



**TAGHeuer**  
PROFESSIONAL TIMING

**Global Solution  
for  
Athletics**







# TAGHeuer

PROFESSIONAL TIMING



## **A new and unrivalled Timekeeping Total solution.**

Today, TAG Heuer more than ever confirms its status as the reference in the universe of motor racing. From Jo Siffert to Kimi Räikkönen and Lewis Hamilton, from Scuderia Ferrari to Vodafone McLaren Mercedes, from FIA F1 to Le Mans and Indy 500, TAG Heuer's historic partnerships with the greatest, finest and fastest events, teams and drivers in motor racing are unparalleled in the world of timekeeping.

TAG Heuer's involvement is stronger than ever: the reference standard for high-level sports chronographs and timing instruments since 1860 has joined forces with Chronolec, a leader in the transponder market, to push timing technology to a new extreme of precision and offer a "Timing complete products platform and solutions" to the most prestigious sports .

Partnering with Chronolec represents a bold new step in TAG Heuer's relentless pursuit of the ultimate in precision timekeeping. Both brands and expertises are a perfect fit. Chronolec provides cutting-edge transponder technology to prestigious and utterly complex events such as the 24 Hours of Le Mans and the Le Mans Series Championship. Coupled with the TAG Heuer peerless heritage — Official timekeeping instruments for the Olympic Games in the 1920s and again in the 1980's at Moscow and Lake Placid, Official Timekeeper of the Scuderia Ferrari from 1971 to 1979, Team McLaren Official Timekeeper since 1985, the F1 World Championship from 1992 to 2003 at the 1/1000th of a second, the Indy Racing League from 2004 to 2006 and the Race of Champions since 2005 at the 1/10.000th of a second — together, TAG Heuer and Chronolec are going to bring about impressive innovations in the world of timekeeping.

The TAG Heuer–Chronolec partnership agreement is the first collaboration of its kind in the world, and demonstrates the determination of two superlative timekeeping specialists to combine forces and push again the frontier of timing technology .

Thanks to its partnership with Chronolec, TAG Heuer has drawn up all its timing know-how and professionalism to produce unique timing total solutions, combining ultimate precision and unsurpassed reliability. All of them are modular and expandable and will satisfy the most demanding timekeeping requests, confirming TAG Heuer's extensive knowledge and experience in the field of highly precise time measurement for sport.

They are an invitation to the constant quest for ultimate precision.



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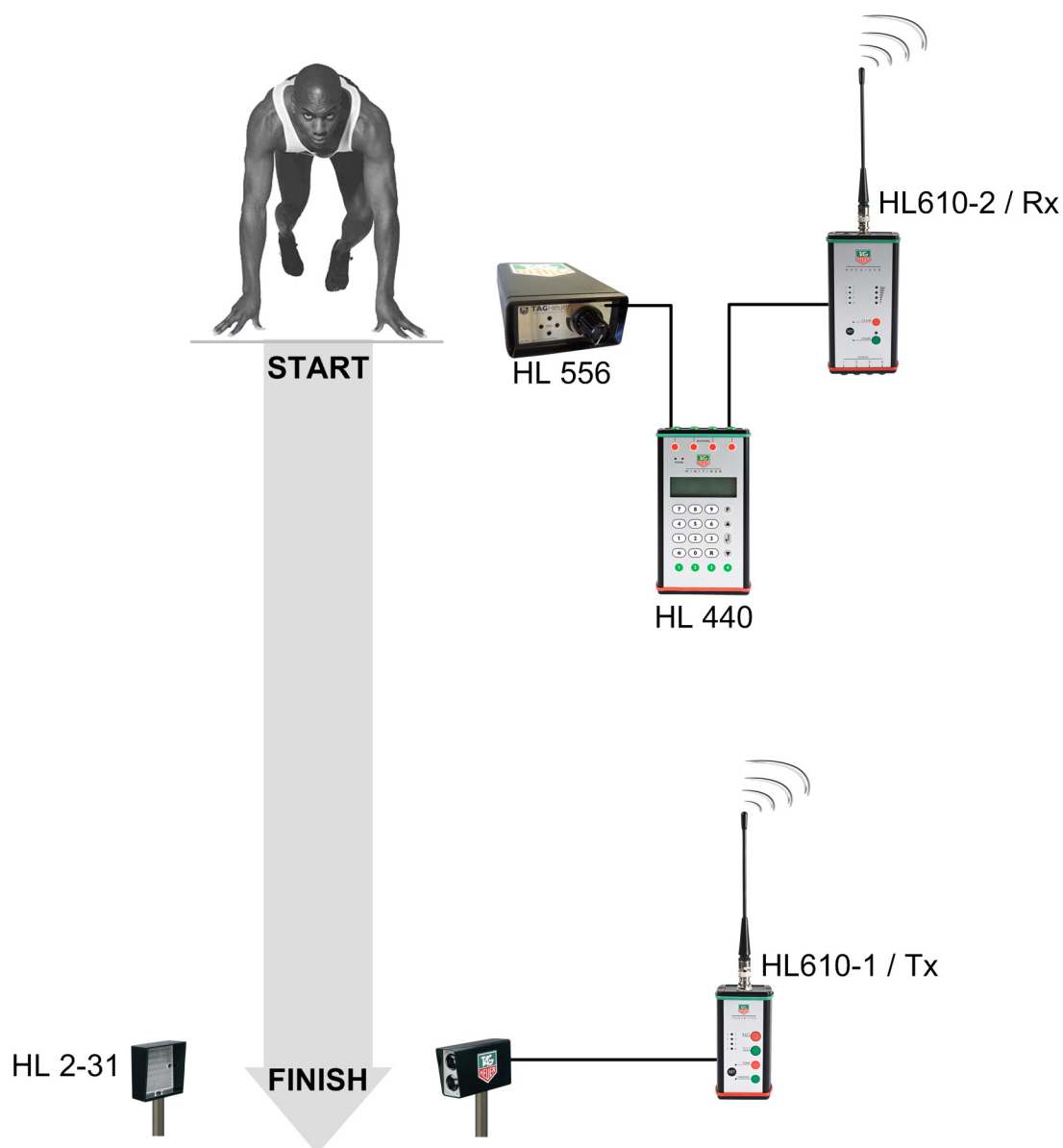


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## Athletics Basic Training Solution

- Minitimer HL 440
- Photocells HL 2-31
- Noise detector HL 556
- Radio Impulse (10mW) HL 610





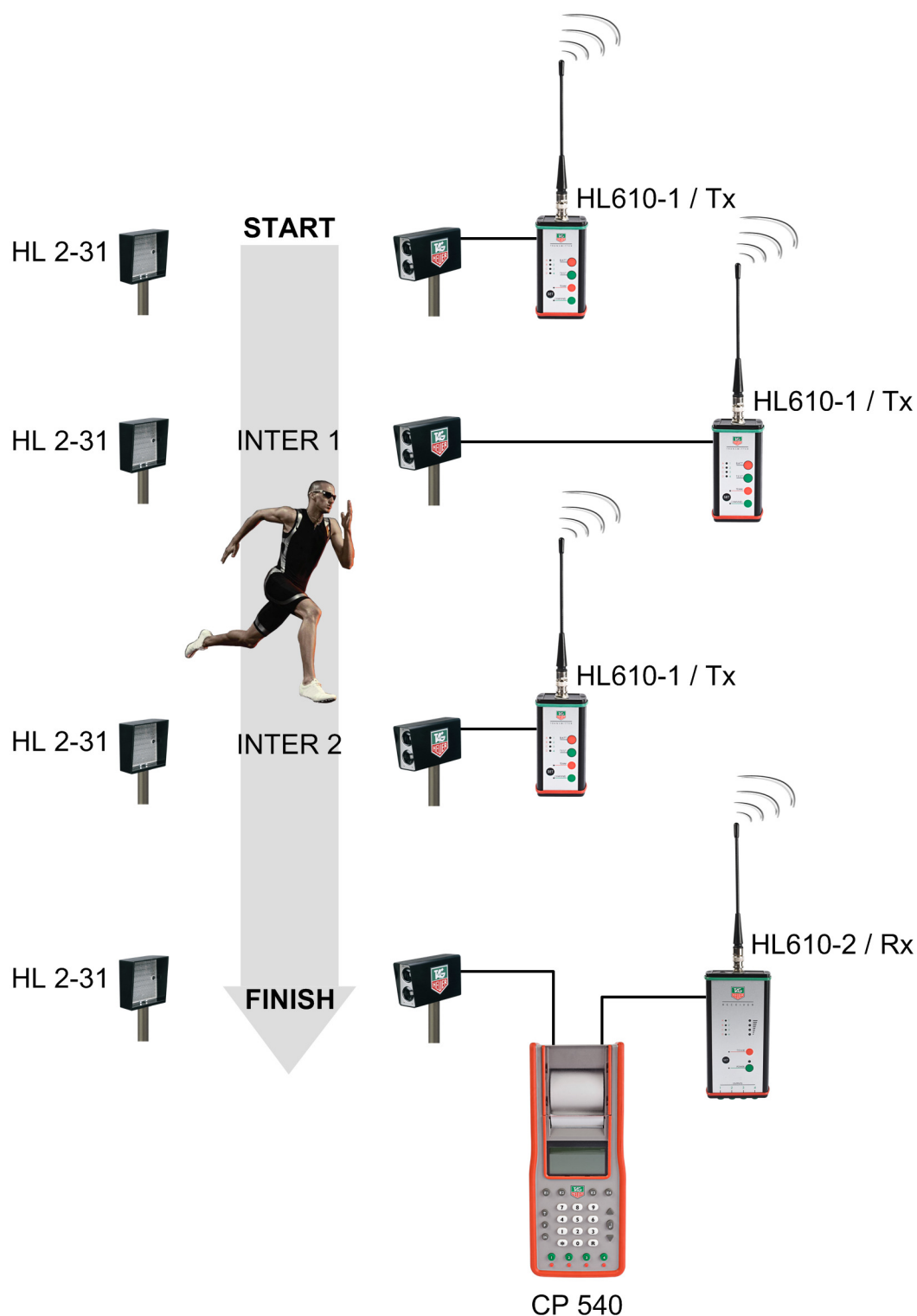


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## Athletics Advanced Training Solution

- Chronoprinter 540
- Photocells HL 2-31
- Radio Impulse (10mW) HL 610





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# CHRONOPRINTER CP 540





# Chronoprinter CP 540

## **“Innovation and avant-garde give rise to excellence”**

TAG Heuer has gathered all its timing know-how and professionalism to produce this new timing device, resolutely dedicated to the future, combining high technology and precision.

The CHRONOPRINTER CP 540 is the culmination of many unique design advantages, confirming TAG Heuer's extensive knowledge and experience in the field of highly precise time measurement for sport.

### **FLEXIBILITY**

The numerous integrated timing modes such as NET TIME, PARALLEL SEQUENTIAL or PARALLEL, TRAINING, SPEED, LAP, SPLIT/LAP will satisfy the most demanding timekeeper. The CP 540 is able to accommodate the majority of sports disciplines operating as a stand-alone unit.

When connected to a PC running TAG Heuer's extensive range of race management software, it is also the ideal time base for all professional sports-timing.

### **PRECISION**

The CP 540's precision time base and buffered inputs guarantee measurements accurate to 1/100,000 of a second.

### **SIMPLICITY**

The hallmark of TAG Heuer timing philosophy. The operator has only a few essential keystrokes to master. Mistakes are kept to a minimum, and recovery from errors quick and painless.

### **COMFORT**

The large graphic LCD display with backlighting affords very clear vision of the timing information in all situations. The ergonomic, intuitive, snap-action keyboard provides well-spaced and extremely precise keys. The timekeeper will easily navigate the keyboard, even with gloves on.

### **DESIGN**

The originality of the design of the CP 540 is obvious. The choice of the materials with its robust ergonomics have been carefully studied and developed for durability in any environment.

### **EXPANDABILITY**

The CP 540 can be programmed with future and even custom timing modes through its exclusive bi-directional connection with a PC.

### **DOCKING STATION**

Three docking stations are available: « ACCU », « ACCU + GPS » and « ACCU + GPS + GSM »

## **CP 540 – TECHNICAL SPECIFICATIONS**

### **General**

- Stand-alone multi-sport timing system
- Timing calculation (Speed) to the 1/1'600'000 sec.
- Timing resolution (Printer – PC) from 1 sec. to 1/100'000 sec.
- Memory of 25'000 times and 99 timing sessions
- Sequential Nr / Competitors Nr from 1 to 9.999

### **Time base**

- Thermo-compensated quartz 12.8 MHz
- Precision: +/- 0.5 ppm at 25° C
- Precision: +/- 1.5 ppm between -30°C and +65°C

### **Inputs / Outputs**

- Four Inputs with banana jack for Timing impulses
- COMPUTER / Bidirectional RS232 or to drive external display
- ETHERNET
- Extension port for Docking

### **Power supply**

- Internal: five alkaline 1.5V batteries (AA)
- External: 12 V DC by adaptor (HL540-1) or 12 V battery

### **Autonomy**

- 6'000 printed times with one battery set

### **Dimensions / Weight**

- 270 x 100 x 65 mm
- CP 540 without transport case: 860g. (with batteries and 1 paper roll)
- CP 540 with transport case and power supply : 1'800g.

### **Display**

- Matrix LCD display with backlighting
- Eight information lines with 21 characters
- Adjustable contrast and brightness



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# MINITIMER HL 440





# Minitimer

## HL 440

The Minitimer HL 440 is a professional timing system with 4 inputs using the same « high technology » as our Chronoprinter 540. It is an essential general-purpose timer for many applications.

The HL 440 is a very high precision “time base”, ideal to communicate bi-directionally with a computer.

With the integrated matrix LCD display the user is able to view all datas and informations.

The Minitimer can be connected to our Martel HL 200 printer to enable the printing of all sequential timing informations.

Thanks to the integrated keyboard, the HL 440 can be used at the start line of a race (Ski) as a numerical-keyboard to identify the competitor's number, which will be transmitted to the timekeeper with the complete timing information (PC or Printer).

It is also useful for events which do not necessarily require log printing of times (such as Jumping) and is also useful as a backup timer.

The Minitimer can be connected to a second system or to a Chronoprinter 540 to provide up to 8 input channels.

### Technical specifications

- |                                    |   |
|------------------------------------|---|
| • Timing resolution (printer – PC) | user selectable from 1 sec to 1/100'000 sec                 |
| • Memory                           | 30'000 times and 99 timing sessions                         |
| • Sequential N°/ competitor N°     | from 1 to 9'999   |
| • Inputs                           | Four banana jack inputs                                     |
| • Outputs                          | RS232 to PC<br>Printer                                      |
| • Display                          | Matrix LCD display  |
| • Time Base                        | Thermo-compensated quartz 12.8 MHz                          |
| • Precision:                       | +/- 0.5 ppm at 25° C<br>+/- 1.5 ppm between -30°C and +75°C |
| • Internal power supply            | Accumulator Li-ion  |
| • External power supply            | 12 VDC by adaptor (HL540-1) or 12 VDC Battery               |
| • Operating time                   | 38 hours (1 Impulse every 5 seconds)                        |



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# **PHOTOCELL 20m WITH REFLECTOR HL 2-31**





# Photocell with reflector

## HL 2-31

- Infrared reflector-type photocell with an exceptional quality/price ratio.
- For timing line widths of up to 20 meters.
- Internal battery power as well as a plug for external power input of 6-12 V DC.
- If the external power fails, the batteries assure proper operation of the photocell.
- Impulse output length adjustment.
- Two indicator lamps (LED) provide information on battery condition and photocell signal alignment.
- Installation of standard photographic tripods (1/4" mount) or on HL 4 mounting brackets.

### Recommended use

This photocell satisfies the highest standards of timing accuracy for the majority of sports applications.

In all cases, photocells that use reflector technology for timing sensing should not be employed whenever a risk of reflection from the object being timed exists.

### Technical specifications

#### General

- Infrared type photocell using a coded modulated frequency of 32.7 kHz. Triggering detection by frequency discrimination

#### Operating type and Distance limits

- Transmitter / Reflector, up to 20 Meters

#### Output Trigger

- Infra-red photocell with internal or external power supply and 2 functions modes:
- IMPULSE mode with adjustment of duration of the output impulse (standard mode).
- DIRECT mode with timing impulse which correspond to the breaking of the Infra-Red beam. This mode makes possible the control of the good functioning and alignment of the photocells.

#### Reaction Time

- Less than 0.5 ms

#### Precision

- $\pm 0,02$  ms for repetitive impulses

#### Internal Power

- Three alkaline batteries type 1.5V (AA)

#### External Power

- 6-12 VDC via 4-pole bayonet type jack.

#### Autonomy at 20° C

- About 100 hours

#### Operating Temperature

- $-20^{\circ}$  C to  $+70^{\circ}$  C

#### Indicators

- LED diodes for batteries and alignment.

#### Mounting

- Fitted for standard photographic 1/4" tripod or TAG Heuer mounting brackets HL 4 / HL 4-3

#### Dimensions

- Hot-lacquered black aluminium case 150 x 80 x 40 mm

#### Weight

- 500 gr. complete set  
All photocell sets are delivered in their own transport case



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# 10 mW IMPULSES TRANSMISSION SYSTEM HL 610





# 10mW Impulses Transmission System HL 610

TAG Heuer presents a revolutionary wireless transmission system at a very affordable price.

This new radio impulse transmission system offers decisive advantages for all timekeepers involved with training, testing or parallel (dual) events.

This innovative system HL 610 allows up to 4 simultaneous transmissions of timing impulses with only one receiver connected to the timer !

## Main features

- Low power transmission (10mW) for use without license (ISM band).
- Range of up to 1km in direct view. Depending of the topography, the range can be reduced.
- Up to 4 Teams are able to work in the same area without disturbing each other. Each Receiver can be programmed and receive the impulses of 4 Transmitters.
- Due to its low power (10mW), this system may be disturbed by other transmission systems

## Technical Specifications

### HL610-1 Transmitter :

- Lithium battery (up to 3 years of autonomy)
- 1 input for timing impulses (banana plug)
- 4 programmable channels (1 to 4) for identification of the transmitters
- Programmable Team codes (1 to 4)
- Acoustic signal for each transmitted timing impulse
- « BATT » key to check the status of the battery
- « TEST » key for transmission test
- Water-resistant aluminium case
- Dimensions : 132x57x32 mm
- Weight : 175gr

### HL610-2 Receiver :

- Rechargeable batteries (autonomy of 24h at 20°C)
- 4 opto-isolated outputs (banana plugs)
- Programmable Team codes (1 to 4)
- 4 LEDs to indicate the relative radio signal strength
- 4 LEDs to identify channel and team programming
- Acoustic signal for each received timing impulse
- Fixed repetitive delay of 100ms to the timer, with accuracy better than 1/10'000 sec.
- ON/OFF power button
- Water-resistant aluminium case
- Dimensions : 182x82x32 mm
- Weight : 380gr



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# Microphone Sensor HL 556

- The HL 556 sensor detects and converts a sound signal into Impulses. This device has an adjustable sensitivity threshold.
- This impulse generator is designed for to integrate with all TAG Heuer timing systems and adapt its application in each sport, sciences or industry.
- Connected to our Chronoprinter CP 540 or the Minitimer HL 440, this device is ideal to measure a reaction delay: the gap between a start signal (Start lamp etc..) and a pistol shot for example.



## Technical Datas:

- Sound detector with dynamic microphone.
- Adjustable detection threshold
- Power supply: 9V type 6LR61
- PVC casing IP54 with Screw-thread fixation: 1/4 inch (fits on our HL5 and HL4 series)
- Bandwidth: 100 to 10000 Hz
- Max sensibility at 1metre (3.3 feet) 55 dB
- Min sensibility at 1metre (3.3 feet) 105 dB
- Mounts on tripod



# Chronosplit HL 640

## Put precision and innovation in your pocket Personal wireless Timing System

With the new CHRONOSPLIT, now elite athletes and those who aspire to higher level will benefit from TAG Heuer's legendary experience and professionalism that guarantees the dependable and precise measurement of performance.

- The CHRONOSPLIT is a new concept timer. It allows automated wireless timing from remote sensors with memorization of up to 1000 times at 1/1000th sec. precision in up to 99 different timing sessions or runs.
- The CHRONOSPLIT automatically receives wireless radio timing signals from our new radio transmitters that are placed at the Start, Intermediate and Finish locations. These transmitters are driven by timing impulses generated by start gates, photocells or any other timing sensor.
- The Start, an unlimited number of intermediate or split times, and the Finish are all differentiated and sequentially recorded as separate sessions on the CHRONOSPLIT.
- These times can be recalled for immediate review on the integrated LCD screen or downloaded via a wireless/USB interface to a PC for further analysis.
- Each CHRONOSPLIT is carried by the athlete and can be worn around the neck, on a belt, in a pocket or even affixed on or in a vehicle. Regardless of how it is carried or installed it is always effective. Low operating consumption translates into months of use without battery replacement.

### Interface PC HL 640-2

- RF timing data transmission frequency: 868.992MHz

### Transmitter HL 640-1

- Operating Frequency: ISM band, 868,992 MHz
- Transmitter power 4mW, Antenna 1/4 wave. Imp. 50 Ohms
- Range: Up to 50m and better than 15m at 130 km/h
- Internal Lithium Battery
- Water resistant Aluminium case
- Dimensions: 132 x 57 x 32mm
- Weight: 175 grams



## Technical specification

### Chronosplit HL 640

- Memory for 1000 times at 1,1000th sec. Display resolution to 1/100ths sec. Up to 99 Sessions in Memory
- Quartz Precision: +/- 5 ppm
- Overall system precision better than +/- 0,5msec.
- Internal Battery Power AAA 1200mAh
- Battery Power Consumption in Auto Split / Auto Lap modes : 2mA
- Battery Power consumption in Standby mode : 20 µA
- Autonomy : about 100 days at 5 hours of timing per day.
- Operating temperature range : -15°C à + 60°C
- « Low Temperature » LCD display
- Battery state indicator
- Radio Impulse Indicator
- Download data Interface Indicator
- Choice of 4 different « Teams »
- Adjustable Individual watch ID number
- Sealed ABS red case
- Dimensions: 90 x 60 x 19mm
- Weight: 87 grams



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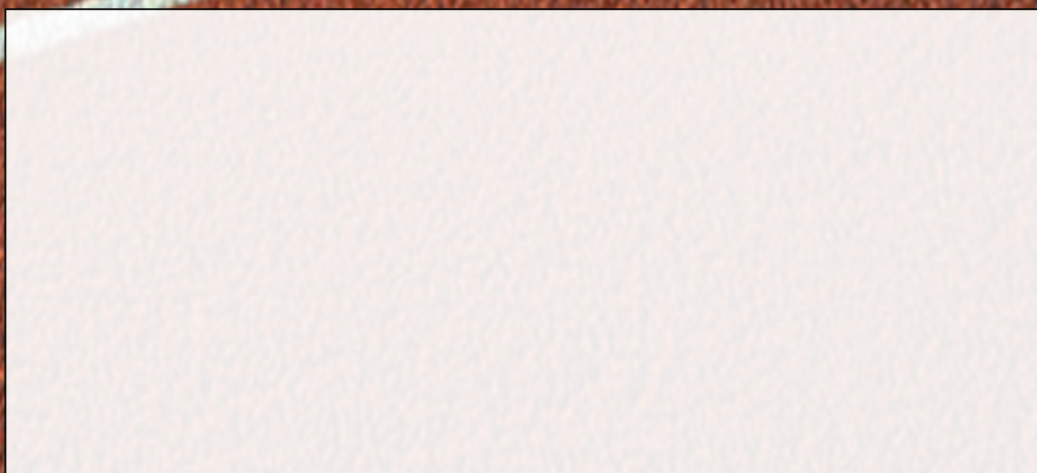




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Official agent stamp



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