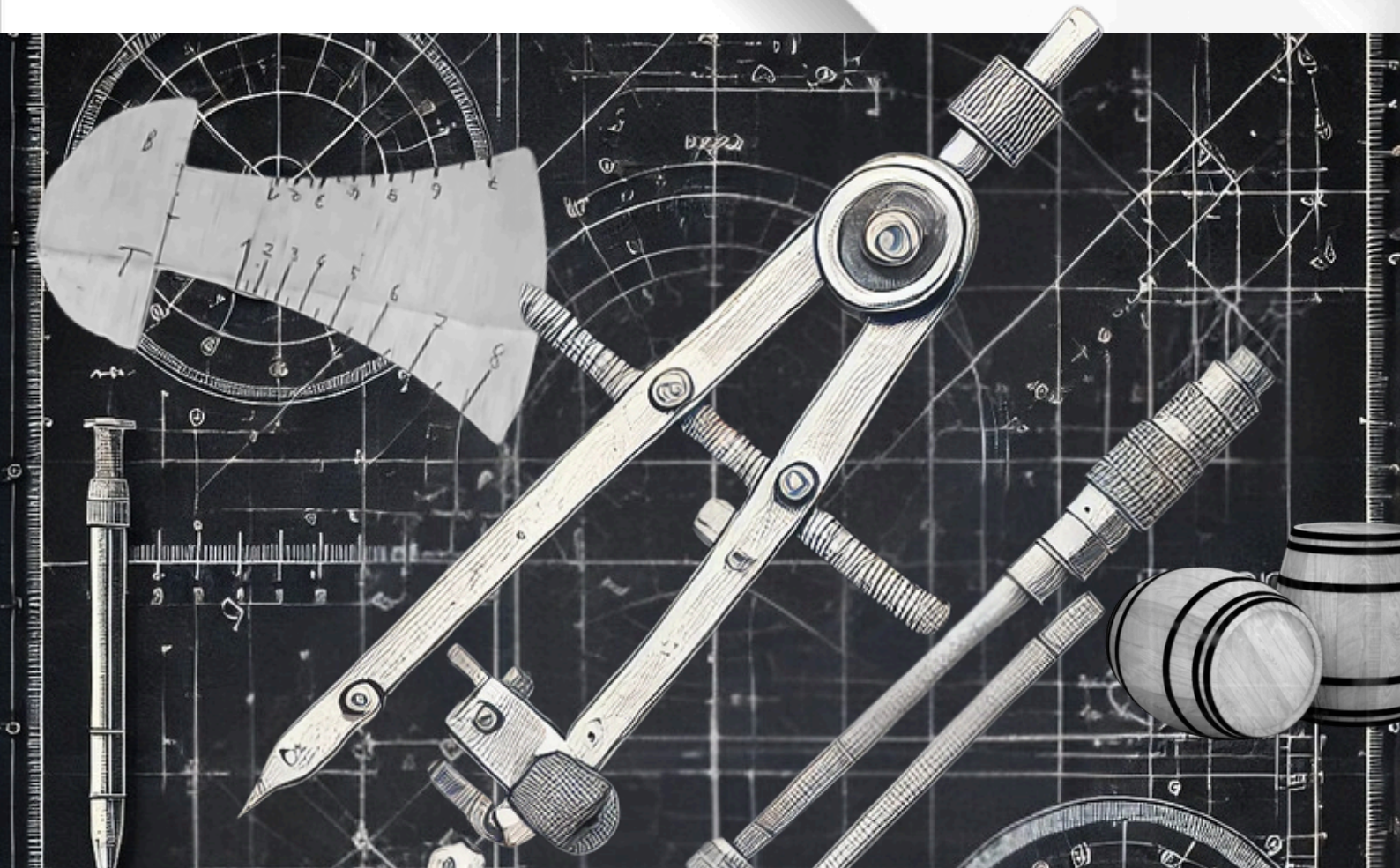


# "One-third" oval

MARIAUD CONSULTING



# "One-third" oval – Layout and construction logic in cooperage

## 1. Principe

The oval is constructed by a succession of connected circular arcs.

The objective is to obtain a curve that is:

- regular
- symmetrical
- without breaks between the arcs

### • Step 1

Layout of the major axis

- Trace the segment [AB]



### • Step 2

#### Division of the major axis

Divide [AB] into 3 equal segments:

A — E — D — B

AE = ED = DB



### • Step 3

#### Layout of the construction circles

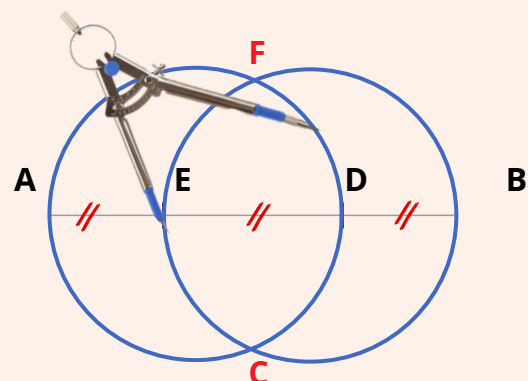
Draw two circles:

- center E
- center D

with a radius equal to AE

These circles intersect at two points:

F and C



*The precision of the radius is essential:  
an error at this stage skews the intersection points and compromises the regularity of the oval.*

# "One-third" oval

## • Step 4

### Construction of the connection lines

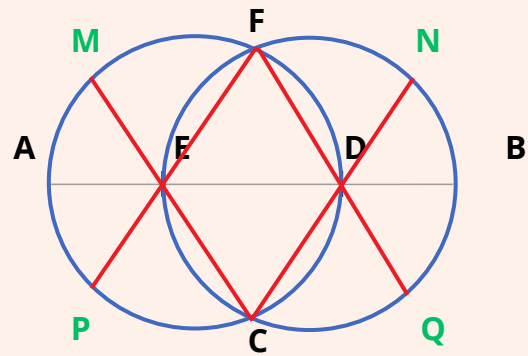
Draw the lines:

- **CE** and **DF**
- **CF** and **DE**

These lines intersect the circles and allow for the definition of points:

**M, N, P** and **Q**

These points correspond to the blending zones between the arcs.



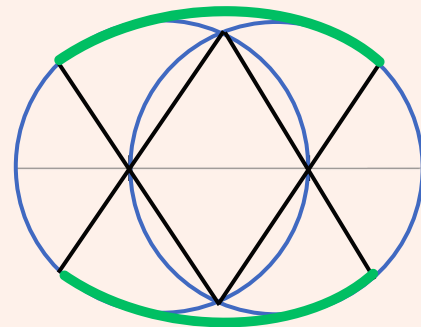
## • Step 5

### Layout of the arcs

Draw the circular arcs:

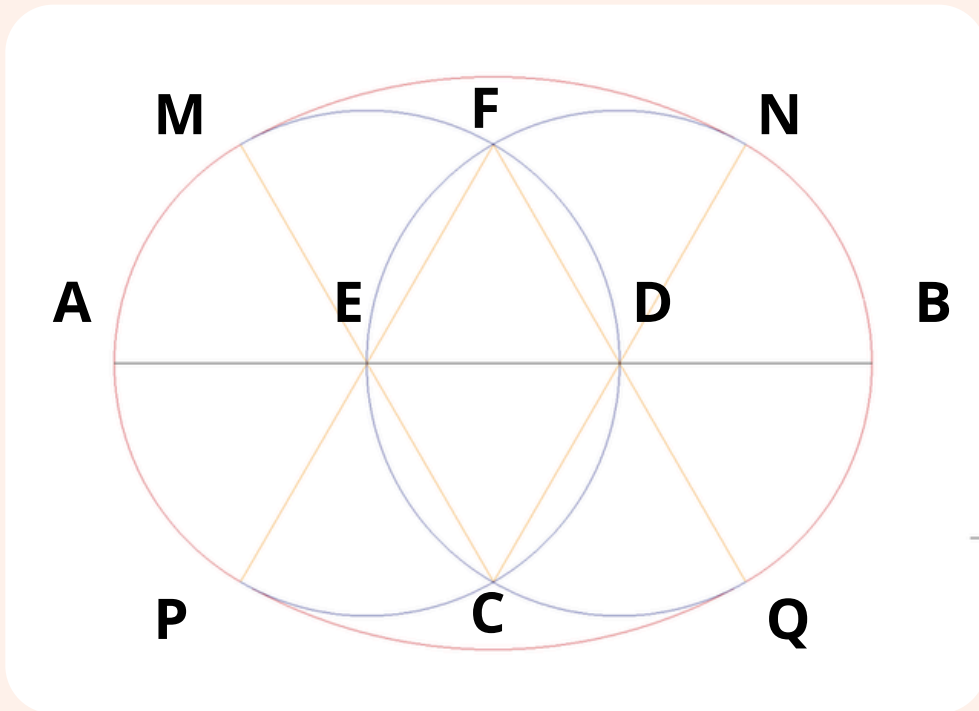
- from point C as the center → **arc QP**
- from point F as the center → **arc MN**

The side arcs complete the shape of the oval.



# "One-third" oval

- **Result**



**The oval consists of four circular arcs connected to each other at points:  
M, N, P and Q**

**Key point**

The two main arcs have a radius double that of the side arcs:

$$MF = 2ME = 2AE$$



*It is up to you to  
put this into practice  
and perfect your  
craftsmanship!*