CHADWICK #7285 COMPUTER LIGHTER

(.10 - 1 - 10 - 100 - 1000 ETC.)

(HOURS)

(MIDDLE DIAL)

NAUTICAL
(MILE OR KNOT)

(TRIANGULAR
"10 MARKER"

(STATUTE MILE)

-60-OR 1 HOUR)

(INNER DIAL)

(MINUTES)

(OUTSIDE DIAL)

(KILOMETER)

PERPETUAL CALENDAR

Follow the simple instructions on the dial. It should be noted that there are two positions each for the months of January and February to compensate for Leap Years.

Example: Set the "BLACK" February over the year 61 and you will position February 1st. properly on Wednesday.

TIME - DISTANCE COMPUTER

This computer consists of three calibrated groups arranged in a circular fashion. We will refer to these scales as "outside", "middle", and "inner".

FOR KNOT, MILE, KILOMETER CONVERSIONS.

In the middle Dial to the Left and Right of the number 35 will be found the markings KT. for Nautical Mile, ST. for Statute Mile. The Marker KM. for Kilometer is located one point to the right of the large (1 hour) pointer.

For all computations and conversions, the top-center numeral on the outside (or fixed) dial is "10" which can be given the value of .10, 1, 10, 100, 1000 etc., and of course the result of the calculations should be taken in the appropriate value.

Please note that when "10" (or 1) is used for the conversion of distances -- that a Kilometer is less than a mile, therefore if you set the KM mark on 10, these 10 Kilometers would equal slightly over 6.2 miles (1 KM = .62+ Miles and 100 KM = 62+ Miles). By placing the "KM" of the middle dial opposite any number to be converted, the answer is found on the outside scale opposite the ST. (Mile) pointer; for Kilometer to Knots, read the value opposite the KT. pointer.

In the case of a KNOT, which is more than a mile - your answer is always to the right. Example: Set the "KT" on 10 and the "ST" indicates 11.5 Miles, (1 KNOT = 1.15 Miles. 100 Knots = 115 Miles). In reverse, with other numbers, (as an example): Place the "ST" (or Mile) on 15 and the result is slightly over 13 Knots (150 Miles = 130+ Knots) etc. and for Kilometers 15 Miles would equal 24 Kilometers. This also illustrates that you can also convert Knots to Kilometers etc. without reference to Miles, ei: 13 Knots equals 23.80 Kilometers. The change of .20 Kilometers is due to a slight adjustment to exactly 13 Knots.

TO COMPUTE TIME AND DISTANCE

The middle dial represents minutes, the inner dial indicates hours, the outside dial represents "Miles" or "Knots", or "Kilometers" or "Gallons" -- per hour depending on the problem on hand.

A simple example: Distance covered at 100 Miles per hour. Set the 1 hour pointer at 10 of the outside scale (this now represents 100 miles). Clockwise on the middle scale - in 12 minutes - you would cover 20 miles - just under the 12 but on the "inner" scale is 2:00 hours. Therefore in 2 hours at 100 MPH the 20 is read as 200 Miles. If the elapsed time were 2 hours and 15 minutes, you would read the 2 hours as 200 miles (from the inner scale to the outside scale) 15 minutes from the middle scale would equal 25 miles on the outside scale, therefore 2:15 = 225 miles. To find "time" when speed and distance is known, the same settings are used but "read" in reverse. Similarly, if distance and time were known - rate of travel would be found.

MULTIPLICATION AND DIVISION

Above the numeral "10" on the Middle Scale is a small triangular mark. For basic multiplication this numeral is given the value of either .10, 1, 10, 100, 1000, etc. Whatever value that is applied, it would of course, be carried completely around the dial. If this point (10) is 1, then 14 is 1.4 and 20 is 2, 50 is 5, 60 or 6 is the one hour pointer; but numbers 7, 8, 9 are, as represented. If 10 were 10, then all numbers are, as shown, except 7, 8, 9 which would be 70, 80, 90, back to 10 which, now following 99, becomes 100.

To Multiply, place this "10 marker" opposite the number on the "outside" scale that is to be multiplied. The MULTIPLICANT IS THE numeral on the middle scale and the total is that quantity on the "outside" scale opposite the multiplicant. Ex: Place pointer at 15; 2 = 30, 4 = 60, 8 = 120. Here at 15 x 8 an "0" is added to the "12" as we went beyond the 10, which would now have the 100 value. Another example: 18 x 2: place the "10 Marker" (which in this multiplication has the value of 1) opposite 18 on the outside scale, the figure on the outside scale opposite the 2 (as explained above is shown as 20) provides the answer = 36. If you multiplied 18 x 20, your answer would be 360.

Division is simply a reverse of this procedure; 360 divided by 20 --- Line up the "360" on the outside scale by the divisor 20 and the answer is found opposite the "10 marker" - 18.

A typical use: You traveled 500 miles and use 21 gallons of gasoline. Place 21 of the middle scale opposite 500 (50) of the outside scale. The miles per gallon of 23.8 is found on the outside scale opposite the small triangular index on the middle scale referred to as the "10 marker".

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