                    WARNING! WARNING! WARNING!

THE FOLLOWING FILE IS NOT TERMINATED & EVEN NEEDS SOME
TRANSLATION, BUT SOON WILL BE DONE ASAP IN HYPERTEXT AND
WITH PIX WHEN NEED BE SO PLEASE BARE WITH ME TILL THEN,
MUCH INFORMATION CAN BE USED MEANWHILE FOR YOUR
ENJOYEMENT OR PLEASURE. MEANWHILE IF YOU HAVE ANY TIPS FOR
ME SEND THEM UP BY E-MAIL TO: richard@io.org

1)   ESTIMATE / LOG-BOOK/ STEP MEASURING

#ESTIMATE#:

In a survival situation before leaving a spot, REMEMBER
that is also IMPORTANT to note the time, distance of your
path, trip, just as much as to maintain a straight course
on your goal.

LOG BOOK:

A Journal well detailed and chronological becomes
ESSENTIAL to the success of Sailing by #estimate # but
also to Survival itself.

For centuries Sailors have use the sailing by #estimate#
to direct their ship when they see no coast or when the
weather is bad. This method is also used for land travelling.

Moving upon land MUST be carefully planed. One MUST know
if possible, for sure or at least approximately his
starting point as well as his destination.

And if one has a map, these #points# will be shown as well

as worthy landscape information. Those #points# when
perfectly identifiable become that many control points. When
you have no map, this specific sight is done #point by
point# on a piece of paper.

The scale used MUST permit to draw all the path on the
same sheet. The Northern direction well established, the
starting point and destination will be pointed, noted in
exact relation with one another.

If the terrain allows it the ideal direction would be a
straight line uniting the starting and ending point but this
is rarely the case.

The trip is usually done in many portions and steps using
the Azimuth (angle in degree) (see compass file *) and this
Azimuth is taken & determined at the start of the first trip

One start to measure from his starting point all the way to
next point or change of direction. Then a new Azimuth is taken
for the 2nd step and the distance is measured till the other
goal or change of direction, etc.

EVERY READING MUST BE VERY CAREFULLY REGISTERED and all
positions well entered and described.

STEP MEASURING:

To establish the distance made the step is the best unit
to measure which is approx. 30 inches.

The steps are usually counted in 100 being easier to
calculate and noted on a string and or in the Log-Book, or
by small pebbles in your pants, etc.

Those distances are of course approximate but will do the
trick but with practice they become more and more precise.

MEASURING STEP + OR - :

For anyone in survival it is important to predetermined
ahead the average length of his step in inches or foot
the distance travelled in 10 steps then to divide it by 10
= your step size.

On the terrain the account of the average step MUST be
verified & checked according to the following conditions:

Slope or Inclinations:

The steps are longer going down, shorter = up.

Wind: Against the wind steps are shorter, with wind = longer.

Surface: Sand, gravel, mud all alike surfaces = shorter steps.

Weather: Snow, rain or ice = shorter steps.

Clothing: Too heavy = shorter steps.

Different Shoes: can also affect the traction and
consequently the length of steps, Endurance & Resistance.

Fatigue: Make us crawl at time.

#POINTS DE REPERE# *:

It is any objects well defined, seen, and located on the

terrain, or ground in the direction that we want to
follow and toward which a sailor sails for.

It is easier to move around by using these #point de repere#
than to constantly use the compass orientation.

NUMBER EVALUATION:

How many trees are in an orchard or persons in a room? You
count quickly how many items in 1/4 or 1/10 of the area
then multiply by the total surface in order to get a good
approximate.

EVALUATIONS:

To master your path in an unknown land it is not enough to
have a sense of directions but also have the sense of distances.

It is not enough to locate correctly the stars and where
you are but also to be able to measure the trip to travel.

Evaluate the importance of an obstacle, to estimate the
height of a slope and its steepness and the variation of a
road angle.

It is good to be able to measure distance on a map but
only if you have sufficient ability to evaluate
dimensions so that you can correctly be capable to
represent what your measures will be once applied to the
terrain.

Once MUST also REMEMBER that the habit to evaluate all type
of height is absolutely needed in survival & rescuers. Not
only to establish an optical system for signals but also to

establish projects to build a small bridge or simply to
divide rations.

First thing to do is to create the habit to know your
personnel measurements (check it every 6 month for kids)
thus you will carry on you your personnel measuring
rulers without ever forgetting them home. Now to establish
your steps see above.

Then you MUST retain the dimensions of the things that
surround you; to evaluate the dimensions of a house with
or no stories know the usual height of phone pole and of
trees of same species or not that have the same height.

Then you MUST try to have a compass eye. It is not to get
mixed up in complicated procedure but to acquire with
training a sure and quick judgement.

The eye compass or nose sight is a result of long habit
to evaluate and measure coming from a long training.

DISTANCE APPEAR LONGER:

Than they are in reality when the terrain is accidented
& rough. If there are shadows or fog, also at sunset
the object observed is hard to see lacking contrast,
or because we are too low or hot.

DISTANCE APPEAR SHORTER:

Than they are if: the terrain is flat, or weather is
real clear (after rain or storm), or just before and
just after the sunset or if you observe over a water area.

Or if there is a colour contrast between the
object under observation and the background or when we
observe from a high point, or above a valley or if snow.

Now the quick evaluation of distance is not the only
habit to acquire but also to learn to estimate in one
quick look the surface & quantities, to evaluate weight
and time.

SURFACES:

We evaluate them by comparing with known spaces that we
know well after we have well taken the measurements of
their sizes.

Then we check precisely and we calculate the surface.
First evaluate with your eye then evaluate by comparison
then check your measures.

QUANTITIES:

Evaluate also by trial and verification till errors are
minimal. Check with scale for ration.

WEIGHTS:

Estimates by comparing with a known weight & holding the
other one in the right hand then change.

Start with mid heavy weight and to well know those of 1lb
and 1 kg and 5lb - 5kg then learn to master weight of 10
grams (letter) to 20-30 kg.

TIME AND DURATION:

Their evaluation comes from a wide range of knowledge
and habits where enters; the habit to evaluate the hour
by the sun, moon or star.

The habit which becomes instinctive to know the
darkening or increasing shadow of the scenery, length
and rhythm of step, the memory of the effort to do the
task, of the distance travelled, weather conditions,
sense of rhythm to count the seconds, you can count out
loud, 331, 332, 333 ...

In stressing on the 1 and 2 and 3 that tells you the
number of seconds' past.

Control with a watch until you find a good rhythm, when
relaxing you will have a tendency slowly, when excited
times come you will count a little too fast because of
hearth beat.

MONK! METHOD TO MEASURE TIME:

Using prayer, a Rosary or 5 decades takes about 15
minutes when said slowly! A full Rosary would take about
45 minutes to 1 hour, ask a catholic on that. 1 Hail
Mary takes only 15 sec. 1 Our Father: 25 sec.

2 USEFUL THINGS TO LEARN ABOUT TIME MEASUREMENTS:

DISTANCES MEASURES:

To measure a distance; sounds travel at the speed of 330
meter per second approximate.

The interval in seconds and fractions of seconds are
multiply by 330 will give you the distances in meter
the echo gives you the double of distance.

DEPTH MEASURES:

To measure a depth, measure the interval of time in
seconds between the moment where you drop a stone down
the hole that you want to measure and the moment where
you hear the shock of the stone in the bottom hole.

Here are from 0.5 sec to 3.5 sec the distances
travelled approximately by a free falling stone.

0.5 sec = 1.20m; 1 sec.= 5m.; 1.5 sec = 11m; 2 sec = 19m;
2.5 sec = 30m; 3 sec = 44m; 3.5 sec = 60 meters = Boum!

EYE COMPASS:

You have to create the habit by trial and error to
evaluate the approximate measures and to do so quickly.

There are a great number of geometric procedures of
estimate that are all based on the proportional sizes in
similar triangle.

The drawing in this chapter will give you some
method and procedures that we can vary as soon as we
have Understood? The very simple geometric principles
upon which they are based.

By using the proportions it permits you to tie #relier#,
the real width of an object, the distance from where you

see it, and the angle it takes which is a Compass Eye is
all about!

Suppose that you are looking at the Game Keeper house or
Forest Ranger, if you really have it in the eye you
follow this thought;

This house of average seems small compare to the distance
because of the farness #eloignement#.

And with practice you will find at what distance
MUST be situated a house of this size to seem so
small, be seen under such a small angle.

If you want to fix the angle of your eye compass, the
most simple means and way to do so, is the one that you
use to #fixe# the opening of an angle on a compass.

For ex; 1cm. -- But under the condition that you
indicate, show, the length of the compass' branches;
for ex; 25cm. The angle measure is = 1cm to 25cm.

That same angle of your eye compass equally measures 2cm
to 50cm or 2m to 50m; 20 to 500m....

It   is   perfectly   defined by the equal   reports
between (width/distance)#*;2/50cm.--2/50m.-20/500m 1/25.

For this angle, the distance ALWAYS will be equal to 25
times the width of the observed building or object = X 25.

This is done in order to better our eye compass so as to
be able to indicate with precision the apparent angle of
the object under observation under the form or the

proportion* (width/distance) of this angle.

REMEMBER that holding a pen at arm length is approximately
at 50 cm from your eye. 1 cigarette is 7cm. Thus if you
grade in 1/2cm you will be able to define the # angle de
rapport# 1/100.

You MUST create the habit to use fluently the angles of
1/100 and their #multiples# that are more practical,
useful for us.

The ruler or better the #grill# (where each square being
fixed in width & height of #angle de rapport# of 1/100)
will give us more precise indications.

A ruler divided in "cm and mm" * held at 50cm from
the eye (string fixed to a button held between the teeth)
gives between each 1/2cm and angle of 1/100 and between
each * MM., an angle of 2/1000 or 0.2/100

An angle of 1/100 = 0 degree 34' or 0.5gr. and angle of 10
degree gives approximately a #rapport# of 18/100

The angle of a slope is usually given in % (a slope that
rises of 1m per 100m gives an angle of 1/100 in
relation with the horizon).

The height of the eyes is sensibly equal to a double
usual foot step so in order to make an horizontal aim at
the eye's height just walk till the aim #visee meets the
slope (pente)# thus you will obtain a number of double
step: 100/X -- angle in % (--in 1/100).

ARMY EVALUATION DISTANCES:

In the German army the rules given to judge the distances are:

At 50m: One sees clearly they mouth and eyes of a man. /
At 100m: The eyes look like dots. / At 200m: We still see
the buttons and the details of the clothing.

At 300m: We still distinguish the face of a man./ At 400m:
We see the legs moving. / At 500m. We still can
distinguish the colour of the uniform.

FAST MEANS TO MEASURE APPROXIMATELY UNREACHABLE HEIGHT:
(TREESBUILDINGS)

1st. METHOD:

Stick a tree at some distance from the tree foot. Aim
while leaning down the tip of the tree or building in such
a way as to see it coincide with the tip of the stick.

Move the stick if need be farther back. (Stick should be
at least 4-5ft.) The height will be S. X. D ./. O.

S =   Height of the stick.
D=   Distance between the eye and the foot of the tree.
O=   Distance between the aiming point and the stick.

VARIATION # 1:

If there is sunshine, we proceed in similar fashion by
placing the stick and in measuring the respective shadow
of the tree and of the stick.

The formula is similar: if AB the height of the tree to

measure, and if AC length of the tree's shadow measured
with a scaled rope, & ED the height of the stick, and
DF the length of the shadow's stick we thus obtain: AB =
AC X ED / DF.

VARIATION # 2:

Measure 18m. from the foot of the tree, fix a stick in the
ground at point 18m. then at 2m. from the stick, while
leaning on the ground. Aim at the tip of the tree so as
to be able to measure the height of #ligne de visee le
long du stick#; 10 times this height will give you
the height of the tree without further calculation.

The triangle base being 10 times greater than that of the
smaller one. (20m. & 2m.) Evidently the height to
measure will be 10 times the one of the #cursor above
ground.# (H=10h). *

NOTE: To gain time, we will move the #cursor# while
aiming using a helper, a friend. Place the aiming eye as
close to the ground as possible to get better reading.

2ND METHOD:

Place at the foot of a tree or against a building, an
object of known dimension, your walking stick for example.

Holding yourself at a distance at least the double
of the presumed height count using a pen held at arm's
length the number of units of the (stick) which would be
contained in the height to be measured.

NOTE: In reality the measured length is that of the

#arc de circle tangent to the object# being measured.

Thus we commit a small error but this one will be lessen
if we place ourselves higher than the base of the
object to be measured.

3rd METHOD:

Take a square paper a, b, c, d; fold it in the diagonal
CD, near C prick a needle E.*

Now join *AB by a string to which you will hang a stone
P.* If we hold the # viseur# by the needle, the CA side
will be vertical # (fil a plomb)# and the diagonal CD*
will make a 45 degree angle with the ground.

Aim the tip of the tree with the diagonal CD while going
forward or backward in order to spot (determine) A*.

Then measure the distance of that point to the foot of
the tree B*. Add to this distance the height of the eye
above the foot of the object to measure (*h) thus: AB =h = L*.

4th METHOD:

Place on the ground a vase full of water "M"* Place
yourself in such way that we see the summit "S"* of the
object to measure being reflected in the water in "M".

The law of reflection of light makes it that the angles X
and Y are equals. Now measure the distances A & B. Now
measure "h" height of the eye above the ground we obtain:
H= h X A ./. B.

NOTE: If a terrain is in slope this method is false.
         Don't use it.

DISTANCES:

The sound travels 330m. per sec. A far off noise that you
can see the visual start (Industrial whistle) permits us
to calculate immediately the distance by counting the
exact number of seconds that the sound takes to reach our ears.

In mountain the echo permits to measure very exactly the
distance of a rock face.

WIDTH OF RIVER: 1ST METHOD:

Plant a stick MAKING SURE that they are at exact right
angle #angle droits# Now on AC perpendicular to AP (AP-L)
takes a point B so that AB = BC.

Now aim PB & #prolonger.# The perpendicular in AC in C
#cuts PB in D# = AP = L ?#* See Pix 131*photo how to
built a #right angle /angle droit.#.

2ND METHOD:

Plant a stick A in front of #repere# * P situated on the
other side of the river.

Measure a perpendicular distance superior to 1/10 the
presumed width of the river then plant another peg B.

Back-up away from the river in the #alignment# of AP
on a distance of at least 1/4 of the presumed width of
the river the plant C peg. Plant a last peg D behind * B

in the alignment of P and perpendicularly to C.

The width of the river will be give by the formula:
L = AC X AB ./. CD-AB.

NOTE: The length CD-AB is very small thus it has
        to be measured very strictly.

3RD METHOD Napoleon's Hat:

Facing the other side of the river, lower your hat on
your face until the rim of your hat nearly hides the
aimed point on the other side of the river.

Then without moving your head, on the right or on the
left then find #repere# on your side of the river where
is #le point du terrain# seen at the rim of your hat.

In other word you carry over this distance across to your
left or right side to locate a fix, which would
represent the distance across to the other side of the
river. Now measure this distance from your feet to this
#point de repere.#

In flat terrain the length found is the width of the
river. A helper moving with a stick would permit to
quickly determine the distance D to measure.
If you check D = L.

HOW TO CONSTRUCT A RIGHT ANGLE ON THE GROUND:

We want to make at point B on a base AB a
#perpendicular vise /aim#.

1)   Mark B with a small peg*
2)   Fold in 2 a rope & mark its middle by a knot N*

3)   Put the ends of the rope to A & B, the distance AB
        being whatever you want. Stretch the rope thus tying
        farther the knot that you fix with a small peg.

4)   Bring the B end to point C so that ANC is an
      in straight line. The angle ABC is at right angle.