the planning of a training programme should be repeated for each new training season in order to develop a training programme that is appropriate to the growing and ever-changing needs of the athlete.

5.0 SUMMARY

The information presented in this course will enable you, the coach, to prepare training programmes that will assist your athletes in the achievement of their training objectives. This ability will be enhanced after practice and years of experience.

6.0 APPENDICES

6.1 Appendix A - Wave Principle of Training



နိဂုံး

၁၀။ အပြည်ပြည်ဆိုင်ရာ (Rowing) အားကစားနည်း သင်ရိုးစာအုပ်မှာ International Federation of Rowing (FISA)မှ အခြေခံ (Rowing) လေ့လှော်သင်ကြားခြင်း Coaching Development Programme Course မှ မှီငြမ်းကိုးကားထားပြီး ဥပဒေများကို အကျဉ်းချုပ်သာ ဖော်ပြထားပါသည်။ ပြိုင်ပွဲစည်းမျဉ်းဥပဒေများ အပြည့်အစုံသိရှိလိုပါက FISA Rule and Regulation Book တွင် ဆက်လက်ဖတ်ရှုနိုင်ပါသည်။

မြန်မာနိုင်ငံလှေလှော်အဖွဲ့ချုပ်
နိုင်ငံတကာပြိုင်ပွဲများတွင် ဆုတံဆိပ်ရရှိမှုအခြေအနေ
(၁၉၉၀ မှ ၂၀၁၅ ထိ)

အပြည်ပြည်ဆိုင်ရာလှေ

စဉ်	ပြိုင်ပွဲအမည်	ကျင်းပသည့်နိုင်ငံ	ကျင်းပသည့်ကာလ	ဆုတံဆိပ်ရရှိမှု		
				ရွှေ	ငွေ	ကြေး
၁	Far Eastern Amateur Rowing Association 84th Regatta Secretariat	သီရိလင်္ကာနိုင်ငံ၊ ကိုလံဘိုမြို့	၂၂. ၆. ၉၀ မှ ၂၃. ၆. ၉၀	-	၂	၁
၂	1 st Hong Kong Rowing Championship	ဟောင်ကောင်နိုင်ငံ၊ Marina Bay	၉. ၁၁. ၉၁ မှ ၁၀. ၁၁. ၉၁	-	-	-
၃	World Light Weight Rowing Championship	ကနေဒါနိုင်ငံ၊ မွန်တရီရယ်မြို့	၁၉၉၂ ခုနှစ်	-	-	-
၄	(ပ)အကြိမ်အရှေ့တောင်အာရှအပြည်ပြည်ဆိုင်ရာ လှေလှော်သင်တန်းနှင့် ပြိုင်ပွဲ	စင်ကာပူနိုင်ငံ	၂၈. ၁၁. ၉၂ မှ ၆. ၁၂. ၉၂	-	၂	၁
၅	The 12 th Asian Games	ဂျပန်နိုင်ငံ Fukuyama	၂. ၁၀. ၉၄ မှ ၁၉. ၁၁. ၉၄	-	-	-
၆	3 rd South East Asia Rowing Champ:	မြန်မာနိုင်ငံ၊ ရန်ကုန်၊ အင်းလျားကန်	၁၆. ၁၁. ၉၄ မှ ၁၉. ၁၁. ၉၄	၈	၂	-
၇	29 th FEARA Regatta	သီရိလင်္ကာနိုင်ငံ၊ ကိုလံဘိုမြို့	၂၁. ၁. ၉၄ မှ ၂၆. ၁၁. ၉၄	၁	၂	-
၈	1 st Asian Rowing Training Camp & Regatta	တရုတ်နိုင်ငံ၊ ကျွန်းချင်းမြို့	၁၃. ၁. ၉၅ မှ ၂၅. ၁. ၉၅	-	-	-

စဉ်	ပြိုင်ပွဲအမည်	ကျင်းပသည့်နိုင်ငံ	ကျင်းပသည့်ကာလ	ဆုတံဆိပ်ရရှိမှု		
				ရွှေ	ငွေ	ကြေး
၉	4 th South East Asian Training Camp & Champions	စင်ကာပူနိုင်ငံ၊ Pasir Ris	၂၅. ၉. ၉၅ မှ ၁. ၁၀. ၉၅	၂	၄	၅
၁၀	6 th Asian Rowing Championship	တရုတ်နိုင်ငံ	၁၅. ၁၀. ၉၅ မှ ၁၈. ၁၀. ၉၅	-	-	-
၁၁	17 th Hong Kong Rowing Championship	ဟောင်ကောင်နိုင်ငံ၊ Shatin Rowing Club	၂၁. ၁၀. ၉၅ မှ ၂၂. ၁၀. ၉၅	-	-	-
၁၂	(၁၈)ကြိမ်မြောက်အရှေ့တောင်အာရှအားကစားပြိုင်ပွဲ	ထိုင်းနိုင်ငံ၊ ရင်းမယ်မြို့	၉. ၁၂. ၉၅ မှ ၁၇. ၁၂. ၉၅	-	၅	၂
၁၃	Asian Olympic Qualification Regatta	ဂျပန်နိုင်ငံ၊ တိုကျိုမြို့	၇. ၉. ၉၆ မှ ၉. ၆. ၉၆	-	-	-
၁၄	5 th South East Asian Rowing Championship, & Training Camp	အင်ဒိုနီးရှားနိုင်ငံ၊ ဂျတလူဟာ	၂၃. ၉. ၉၆ မှ ၃၀. ၉. ၉၆	၅	၆	၂
၁၅	(၁၉)ကြိမ်မြောက်အရှေ့တောင်အာရှအားကစားပြိုင်ပွဲ	အင်ဒိုနီးရှားနိုင်ငံ၊ ဂျကာတာမြို့	၁၁. ၁၀. ၉၇ မှ ၁၉. ၁၀. ၉၇	-	၂	၅
၁၆	3 rd Merlion Rowing Championship, Singapore	စင်ကာပူနိုင်ငံ	၄. ၆. ၉၈ မှ ၇. ၆. ၉၈	၈	၄	-
၁၇	7 th South East Asian Rowing Championship & 4 th Merlion Championship	စင်ကာပူနိုင်ငံ၊ Reffels Maria	၃. ၆. ၉၉ မှ ၁. ၆. ၉၉	၃	၁၂	၁

စဉ်	ပြိုင်ပွဲအမည်	ကျင်းပသည့်နိုင်ငံ	ကျင်းပသည့်ကာလ	ဆုတံဆိပ်ရရှိမှု		
				ရွှေ	ငွေ	ကြေး
၁၈	8 th Sea Rowing Championship	မလေးရှားနိုင်ငံ၊ ကွာလာလမ်ပူ	၁၁. ၇. ၀၀ မှ ၁၆. ၇. ၀၀	-	၃	၂
၁၉	6 th Merlion Championship	စင်ကာပူနိုင်ငံ၊ စင်ကာပူမြို့	၇. ၆. ၀၁ မှ ၁၄. ၆. ၀၁	-	-	-
၂၀	ကမ္ဘာ့သက်ငယ်တန်း အနောက်တိုင်းလှေလှော်ပြိုင်ပွဲ	ဂျာမနီနိုင်ငံ	၁၁. ၇. ၀၁ မှ ၁၄. ၈. ၀၁	-	-	-
၂၁	(၂၁)ကြိမ်မြောက်အရှေ့တောင်အာရှအားကစားပြိုင်ပွဲ	မလေးရှားနိုင်ငံ၊ ကွာလာလမ်ပူ	၂. ၉. ၁၀ မှ ၁၆. ၉. ၀၁	၁	၁	၃
၂၂	3 rd Asian Machime Rowing Championship & 7 th Merlion Rowing Championship	စင်ကာပူနိုင်ငံ၊ စင်ကာပူမြို့	၃၁. ၅. ၀၂ မှ ၇. ၆. ၀၂	၁	၂	-
၂၃	14 th Asian Games	ကိုရီးယားနိုင်ငံ၊ ဘူဆန်	၂၉. ၉. ၀၂ မှ ၄. ၁၀. ၀၂	-	-	-
၂၄	9 th South East Asian Rowing Championship	ဗီယက်နမ်၊ ဟနွိုင်းမြို့	၁၀. ၁၂. ၀၂ မှ ၁၈. ၁၂. ၀၂	-	-	၁
၂၅	(၂၂)ကြိမ်မြောက်အရှေ့တောင်အာရှအားကစားပြိုင်ပွဲ	ဗီယက်နမ်၊ ဟနွိုင်းမြို့	၄. ၁၂. ၀၃ မှ ၇. ၁၂. ၀၃	-	၁	၁
၂၆	30 th FEARA Regatta	သီရိလင်္ကာနိုင်ငံ	၂၈. ၉. ၀၄ မှ ၄. ၁၀. ၀၄	-	-	-

စဉ်	ပြိုင်ပွဲအမည်	ကျင်းပသည့်နိုင်ငံ	ကျင်းပသည့်ကာလ	ဆုတံဆိပ်ရရှိမှု		
				ရွှေ	ငွေ	ကြေး
၂၇	10 th Merlion Rowing Championship	စင်ကာပူနိုင်ငံ	၂. ၆. ၀၅ မှ ၅. ၆. ၀၅	-	၁	၁
၂၈	(၂၃)ကြိမ်မြောက်အရှေ့တောင်အာရှအားကစားပြိုင်ပွဲ	ဖိလစ်ပိုင်နိုင်ငံ	၂၈. ၁၁. ၀၅ မှ ၂. ၁၂. ၀၅	-	-	၁
၂၉	2007 Senior World Rowing Championships	ဂျာမနီနိုင်ငံ၊ မြူးနစ်မြို့	၂၆. ၈. ၀၇ မှ ၂. ၉. ၀၇	-	-	-
၃၀	The 12 th Asian Championship	ကိုရီးယားနိုင်ငံ၊ Chung Ju	၁၆. ၁၀. ၀၇ မှ ၁၅. ၁၂. ၀၇	-	-	-
၃၁	24 th SEA Games	ထိုင်းနိုင်ငံ	၆. ၁၂. ၀၇ မှ ၁၅. ၁၂. ၀၇	-	၄	၂
၃၂	26 th SEA Games	အင်ဒိုနီးရှားနိုင်ငံ	၁၀. ၁၁. ၁၁ မှ ၂၁. ၁၁. ၁၁	၁	၂	၁
၃၃	(၂၇)ကြိမ်မြောက်အရှေ့တောင်အာရှအားကစားပြိုင်ပွဲ	မြန်မာနိုင်ငံ၊ နေပြည်တော်၊ ငါးလိုက်ဆည်	၁၁. ၁၂. ၁၃ မှ ၁၄. ၁၂. ၁၃	၁	၂	၂
၃၄	(၂၈)ကြိမ်မြောက်အရှေ့တောင်အာရှအားကစားပြိုင်ပွဲ	စင်ကာပူနိုင်ငံ	၁၁. ၆. ၁၅ မှ ၁၄. ၆. ၁၅	-	၂	၅



အပြည်ပြည်ဆိုင်ရာလှေ
Rowing



နည်းပြဆရာလက်ရွှေ့

