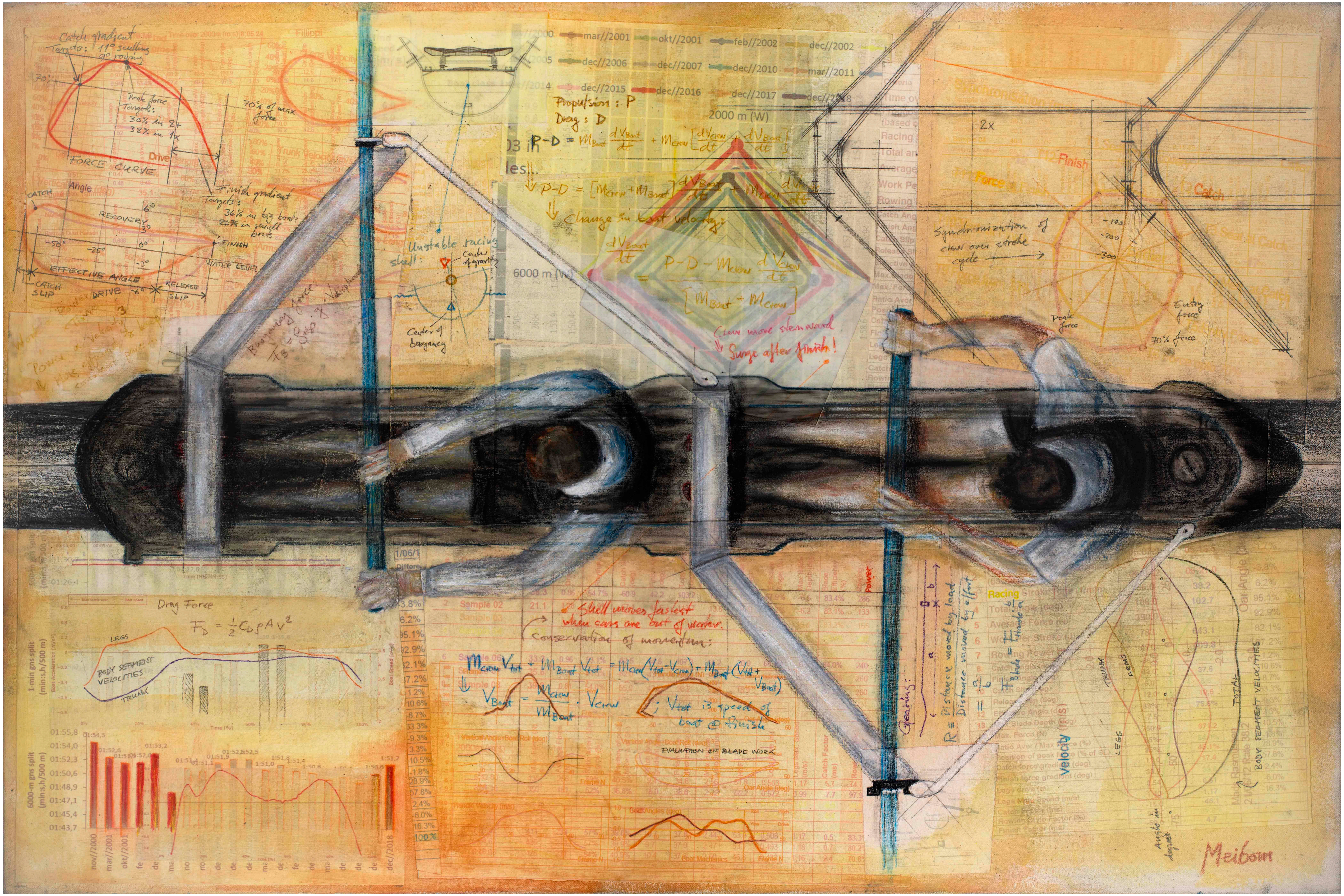
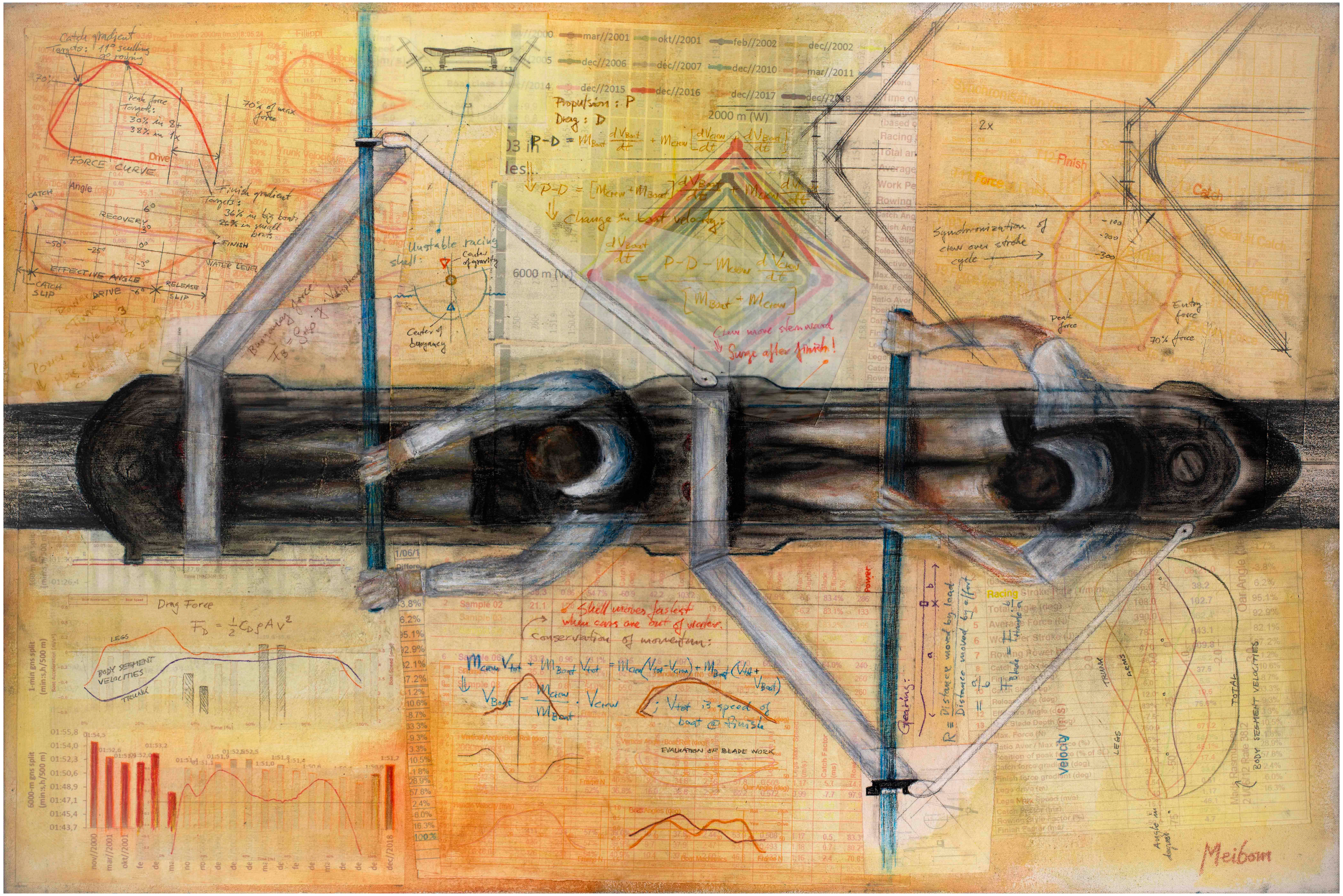
Content guide for *M2*





M2 displays the striking architecture and dynamics of the crew-shell-oar system for a double sweep boat, and combine it with scientific expressions, imagery, diagrams, data tables, and text that demonstrate the double sweep athlete's performance and illustrate core physical principles of rowing. The original artwork is mixed-media on canvas and measures 76cm x 51cm (30" x 20").

Curve showing force on handle over the stroke cycle (catch-drive-finish-recovery) for double sweep crew

Cross-sectional view of a racing shell and a diagram showing why such shell are inherently unstable (center of gravity is above shell meta-center)

A derivation of the expression for the acceleration of the shell-crew system that makes it clear that when the crew moves sternward (backward) at the end of the stroke cycle, the shell accelerates in the forward direction.

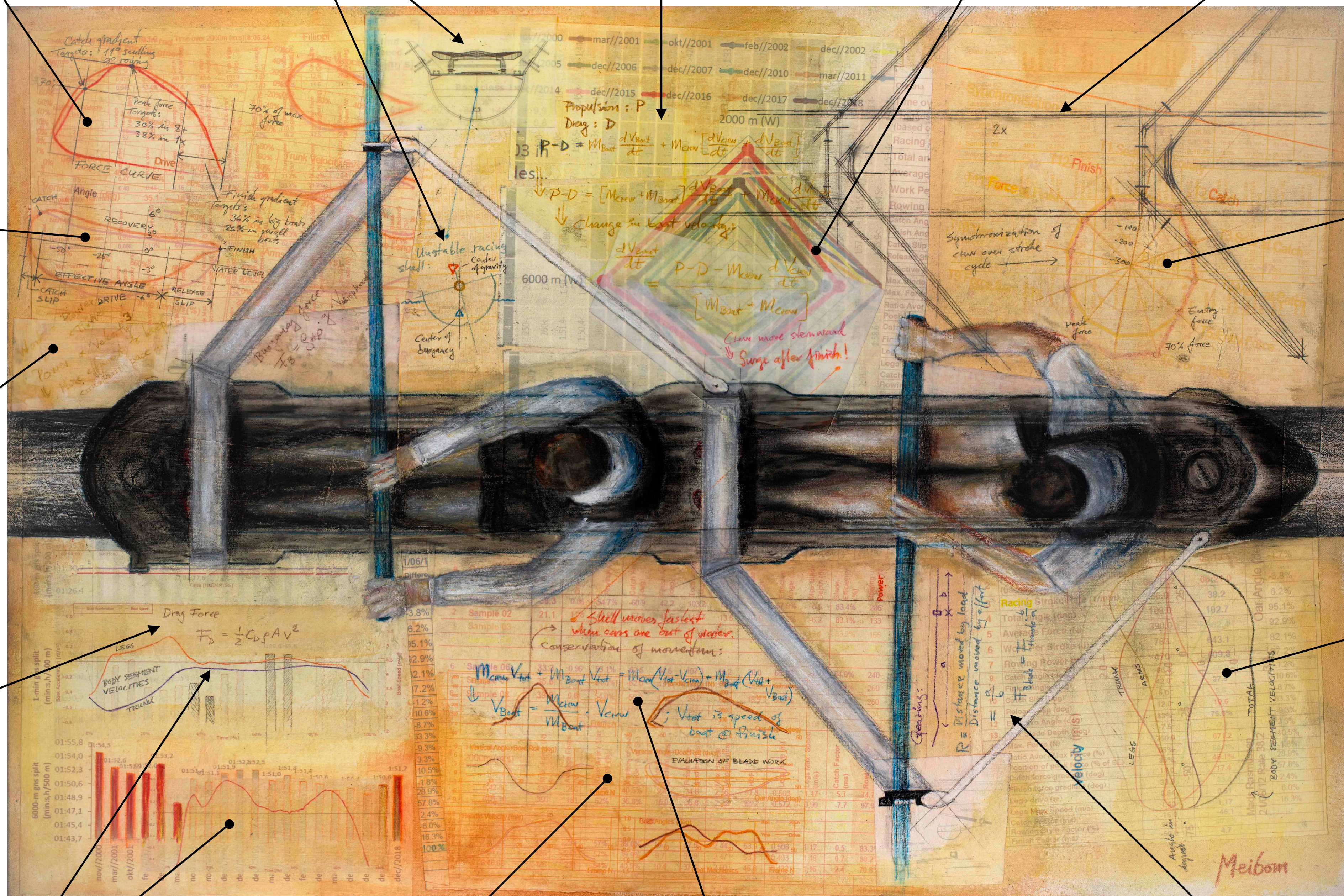
A graphical representation of crew split times at different distances

Drawing of the outlines of the structural components of the central part of the shell and rigging for a double scull boat

Curve showing oar angle (relative to water level) over the stroke cycle (catch-drive-finish-recovery) for double sweep crew

A diagram demonstrating the level of synchronization of the forces for both rowers in a double sweep shell over the stroke cycle

Physical relation between rower power and shell velocity (most efficient to keep constant velocity)



Velocity measurement curves of double sweep rowers body segments and total shell-rower-oar system over the stroke cycle (as a function of oar angle)

Expression for drag force on shell. C_D, ρ, A, and v denotes the drag coefficient, fluid (water) density, drag area, and shell velocity, respectively

Training split times, boat speed, shell acceleration, and rower body segment curves for a double sweep crew

Curves showing measurements of oar handle, vertical oar angle, shell-roll, handle velocity, shell angle, etc. over the stroke cycle for two rowers in a double sweep boat

Expression for conservation of momentum in the shell-crew system illustrating why the shell surges to maximum velocity after the “finish” when the oar blade comes out of the water

The principle of oar “gearing” and the relationship between the force on the oar handle (F_{handle}) and on the oar blade (F_{Blade})