


CHARLEY'S WAKE SPEED DISTANCE TIME TABLE

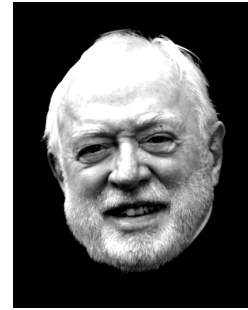
All boats leave a "track" but when a boat reaches a certain speed it produces a "wake." Height and strength of the wake depends on speed, size, passenger/cargo loading, shape of its hull and water depth. A wake 5 inches high normally causes little impairment. Such waves are usually created by boats operating at speeds **under 5.4 mph. (under 5 knots).** Increase speed and a 10 inch wake is 5 times more destructive; a 25" wake is 30 times more destructive.

COMMON REFERENCE POINTS:

A boat **exceeds** the 7 knot limit whenever it travels: . . .

- 100 meters *under 27 seconds*;
- 500 meters *under 2:18 sec.* (marked in Montlake & Fremont cuts)
- 145 meters *under 40 sec.* (University Bridge to I-5 Bridge)
- 185 meters *under 52 sec.* (University Bridge to red nun buoy 12)
- 219 meters *under 60 sec.* (Aurora Bridge to Fremont Bridge)
- 325 meters *under 90 sec.* (Montlake Bridge to light at west end of Cut)

speed over a 500 meter course	KN	Time	MPH	NOTES
 <p>Most crews practice at 6-7 knots & routinely exceed 7-8 knots</p> <p>no powerboat should be faster</p>	3	5:23	3.35	Wake-less-boats leave tracks; <i>max speed at Mt. Baker Rowing Center</i>
	4	4:02	4.60	Wake-less becoming wake; <i>max speed at Locks</i>
	5	3:14	5.75	12:57 for 2000 meters <i>planning boats start to plane (5-10 mph)</i>
	6	2:41	6.90	100 meters in 32 seconds <i>wakes too big Montlake/Fremont Cuts</i>
	7	2:18	8.05	Max power-boat speed on Canal <i>Practice speed zone in Lake Union still</i>
	8	2:01	9.20	8:05 for 2000 meters <i>illegal speed-wakes 5x more destructive</i>
	9	1:47	10.36	7:11 for 2000 meters <i>women single Neykova (Bulgaria) record 7:07.71 Seville 2002</i>
	10	1:37	11.51	6:48 for 2000 meters <i>men single Drysdale (New Zealand) record 6:35:40 Eton 2006</i>
	11	1:28	12.66	5:53 for 2000 meters <i>Mickelson (Cummins) & USA women 8 (11+ knots) record 5:55:50 Eton 2006</i>
	12	1:20	13.81	5:20 for 2000 meters <i>USA men 8 in Athens (just under 12 knots) record 5:19.85</i>
	13	1:14	14.96	21 seconds between the I-5 & University bridges—145 meters—RECKLESS Boating



Charley McIntyre's

little book of Laws & Information for the Seattle Sculler

EMERGENCY
CALL 9-1-1 OR VHF CH. 16 156.8 MHZ

Seattle Harbor Patrol 206.684-4071

1717 North Northlake PL Seattle 98103

Coast Guard District Commander 206.220-7090

Command Center 1(800) 982-8813, or 206.220-7001

King County Police Marine Unit 206. 296-3853

Mercer Island Police Marine Patrol 206. 275-7919

Lake Washington RC 206.860.4199

910 N. Northlake Way Seattle 98103

Pocock RC 206.328.0778

3320 Fuhrman Ave. E., Seattle 98102

Seattle Pacific Crew 206 281-2931

307 3rd Avenue West, Seattle 98119

U of W Crew 206.543-5249

Graves Bldg Box 354070 Seattle 98195

Lake Union Crew: 206.860.4199

11 E Allison St Seattle, 98102

Mt. Baker Rowing Center 206.386-1913

3800 Lake Washington Blvd S Seattle, 98118

Pocock Racing Shells 425.438-9048

615 80th Street SW Everett, WA 98203

Moss Bay 206.682-2031

1001 Fairview Ave. No. 1900, Sea 98109

THE 15 THINGS IN CHARLEY'S LAUNCH

- | | | |
|--|--|---|
| <p>(IN THE BOAT BAG)</p> <ol style="list-style-type: none"> 1. Lifejackets (PFD) for the cox, rowers, & launch personnel. 2. 1 throwable PFD 3. Throw rope 15 meters 4. First Aid Kit Coast Guard approved 5. Thermal Blankets in cold weather | <p>(IN CHARLEY'S OWN KIT)</p> <ol style="list-style-type: none"> 6. Tool box (small one) Knife, spare parts, spacers 7. pliers, tape, adjustable wrench, screwdrivers-slot & phillips, lubricant, plastic ties, rag, etc. 8. Whistle (around neck) 9. cell phone (in pocket) or marine radio | <p>(ALWAYS ON THE BOAT)</p> <ol style="list-style-type: none"> 10. Dead Man's Switch 11. Boat Registration 12. Bailer or pump 13. Paddles 14. Ladder or swim step 15. Fire Extinguisher 16. Charley's Little Book for the Seattle Sculler |
|--|--|---|

What's in your launch?

© July 6, 2008

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LAWS: The complete Harbor Code is found in Title 16 of the Seattle Municipal Code (SMC). State Law is in the Washington Administrative Code (WAC) title 352 Parks and Recreation Commission and the Code of Federal Regulations (CFR), title 33 and 46 US Code (USC) has Federal regs. County Code in 12.44 King County Code (KCC) but has limited application.

SMC16.20.010 COMPLIANCE W/ PUBLIC HEALTH REGULATIONS.

All vessels entering or in the harbor shall comply with the applicable public health laws and regulations of the United States, the state and its political subdivisions. *Charley sez, "Don't piss in the canal anymore"*

SMC16.20.020 RULES OF THE ROAD.

Except as otherwise specified in this title, vessels or water sport craft shall be subject to the International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS) and right-of-way laws and rules of The State of Washington, as each of them now exists or may hereafter be amended.

SMC16.20.030 EQUIPMENT AND NUMBERING. [coaching launch]

All vessels shall carry the equipment required by any applicable United States and State of Washington laws as now or hereafter amended, and shall be numbered or designated in accordance with any applicable United States and State of Washington laws as now or hereafter amended

SMC16.20.210 CERTIFICATE OF REGISTRATION -- ENFORCEMENT.

Any person charged with the enforcement of this title may request for inspection the certificate of registration from any vessel owner or operator to ascertain the legal and registered ownership of such vessel. Failure to provide such certificate for inspection upon the request of any person charged with enforcement of this title constitutes a violation and subjects the person, who is requested to produce such document, to the civil fine provided in Section 16.20.220. B. The terms "vessel" and "owner" shall have the meanings contained in RCW 88.02.010.

RCW 88.02.030 EXCEPTIONS FROM VESSEL REGISTRATION —

Vessel registration is required under this chapter except for the following: . . .
(8) Vessels with no propulsion machinery of any type for which the primary mode of propulsion is human power;

WAC 352-60-065 SOUND PRODUCING DEVICES. No person shall operate, or permit to be operated, a vessel on the waters of this state without sound producing devices. *(have a whistle or horn in the shell sez Charley)*

Harmony, balance, rhythm There you have it. That is what life's all about

~George Pocock



SPEED LIMIT EXCEPTION: Rower & Launch too

SMC16.20.130 Vessels operated by only human power are exempt from this section provided they are not operated in a negligent or reckless manner.

H. Subsections A and B of this section [the speed limits found on opposite page] **shall not apply to non-motorized vessels and motorized vessels in direct support of non-motorized vessels.** Motorized vessels providing support must be clearly marked as a support and/or rescue vessel and include the name or seal of the organization providing support. Motorized vessels, while exceeding the limit must do so only within obvious proximity to or in pursuit of vessel(s) being supported.

Note: This exception actually conflicts with Federal and State Law which does not provide for any exception. See below.....



Charley wants to know: "Is your launch 'clearly marked'?"

33 CFR 207.750(b) FEDERAL SPEED LIMITS.

To avoid damage to other vessels and to property along the shores, **all vessels** shall proceed at reduced speed in the canal as follows: (i) From the west entrance of the Lake Washington Ship Canal to the western end of the west guide pier of the Hiram M. Chittenden Locks, and from the east end of the easternmost guide pier of said Locks to the white flashing dolphin located south of Webster Point on Lake Washington, including all of Salmon Bay, Lake Union, Portage Bay, and Union Bay, it shall be unlawful for **any person to operate any watercraft or vessel** at a speed in excess of 7 nautical miles per hour within 200 feet of any shoreline, pier, restricted area or shore installation. (ii) From the western end of the aforesaid west guide pier to the eastern end of the aforesaid east guide pier at said Locks, it shall be unlawful for any person to operate any watercraft or vessel at a speed in excess of 4 nautical miles per hour.

USCG RULE 6 ~ SAFE SPEED [factors]

Every vessel shall at all times proceed at a safe speed so that she can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions. In determining a safe speed the following factors shall be among those taken into account...

1. The state of visibility; [very poor at University Bridge]
2. The traffic density including concentrations of fishing vessels or any other vessels; [boats tend to jam up at Fremont Cut, Locks, Montlake Cuf]
3. The manageability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions;
4. At night, the presence of background light such as from shore lights or from back scatter from her own lights
5. The state of wind, sea and current, and the proximity of navigational hazards;
6. The draft in relation to the available depth of water.

SMC16.20.130 SPEED REGULATIONS

Within the harbor limits of the City it shall be unlawful for any person to operate any vessel or water sport craft at a speed in excess of the following maximum limits:

A. SEVEN (7) NAUTICAL MILES PER HOUR within one hundred (100) yards of any shoreline, pier, restricted area or shore installation in Lake Washington, or upon the Lake Washington Ship Canal and adjacent waters **east of the entrance buoy at Shilshole Bay to one hundred (100) yards east of Webster Point light entering Lake Washington** and within two hundred (200) yards of any shoreline, pier, restricted area or shore installation in all other waters of the City;

B. SEVEN (7) NAUTICAL MILES PER HOUR in Lake Union provided that during daylight hours, the seven (7) knot speed limit shall not apply in a speed test area one hundred (100) yards wide and four hundred (400) yards long marked by buoys and bounded by the following coordinates: Beginning at a point ...[coordinates omitted]... Use of the speed test area shall be subject to the following limits:

1. In no event shall any vessel or water sport craft operate at a speed in excess of seven (7) knots in said area immediately prior to making a U-turn; 2. No vessel or water sport craft shall enter the speed test area and exceed the seven (7) knot limit if any other vessel or water sport craft is presently using the speed test area at a speed in excess of seven (7) knots; 3. No vessel or water sport craft shall make more than four (4) runs in or across the speed test area during a two (2) hour period; 4. The speed test area is intended for brief and limited use and shall be used only for vessel testing by individuals maintaining or selling vessels.

C. FOUR (4) NAUTICAL MILES PER HOUR from the western end of the west guide pier of the Hiram M. Chittenden Locks of the Lake Washington Ship Canal to the eastern end of the east guide pier at said Locks; or

D. THREE (3) NAUTICAL MILES PER HOUR south of the outermost headlands of Andrews Bay (a line drawn due west from the north tangent of Bailey Peninsula); or

E. THREE (3) NAUTICAL MILES PER HOUR within one hundred (100) yards of the shoreline of Lake Washington in an area marked by buoys and bounded on the north by a line which is an extension of the centerline of South Henderson Street and bounded on the south by a line which is an extension of the centerline of South Carver Street;

F. THREE (3) NAUTICAL MILES PER HOUR inside of the breakwater at Shilshole Bay Marina, Elliott Bay Marina or within the confines of any established marina or boat moorage area;

G. THREE (3) NAUTICAL MILES PER HOUR south of the outermost headlands of Wetmore Cove (a line drawn west from the North tangent of Sayres Park)

SMC16.20.190 EXPLOSIVES.

Every vessel approaching or passing any vessel engaged in the transfer of explosives... [displaying] red powder flag shall slow down to a **no wake speed** ...to prevent accident by reason of swells. *Charley sez this section is important because it is the only reference in the entire Harbor Code that he can find where the term "no-wake speed" is used and equates wakes with "swells."*

SMC16.20.072 VESSELS IN CONFINED AREAS.

While in the Montlake Cut, Fremont Cut, or within the guidewalls of any bridge area, vessels **shall remain to the right side of the channel** unless prevailing circumstances require otherwise.

Charley sez: "be careful at the bridges"



SEAPLANE RESTRICTIONS

SMC16.20.080 AIRCRAFT ON THE WATER.

All vessels or water sport craft shall keep clear of aircraft landing within any area now or hereafter set aside by law for such purpose. Aircraft on the water shall keep clear of all vessels and water sport craft and avoid impeding their navigation.

SMC16.20.081 AIRCRAFT TAKE-OFF AND LANDING RESTRICTED.

Aircraft are prohibited from landing and/or taking off from the Lake Washington Ship Canal excluding Lake Union and Lake Union Reach. Aircraft are prohibited from taking off from Portage Bay. [reaffirmed in 16.20.131]

SMC16.20.131 SPEED REGULATIONS -- AIRCRAFT ON THE WATER.

A. SPEED REGULATIONS. Except for aircraft in the process of taking off or landing, it shall be unlawful for any person to operate any aircraft on the water or step-taxiing over the water in excess of seven (7) nautical miles per hour within the jurisdiction of the City as follows:

1. Within one hundred (100) yards of any shoreline, pier, restricted area or shore installation in Lake Washington easterly of Webster Point;

2. Within two hundred (200) yards of any shoreline, pier, restricted area or shore installation in all other waters of the City; and 3. Within a designated anchorage or restricted area;

Provided, such speed limits shall not apply to aircraft during emergency conditions or on rescue operations where time is of the essence.

B. TAKE OFF PROHIBITED IN PORTAGE BAY It shall be unlawful for any person operating an aircraft to take off from Portage Bay.

————→ ACCIDENT! — FILE A REPORT ←————

SMC16.24.020 FILING OF REPORT The master, owner or operator of any vessel shall file a report within forty-eight (48) hours with the Chief of Police of any accident involving death or personal injury requiring medical treatment beyond first aid in which such vessel shall have been involved in Seattle Harbor. The master or owner of any vessel shall file a report within ten (10) days of any accident if damage to the vessel and other property totals more than Five Hundred Dollars (\$500) or there is a complete loss of the vessel. **Note: Same as WAC 352-70-040**

some BUOY INFO with exact locations for your GPS

- No 21 Webster Point Light Green flash4 sec, elev. 19' at 47 38 51 N 122 16 34 W
- No 12 red nun buoy underneath the I-5 bridge 47 39 09 N 122 19 23 W
- No. 11 green buoy at the north end of Lake Union 47 38 37 N 122 20 01 W lighted as Flashing Green 6 sec.
- No 2 red nun buoy at the south end of Lake Union 47 37 49 N 122 20 13 W



Charley sez: "KNOW THIS LAW –it is the only law governing the "effects of" the wake. When a power boater washes you tell him how to look this law right up his...." "speed over 4 knots (4.6 mph) can create a hazardous wake.

SMC16.20.090 NEGLIGENT OPERATION: *A person shall not operate a vessel or aircraft on the water in a negligent manner. For the purposes of this section, to "operate in a negligent manner" means operating a vessel or aircraft on the water in disregard of careful and prudent operation, or in disregard of careful and prudent rates of speed that are no greater than is reasonable and proper under the conditions existing at the point of operation, taking into account the amount and character of traffic, size of the lake or body of water, freedom from obstruction to view ahead, effects of vessel wake, and so as not to unduly or unreasonably endanger life, limb, property or other rights of any person entitled to the use of such waters.*

SMC16.20.100 RECKLESS OPERATION.

It shall be unlawful for any person to operate a vessel or an aircraft on the water in a reckless manner. For purposes of this section, "reckless" means acting carelessly and heedlessly in a wilful and wanton disregard of the rights, safety, or property of another. *Charley sez "It's called "reckless" but it requires "intent" or "willfulness"—a hard standard to prove."*

FEDERAL 46 USC (Shipping) §2302 NEGLIGENT OPERATIONS

- (a) A person operating a vessel in a negligent manner that endangers the life, limb, or property of a person is liable to the United States Government for a civil penalty of not more than \$1,000.
- (b) A person operating a vessel in a grossly negligent manner that endangers the life, limb, or property of a person shall be fined not more than \$5,000, imprisoned for not more than one year, or both.

LIFE JACKETS (PDF--Personal Flotation Device)

WAC 352-60-030 PERSONAL FLOTATION DEVICES REQUIRED

Lifejacket (PFD) is required in: "(1) Vessels less than sixteen feet (4.9 meters) in length, and canoes and kayaks of any length, must have one Type I, II, or III PFD of the proper size for each person on board. (2) Vessels sixteen feet (4.9 meters) or more in length, except a canoe or kayak, must have one Type I, II, or III wearable PFD of the proper size for each person on board and, in addition, one Type IV throwable PFD. . .

(5) **Exemptions.** *Racing shells, rowing sculls and racing kayaks are exempt from the requirements of this section provided they are manually propelled, [and] recognized by a national or international racing association and designed solely for competitive racing".*

WAC 352-60-020 Definitions. *"Racing shell, rowing scull, and racing kayak" means any manually propelled boat that is recognized by a national or international racing association for use in competitive racing, in which all occupants row, scull, or paddle, with the exception of a coxswain, if one is provided, and which is not designed to carry and does not carry any equipment not solely for competitive racing.*

Note: Federal Rule and State Rule are roughly the same: 33 CFR 175.17 Personal Flotation Device Exemption". . .(c) *Racing shells, rowing sculls, racing canoes and racing kayaks are exempted from the requirements for carriage of any Type PFD required under 175.15."*

OLYMPICS w/ some notable scullers

1896 Athens	1924 Paris	1956 Melbourne	1984 L. A.
1900 Paris	1928 Amsterdam	1960 Rome	1988 Seoul
1904 St. Louis (UW)	1932 L. A.	1964 Tokyo	1992 Barcelona
1908 London	1936 Berlin (UW)	1968 Mexico City	2000 Sydney
1912 Stockholm	WWII	1972 Munich	2004 Athens
	WWI	1976 Montreal	2008 Beijing
1920 Antwerp	1952 Helsinki	1980 Moscow	2012 London

Vyacheslav Ivanov Soviet Union. Gold in the single scull in 1956 1960 and 1964. (Harry Parker 5th in 1960 **Stuart MacKenzie** 2nd in 1956 w/ **John B. Kelly Jr. 3rd**).

Pertti Karppinen Finland gold in single scull 1976, 1980 and 1984.

Peter-Michael Kolbe Germany greatest to never win Gold. Took Silver-1976, 1984, 1988 --5 times the world champion

Thomas Lange Germany two Golds 1988, 1992; Bronze-1996

John B. Kelly, Sr. gold 1x 1920 w/ cousin **Paul Costello** gold 2x 1920, 1924

Jack Beresford Great Britain 2nd to **Kelly** in 1920, was gold in 1924, then gold in four 1932, gold in 2x 1936, silver in 1928 in 8

Ivanov, Lange, Karppinen, Kolbe, only rowers to win medals in the single scull in three different Olympics. Kelly Sr. triple winner in single and doubles.

Costello first to triple gold in single event-2x 1920, 1924, 1928; Beresford five time medalist –sweep and sculling

Paul Enquist of Seattle & **Brad Alan Lewis** Gold in 2x 1984

Arthur Ayrault Ted Nash John Sayre Rusty Wailes Gold straight four 1960

Silken Laumann Canada Bronze in 1992 in face of debilitating injury

N. B. **Joe Burke** would have medaled in 1940 Olympics



Charley sez: greatest sculler? George Pocock of course

It was Pocock who demonstrated that the more powerful and more natural stroke was the one movement cut through the water, with the quick release and instant recovery resulting in an imperceptible pause at the catch immediately preceding the start of the next stroke and not the pause at the finish

NAVIGATION LIGHTS WAC 352-60-060

A single white light is legal but the smart rower has a **red/green bow light and white light in the stern**. See **Coast Guard Rule 25** which provides that a boat under oars is to have "at ready at hand an electric torch or lighted lantern showing a white light which shall be exhibited in sufficient time to prevent collision." [Maybe a lighted lantern on the deck would look cool]

USE OF FLASHING LIGHTS WAC 352-60-060 Blue flashing lights are restricted to use by law enforcement vessels while public safety vessels use flashing red and yellow lights **DON'T USE FLASHING LIGHTS--**

Coat Guard Comment: *"Displaying a strobe for "higher visibility" would confuse other vessels as to your navigational status (many aids to navigation use a strobe or flashing). . . lights provide direction and aspect information to other boat operators. For example, if while operating my vessel I see a red light on my starboard side I know I am the give-way vessel (Rule 16, 17). The use of a strobe light could overwhelm a vessel's navigation lights and cease to provide such crucial direction and aspect."*

It's a great art, is rowing. It's the finest art there is. It's a symphony of motion. And when you're rowing well why it's nearing perfection. And when you reach perfection you're touching the divine. It touches the you of you's which is your soul.
 -George Pocock

SMC16.20.140 OVERLOADING. ...the "coaching launch"

A. No vessel shall be loaded with passengers or cargo beyond its safe carrying capacity nor carry passengers in an unsafe manner taking into consideration weather and other existing operating conditions.

B. No person shall operate a vessel while a passenger is situated on the bow or gunwale of the vessel in a manner which unduly or unreasonably endangers life or limb, taking into account the prevailing conditions including, but not limited to, the size and character of the vessel, and weather and water conditions.

C. Whenever it appears reasonably certain to any police or harbor officer that any person is operating a vessel loaded beyond its safe capacity and in the judgment of that officer the operation creates a hazardous condition, the officer may take reasonable measures to prevent any such person from so operating the vessel. The officer may direct the operator to take immediate and reasonable steps necessary for the safety of the individuals on board the vessel, including directing the operator to return to shore or a mooring and to remain there until the situation creating the hazard is corrected or ended or the officer may impound the vessel. Wilful failure to follow the direction of an officer under this section is a misdemeanor.

USE OF COACHES MEGAPHONE AND COX-BOX

SMC 25.08.500 PUBLIC DISTURBANCE NOISES. [before 7:00am -quiet]

It is unlawful for any person knowingly to cause or make...unreasonable noise which disturbs another..."Unreasonable noise" shall include the following sounds or combination of sounds: ...E. Loud and raucous, and frequent, repetitive, or continuous sounds made by the amplified or unamplified human voice **between the hours of ten (10:00) p.m. and seven (7:00) a.m.**

SMC 25.08.485 Watercraft Noise.

A. It is unlawful for any person to operate any watercraft in such a manner as to exceed the following maximum noise limits when measured within fifty (50) feet of the shoreline or anywhere within a receiving property:
 1. At any hour of the day or night, the limit for any receiving property shall be seventy-four (74) dB(A), except that;
 2. Between [10:00 pm and 7:00 am] the limit for any receiving property within a residential or rural district shall be sixty-four (64) dB(A). = [Electric typewriter at 10 ft]

TEMPERATURE IN LAKE UNION-gauge 0536 near Pocock Rowing Center			
Date	Temp C	Date	Temp C
1/3/2007	7.7	7/23/2007	21.49
2/13/2007	7.2	8/13/2007	20.83
3/12/2007	7.3	8/27/2007	20.9
5/14/2007	14.2	9/10/2007	20.74
5/30/2007	17.2	9/24/2007	18.22
6/11/2007	17.34	10/22/2007	13.03
6/25/2007	18.28	11/13/2007	11.05
7/9/2007	21.68	12/10/2007	8.41

WIND CHILL FACTOR CHART												
COOLING POWER OF WIND EXPRESSED AS AN EQUIVALENT CHILL TEMPERATURE (UNDER CALM CONDITIONS)												
ESTIMATED WIND SPEED (IN MPH)	ACTUAL THERMOMETER READING (F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	EQUIVALENT TEMPERATURES (F)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-124
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-21	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
Winds greater than 40 MPH have little additional effect.	LITTLE DANGER (For properly clothed person) Maximum danger of false sense of security.			INCREASING DANGER Danger from freezing of exposed flesh.				GREAT DANGER				
Trench foot and immersion foot may occur at any point on this chart.												

Rowing produces its own wind-chill by movement (as well as muscle heat). Rowing in 40 degree weather may, at times, feel like 28

—Charley sez: **"Wear proper clothing, especially the cox."**

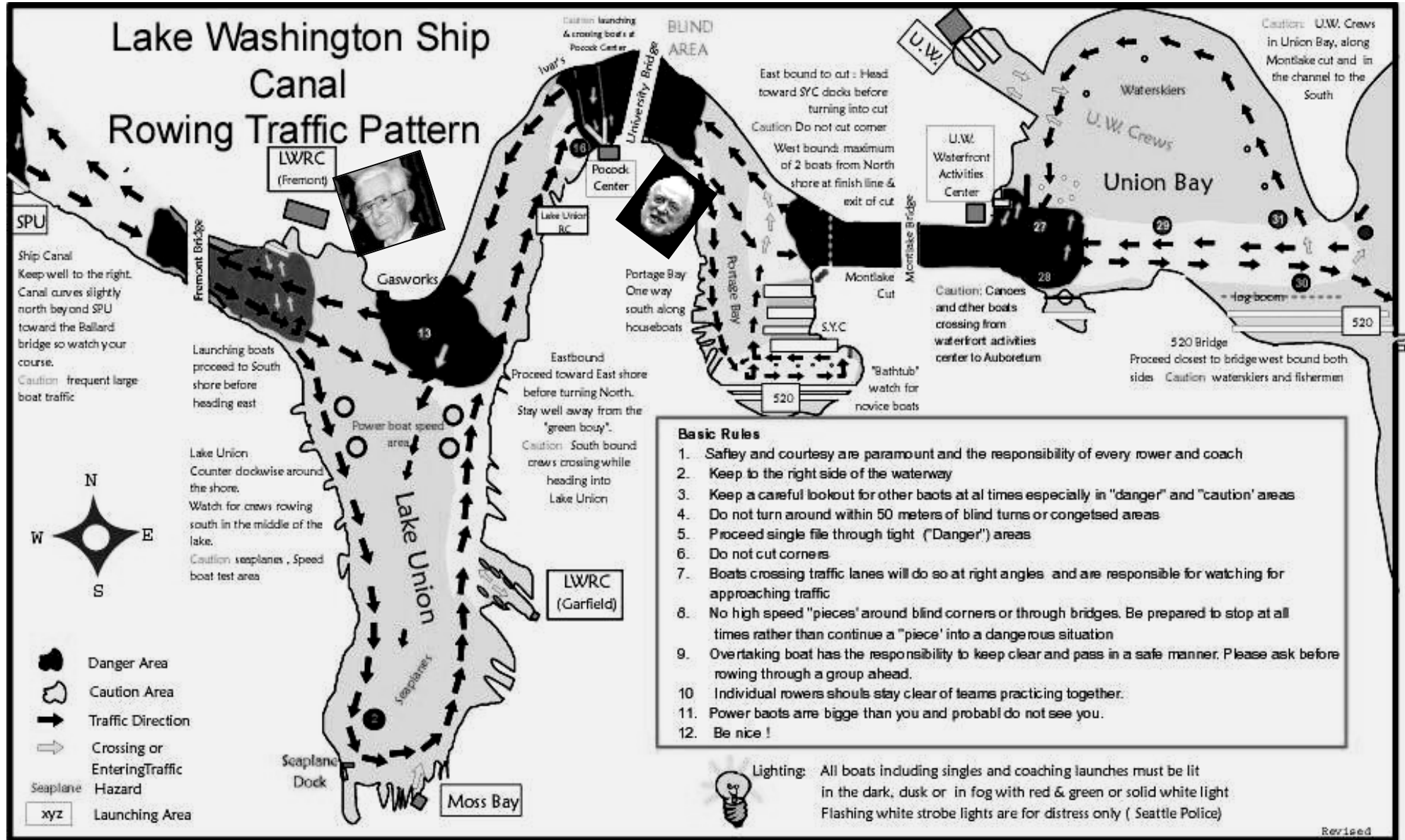
33 CFR 207.750 (B)(10) OBSTRUCTING NAVIGATION (i) All vessels and tows passing through the canal shall be kept as close as practicable to the center or, when safer, to the right side of the waterway, except when passing other craft or preparing to moor at a pier or wharf.. . . **Small and readily maneuverable vessels** operating in the vicinity of larger, less maneuverable vessels shall, in all cases, **keep clear and operate with caution in order that the larger vessels may maintain safe steerage way and that hazards to all vessels may be reduced.** All vessels shall operate with extreme caution and movements shall be made only when adequate precautions for the safety of other vessels and property are being effectively employed. Compare. . .

SMC16.20.070 INTERFERENCE WITH NAVIGATION.

No person shall use or operate any vessel or water sport craft or aircraft on the water in a manner which shall unreasonably or unnecessarily interfere with other vessels, water sport craft or aircraft on the water or with the free and proper navigation of the fairways of the City or the launching of any vessel or water sport craft at any public boat launching ramp. Anchoring or mooring under a bridge or in a heavily traveled channel or in an approach to a public boat launching ramp shall constitute such interference if unreasonable under the prevailing circumstances.

TRAFFIC PATTERN APPROVED BY [^]ALMOST ALL* BOATHOUSES

The 8.6 mile long Lake Washington Ship Canal was completed IN 1916 with construction of the Montlake Cut, the Fremont Cut, and the Chittenden Locks
 Be Careful—Understand the **COLD WATER IMMERSION INVOLUNTARY GASPING REFLEX**: A rower who flips may inhale water and drown without coming back to the surface. Cold water alone, removes heat 25 times faster than cold air—survival time can be reduced to minutes. In water under 40 degrees F, (4.44 C.) victims have died before swimming 100 feet. *Charley sez: "Do your flip-test in late July August or September"*



*U of W coaches often ignore this pattern and run clockwise in Portage Bay