



BREITLING

1884

B-1



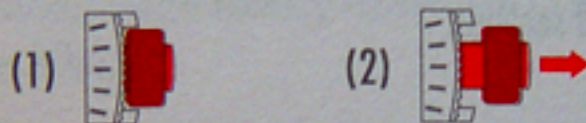
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We congratulate you on acquiring a quality product combining high technology and harmonious aesthetic appeal. To enable you to make optimal use of all the possibilities afforded by this exceptional watch, we invite you to read the following instructions for use most carefully. Following certain rules regarding maintenance and care of your watch will enable you to enjoy its potential to the fullest. This brochure also contains some tips in this area and we recommend that you take this advice in order to preserve all the technical and aesthetic qualities of your watch for as long as possible.

General handling principle

The different functions are selected by rotating the crown. The latter has two axial positions: neutral (1) and pulled out (2).



In the neutral position, rotating the crown enables you to move from one function to another. The crown may be turned forwards (clockwise) or backwards (anti-clockwise).



A brief push on the crown lights up the two digital displays for around 6 seconds. The seconds hand then stops momentarily as an energy-saving measure.

N.B. The type of display used is compatible with night vision goggles.



The watch has two pushpieces (A and B) whose action is linked to the function selected. According to the desired action, the wearer should press the appropriate one



briefly

or

hold it for 2 to 3 seconds.



Pushpiece A: selection of special functions AM/PM, ON/OFF, START/STOP



Crown: backlighting of display by pressing, selection of functions by rotation (position 1); functions setting or choice of language by rotation (position 2).

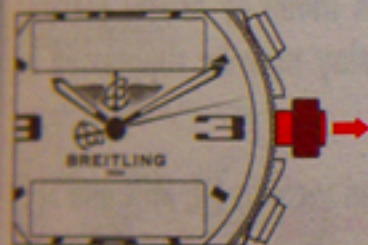


Pushpiece B: selection of digits for setting operations (H-MIN-SEC), audible confirmation signals, alarm tests.

SELECTION AND ADJUSTMENT OF FUNCTIONS

1. Synchronization of analog and digital display

The time indicated by analog display (hands) and that indicated by digital display must be perfectly synchronized. Should the two displays become desynchronized (battery change, shock) the analog display (hands) must be adjusted to the digital indication as follows:



Select the neutral position then pull crown out to position 2.

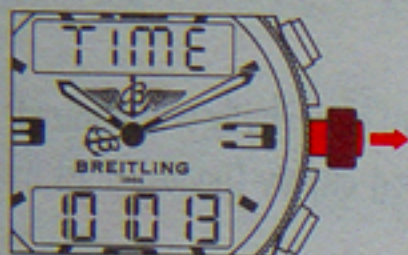


Press pushpiece B briefly: the hours, minutes and seconds (H, MIN and SEC) of the display each flash in turn.

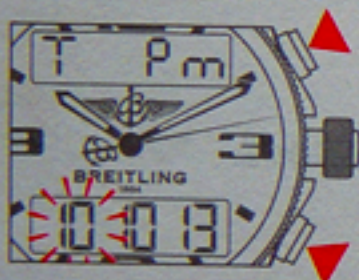


The respective synchronization of analog H, MIN and SEC (hands) is done by rotating the crown. N.B. The SEC only move clockwise. Push the crown back in to position 1.

2. Setting the time



Select the **TIME** function, then pull the crown out to position 2.



The time may be displayed in 24H or AM/PM mode by briefly pressing pushpiece A. In AM/PM mode, the upper display may be suppressed by pressing A.

Press pushpiece B briefly: the hours, minutes and seconds (H, MIN and SEC) of the display flash in turn.



Respective adjustments of H, MIN and SEC are made by rotating the crown. Push the crown back to position 1.

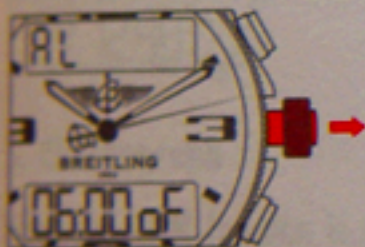
3. Alarm



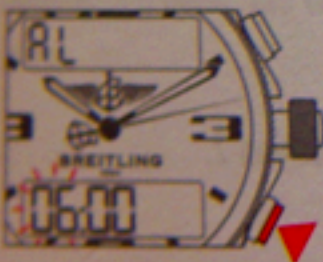
ON/OFF alarm indication.

Alarm test.

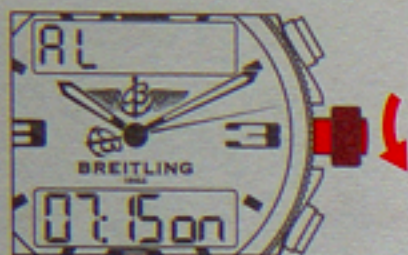
Adjustment



Select **AL** position, then pull crown out to position 2.



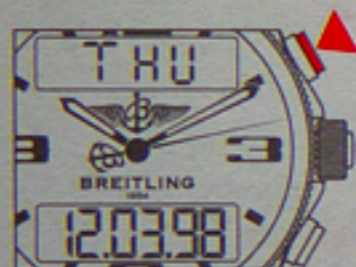
Press pushpiece B briefly: the H and MN of the display flash in turn.



The respective adjustments of the H and MIN of the alarm are made by rotating the crown. Push the crown back to position 1. The alarm is activated.

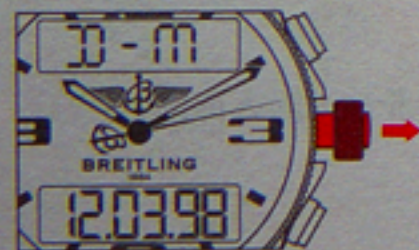
The alarm can be stopped by pressing one of the pushpieces or the crown.

4. Date

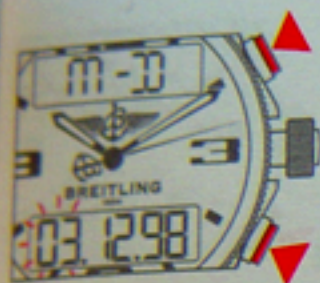


Press A briefly: display or suppression of day.

Adjustment



Select the **DATE** function, then pull crown out to position 2.



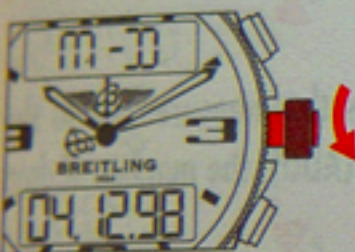
Press pushpiece A briefly: choice of day-month or month-day display.

Press pushpiece B briefly: the date, month and year, (or the month, date and year) flash in turn.

The respective adjustments are made by rotating the crown.

Push the crown back to position 1.

The calendar is programmed up until the year 2100. To change the language of the calendar, see point 11.



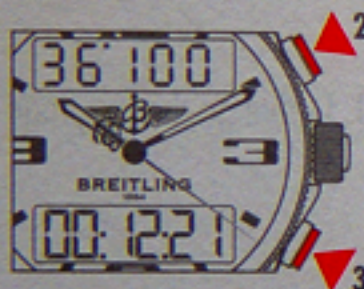
5. Chronograph

When the **CHR** function is selected, the seconds hand moves automatically to 12 o'clock and becomes the chronograph hand. The seconds hand resumes its normal function when the chronograph function is no longer in use.

A. Single short time measurement



Chronograph started.



Chronograph stopped: upper display indicates the measurement to the nearest 1/100th of a second and alternatively (ADD), the number of days elapsed.

Return-to-zero.

B. Short time measurement with split time

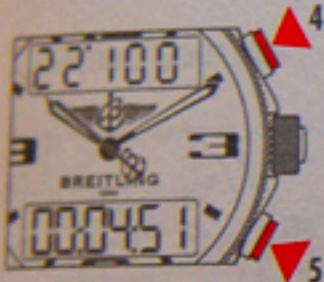


Chronograph started.

Split time (SPL).



The chronograph catches up with the time elapsed since the stop.



Chronograph stopped (ADD).

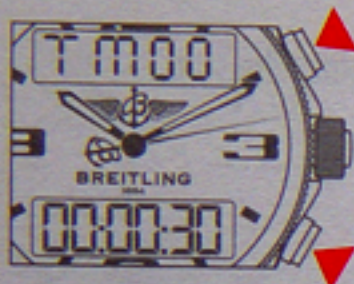
Return-to-zero.

C. Synchronization of seconds hand



If the seconds hand is not precisely positioned at 12 o'clock in **CHR** mode, pull the crown out to position 2 and turn forwards to reposition the hand at 12 o'clock. Push the crown back in to position 1.

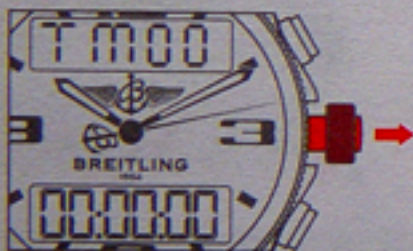
6. Countdown timer



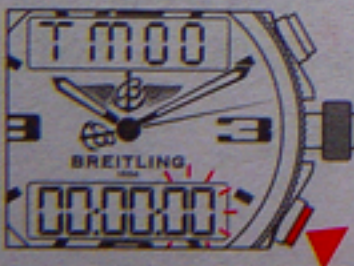
Start, stop.

Recall of previously selected time.

Adjustment



Select **TM** function, then pull crown out to position 2.

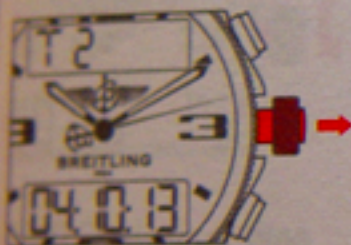


The days (max. 99 days) on the upper display flash and pressing pushpiece B briefly makes the H, MIN and SEC on the lower display flash in turn.

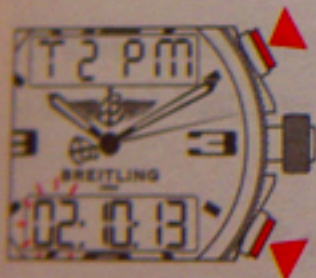


The respective adjustments of the days, H, MIN and SEC is done by rotating the crown. Push the crown back to position 1.

7. Second timezone

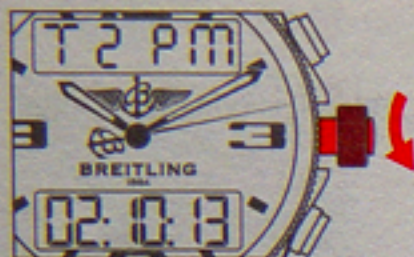


Select **T2** function, then pull crown out to position 2.



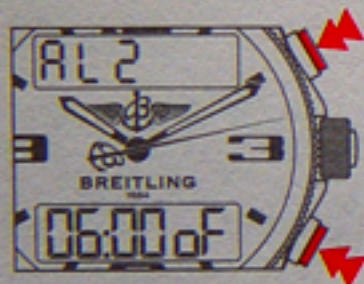
The time may be displayed in 24H or AM/PM mode by briefly pressing pushpiece A.

Press pushpiece B briefly: the H and MIN flash in turn.



Their respective adjustments can be done by rotating the crown.
N.B. Minutes are corrected in 15-minute increments in order to correspond to the timezone divisions applying in certain regions of the world. Push the crown back to position 1.

8. Second timezone alarm



ON/OFF alarm indication.

Alarm test.

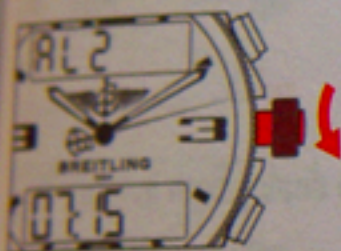
Adjustment



Select function **AL2**, then pull crown out to position 2.



Press pushpiece B briefly: the H, MIN displays flash in turn.



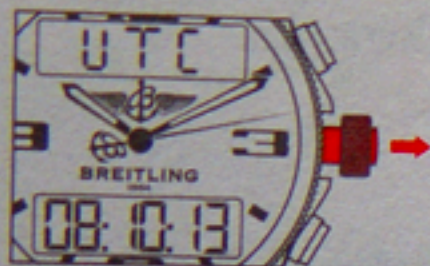
The respective adjustments of H and MIN on the alarm are done by rotating the crown. Push the crown back to position 1.

The alarm can be stopped by pressing one of the pushpieces or the crown.

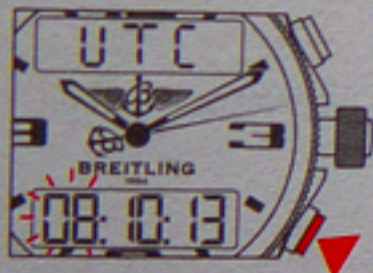
9. UTC universal time

UTC universal time (Universal Time Coordinated) is intended to harmonize worldwide air traffic. It corresponds to Greenwich Mean Time (GMT).

Adjustment



Select **UTC** function, then pull crown out to position 2.



Press pushpiece B briefly: the H and MIN on the display flash in turn.



Their respective adjustments can be done by rotating the crown.
N.B. Minutes are corrected in 15-minute increments. Push crown back to position 1.

10. Choice of audible confirmation signals

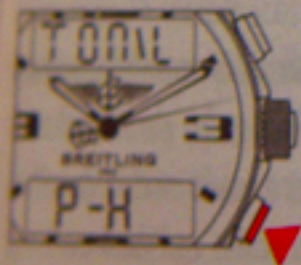
Four modes of audible signals may be programmed:



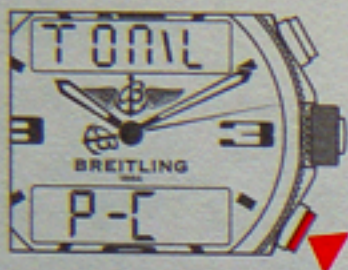
Select **TONL** function. Lower display empty: no audible signal.



P appears in lower display: audible confirmation signal each time pushpieces are pressed.



P-H appears in lower display: audible confirmation each time pushpieces are pressed + hour pips.



P-C appears in lower display: audible confirmation signal each time pushpieces are pressed + hour pips for time being measured.

11. Selection of calendar language



Language selection is done in **TONL** position by rotating the crown in position 2. Four languages are available: French (FRA), German (DEU), English (ENG), Spanish (ESP). Push crown back to position 1.

12. Rotating bezel with slide rule

The bidirectional rotating bezel is equipped with two independent scales, one on the outside, and the other on the inside. The outside scale can be used as a visual countdown or timer, while the inside scale, combined with the graduated watch dial, constitutes the circular slide rule. Instructions for the latter are explained in detail in the explanatory leaflet attached to this instructions booklet. Please note that the two scales on the bezel are independent and not synchronized and thus do not move at the same rhythm when the bezel is rotated.

13. Useful information

Battery: battery life varies between 2 to 3 years, depending on the intensity of use of various functions (particularly audible alarms and backlighting). The battery EOL (end of life) warning ensures the battery is changed in good time. EOL shows up in the neutral selection by the EOL indication appearing on the upper display and flashing displays for the other functions selected.

Watertightness: the BREITLING B-1 can withstand pressures of up to 5 bars, corresponding to a depth of 50 meters (165 ft). The pushpieces and crown must never be operated under water. Each time they have been immersed in sea water (salty) or a swimming pool (chlorinated), the watch and metal bracelet should be rinsed under running water. Before being immersed in water, it is essential to check that the crown is pushed back into position 1.

Because the watertightness gaskets are frequently subjected to numerous aggressions (dust, damp, perspiration, temperature differences) the water resistance of a watch is limited over time. Therefore, if the watch is used intensively in water, all water resistance gaskets should be replaced once per year during a maintenance service. If only occasionally in contact with water, this operation should be carried out every two years, or at the latest when the battery is changed. The conditions in which it is worn chiefly determine the duration of life of the gaskets and thus the water resistance of the watch over time.

Precision of rate: the typical precision of this instrument is around 5 seconds per month. It may be affected by significant variations in temperature or a violent shock.

14. Maintenance

As with all valuable objects, BREITLING watches and chronographs deserve particular care.

- We recommend that the case and metal bracelet be regularly cleaned to ensure they are not clogged up by dust or perspiration, which can lead to skin irritation and in the long term even to oxidation of the steel. To eliminate this unwanted dirt, use a toothbrush and a soft liquid soap and then rinse the watch and metal bracelet under fresh running water before drying them with an absorbent cloth. The special B-1 caseback can be washed using a powerful stream of air or water, or by suction.
- To ensure that it continues to operate smoothly and remains as attractive as ever, the watch must also be regularly sent to an authorized BREITLING technical center for a maintenance service. Your BREITLING dealer will be pleased to handle this for you.

To be avoided at all costs:

- Shocks: normal sports activities will not affect the watch. However, you should avoid dropping it or knocking it against hard objects.
- Chemical products: the watch should not be worn in the vicinity of chemical products, solvents or dangerous gases. If the watch comes into contact with a product such as petrol, thinner, nail polish, perfume, cosmetics, glue or paint, the case or bracelet may be damaged or discolored.

- **Powerful magnetic fields:** avoid exposing the watch to powerful magnetic fields such as a magnet; magnetic fields emitted by household appliances and office equipment will not affect it.
- **Extreme temperatures:** avoid protracted direct exposure to the rays of the sun. Temperatures above 60°C may cause the watch to stop functioning properly, particularly the battery. Extremely low temperatures may lead to significant variations in rate. BREITLING watches are designed to provide optimal performance within a temperature range from 0°C to 50°C .



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INSTRUCTIONS FOR
THE USE OF THE SLIDE RULE

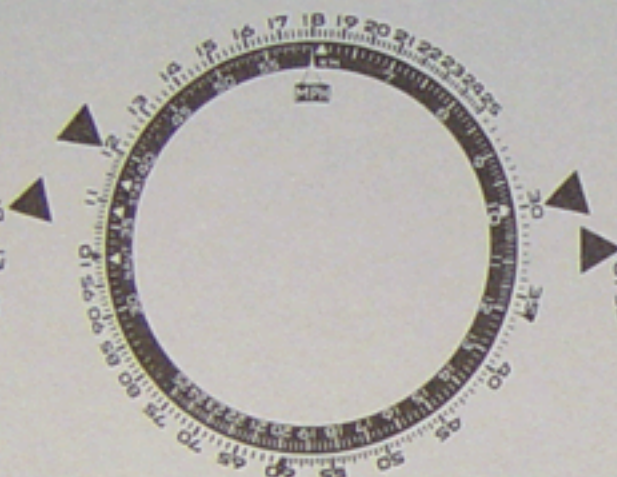


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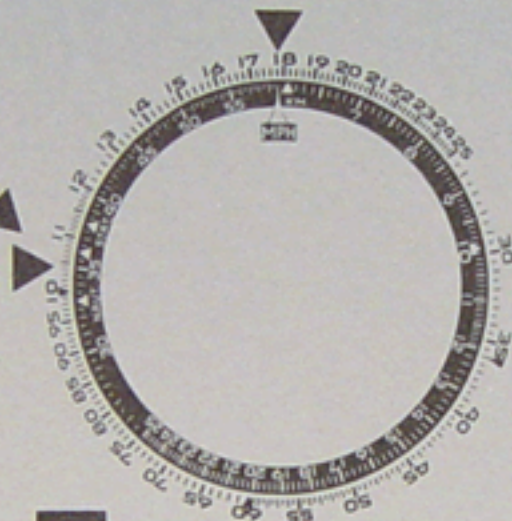
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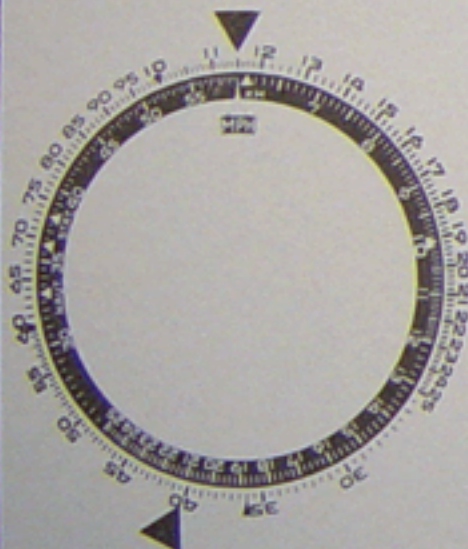
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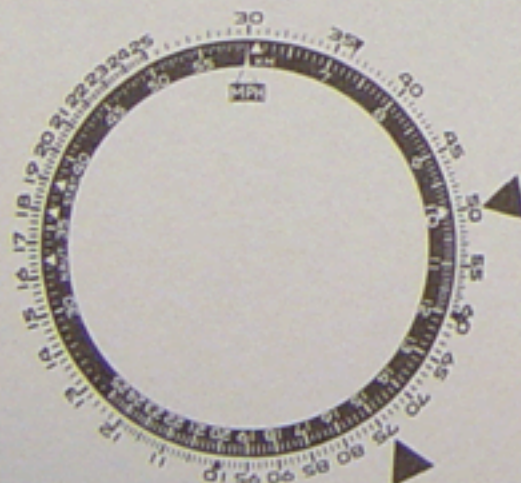
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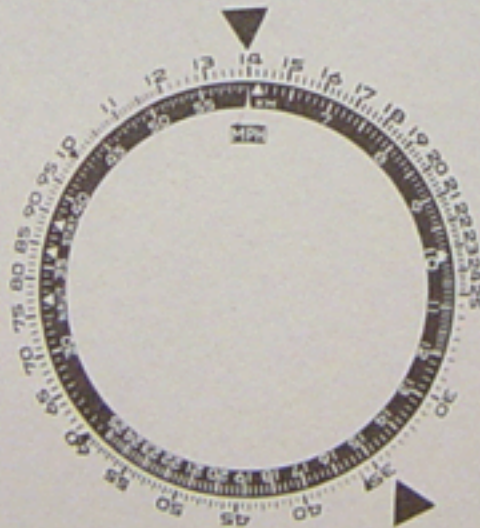
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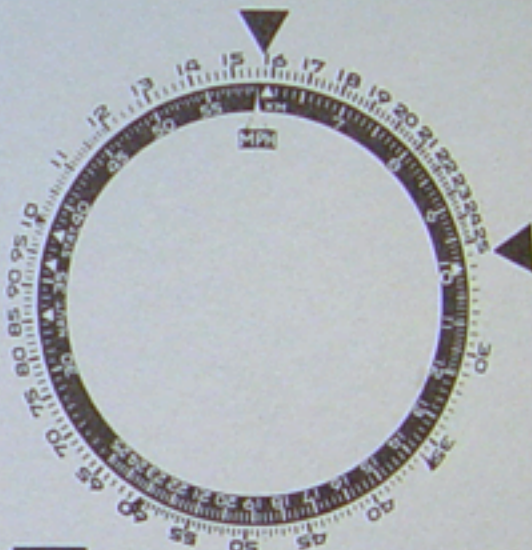
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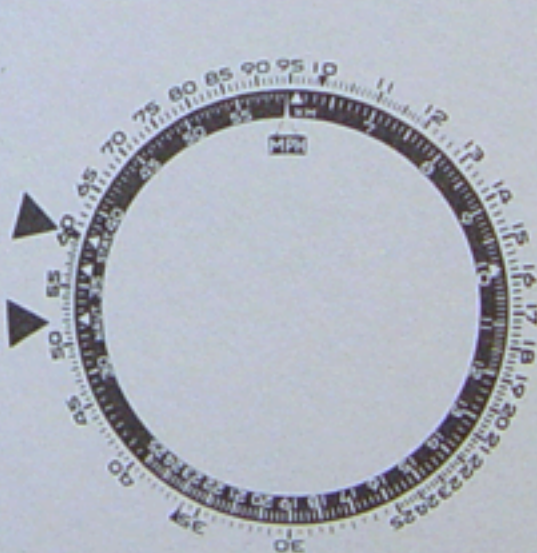
4



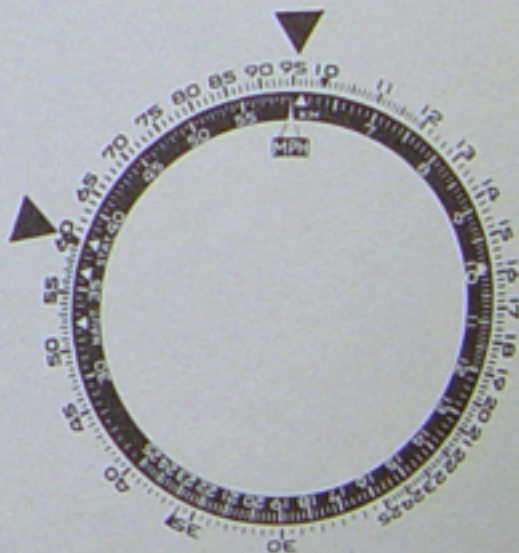
5



9



10



SLIDE-RULE

The computer portion of the watch will require a little time and patience to master, if the pilot is unfamiliar with standard flight computers. It is actually a circular slide rule and will make accurate computations involving multiplication and division in terms of time, distance, fuel consumption and other normal flight and navigation computations dealing with speed, time and distance.

Inspection of the watch will reveal that there is an outer scale on which will be found numbers running from 10 to 10 (the figure «10» may be 1.0, 10., 100.). On the outer perimeter of the dial of the watch is a second similar scale. Note that the outer scale will always be related to miles, or miles per hour, feet, or feet per minute, gallons, or gallons per hour, or any quantity which varies with time. The inner scale deals with minutes or

hours in all problems involving time. At 60 minutes on the inner scale there is an arrow which is marked «MPH». This is sometimes known as the «ground speed index» or «hour index». This index is used in problems involving any quantity per hour.

To multiply with the Navitimer use the unit index (number «10» in red on the inner scale). Always set the multiplier (the number by which another is multiplied) opposite the unit index on the inner scale and read the answer on the outer scale opposite the multiplicand (number to be multiplied by another) appearing on the inner scale.

Example 1

To multiply 7×12 , set 12 (the multiplier) on outer scale opposite unit index («10») on the inner scale. Opposite 7 (the multiplicand) on the inner scale, read the answer 84 on the mobile dial.

To divide with the Navitimer also use the unit index (red 10). Place the dividend (the quantity to be divided by another number) on the outer scale opposite the divisor (quantity by which another is divided) on the inner scale. Opposite the unit index (numeral «10» on inner scale), read answer on outer scale.

Example 2

Divide 120 by 4. Place 120 on outer scale opposite 4 on the inner scale. Read answer, 30, on outer scale opposite unit index (numeral «10» on inner scale).

The mobile outer and fixed inner scales are used for determination of ground speed problems. Two of the following quantities are available for its solution: time, distance, ground speed.

Example 3

Known: Distance and Time.

Required: Ground speed.

A pilot finds by the use of check point that he has travelled 104 miles in 35 minutes. What is the ground speed?

Solution: Move the mobile scale until 104 on the mobile scale is set opposite 35 on the fixed scale. Opposite the hour index (the arrow marked «MPH» directly over the hour 12) read 178 miles per hour on the mobile scale.

Example 4

Known: Distance and speed.

Required: Time.

A pilot wants to know how long it will take to go 486 miles at a ground speed of 156 miles per hour.

Solution: On the mobile scale set 156 opposite the hour index on the fixed scale. On the inner scale opposite 486 on the mobile scale read 187 minutes (or 3 hours and 7 minutes).

5**Calculating miles per minute**

This may be read after the speed in miles per hour has been obtained. The speed given in miles per hour on the mobile scale when set opposite the hour index on the fixed scale can be readily converted into miles per minute by reading the number on the mobile scale appearing opposite the figure «10» on the fixed scale. The figure «10» is often referred to as the unit index.

Example 5

In Example 4, the ground speed was 156 miles per hour. With the 156 on the mobile scale set opposite the hour index, what is the speed in miles per minute?

Solution: With 156 miles on the mobile scale set opposite the hour index read the speed in miles per minute, or the figure on the mobile scale which appears above the figure «10» on the fixed scale which is 2.6 miles per minute.

There are times when a pilot may want to know the time required to travel a short distance, such as the distance from the cone of silence to the edge of an airport, or between the inner marker and range station. Since the distance is short, the time required may be less than a minute, in which case the time has more significance when expressed in seconds. In such cases the «second» index is used. This is the figure «36» on the inner scale (there are 3600 seconds in an hour).

6

Calculating gasoline consumption

Two of the following quantities are available for gasoline consumption problems: Total gallons used, time, rate of consumption.

Example 6

Known: Time and rate of consumption. **Required:** Total gallons used.

A pilot wishes to know how many gallons are necessary to fly $3\frac{1}{2}$ hours at an average rate of consumption of $11\frac{1}{2}$ gallons per hour.

Solution: Opposite the «hour index» set 11.5 on the mobile scale. Then, opposite 210 minutes on inner scale on the mobile scale read 41 gallons.

Two of the following quantities are available for solution: total altitude of descent, time and rate of descent (or climb).

Example 7

Known: Rate of ascent and total elevation in ascent. **Required:** Time. A pilot climbs to 7400 feet above his starting point at the average rate of 500 feet per minute. How long will this require?

Solution: Set 500 on the mobile scale opposite the «unit index» («10» on the fixed scale). Opposite 7400 on the mobile scale, read answer, 14,8 minutes on the fixed scale.

Two of the following quantities are available: Distance, time, speed. The method used in examples 4 and 5 should be used.

Example 8

The pilot in example 7 wishes to know how far he will have travelled when his climb is finished. His average true air speed is 120 miles per hour and he is aided by a tail wind of 20 miles per hour.

Solution: Set 140 miles per hour ($120 + 20$) on mobile scale opposite «hour index» on fixed scale. Opposite 14.8 minutes (computed from example 7) on fixed scale read 34.5 miles on mobile scale.

On the fixed scale both nautical (Naut) and statute (Stat) miles are shown, also kilometers (KM) (red mark just to the right of MPH).

The conversion from statute to nautical or nautical to statute miles is read directly on the mobile scale.

Example 9

Known: 60 statute miles.

Required: Nautical miles.

Solution: Set 60 on mobile scale opposite «Stat» on fixed scale. Opposite «Naut» on fixed scale, read 52 nautical miles on mobile scale.

Example 10

Known: 60 statute miles.

Required: Kilometers.

Solution: Set 60 on mobile scale opposite «Stat». Opposite the «KM» mark (= the red mark, just to the right of «MPH» on the fixed scale), read 96.5 kilometers on mobile scale.