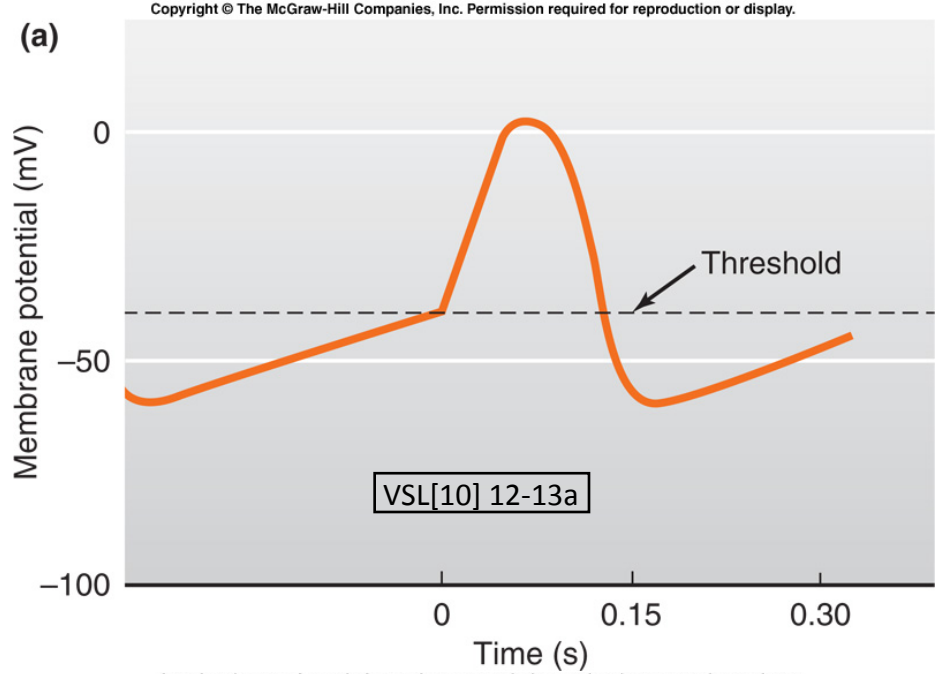
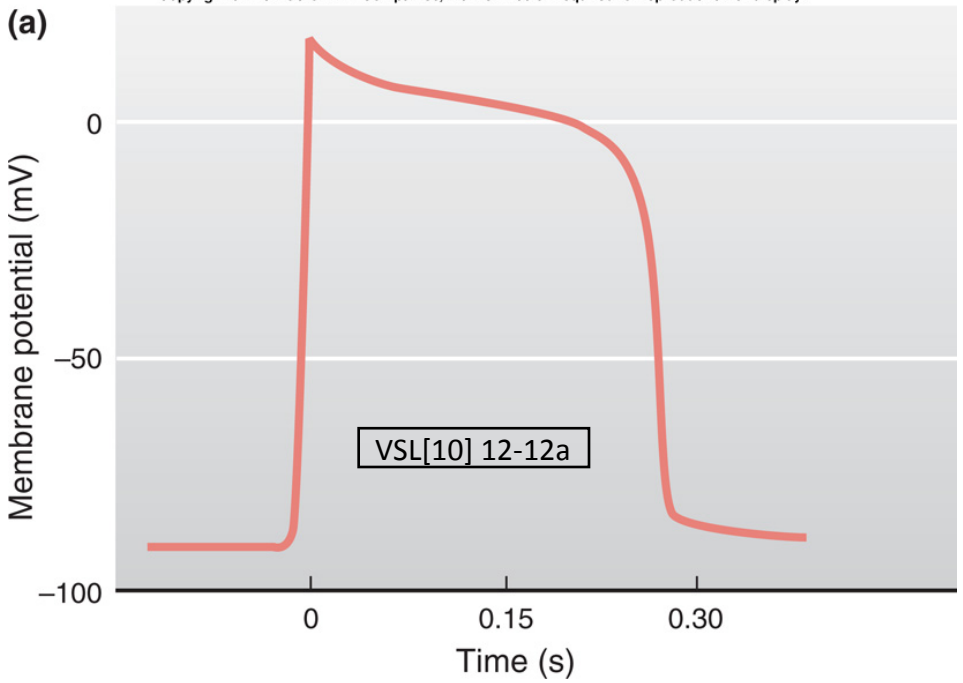




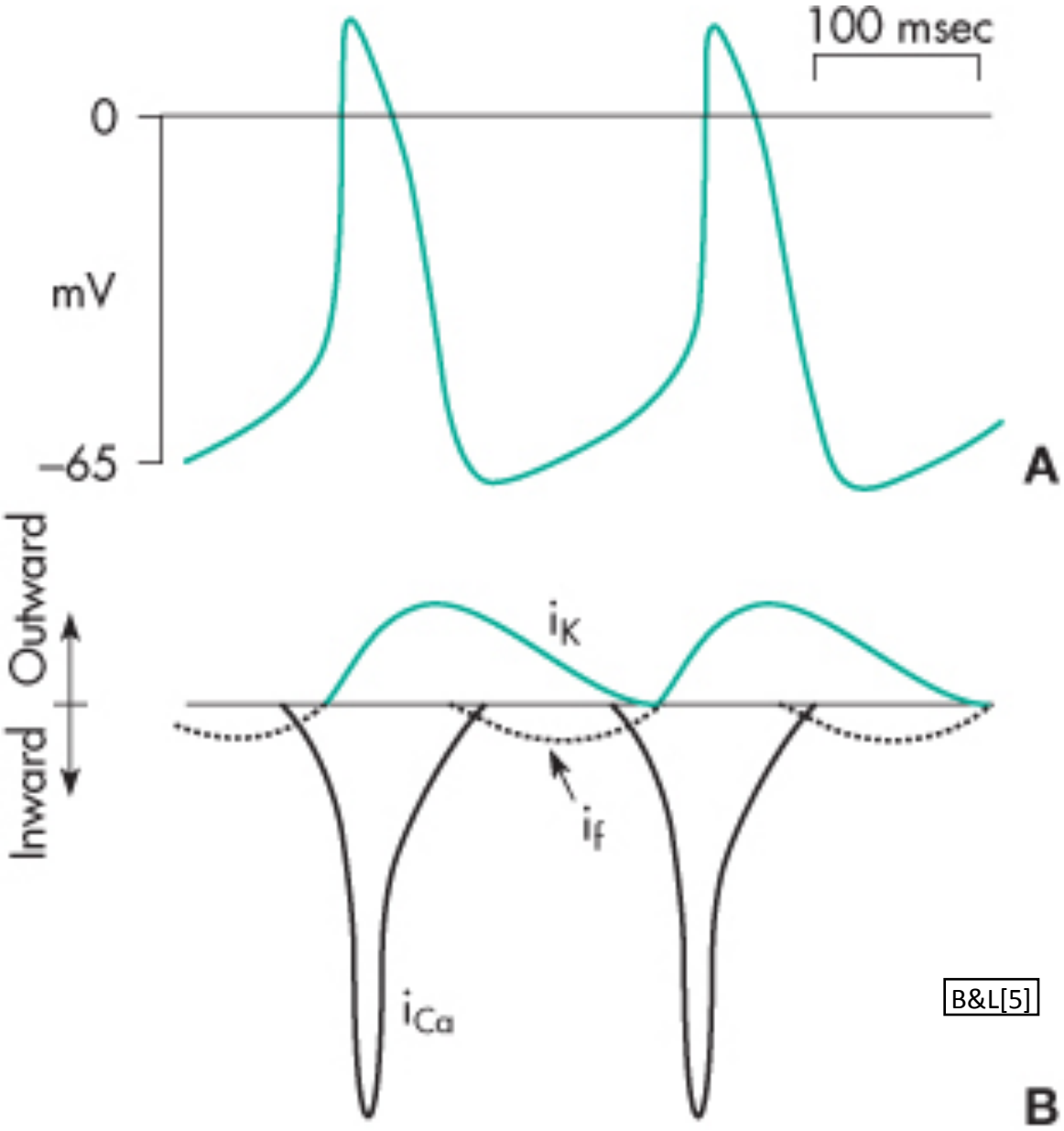


Figure 15-22 The transmembrane potential changes (A) that occur in SA node cells are produced by three principal currents (B): (1) an inward Ca^{2+} current, i_{Ca}; (2) a hyperpolarization-induced inward current, i_f; and (3) an outward K^+ current, i_K.

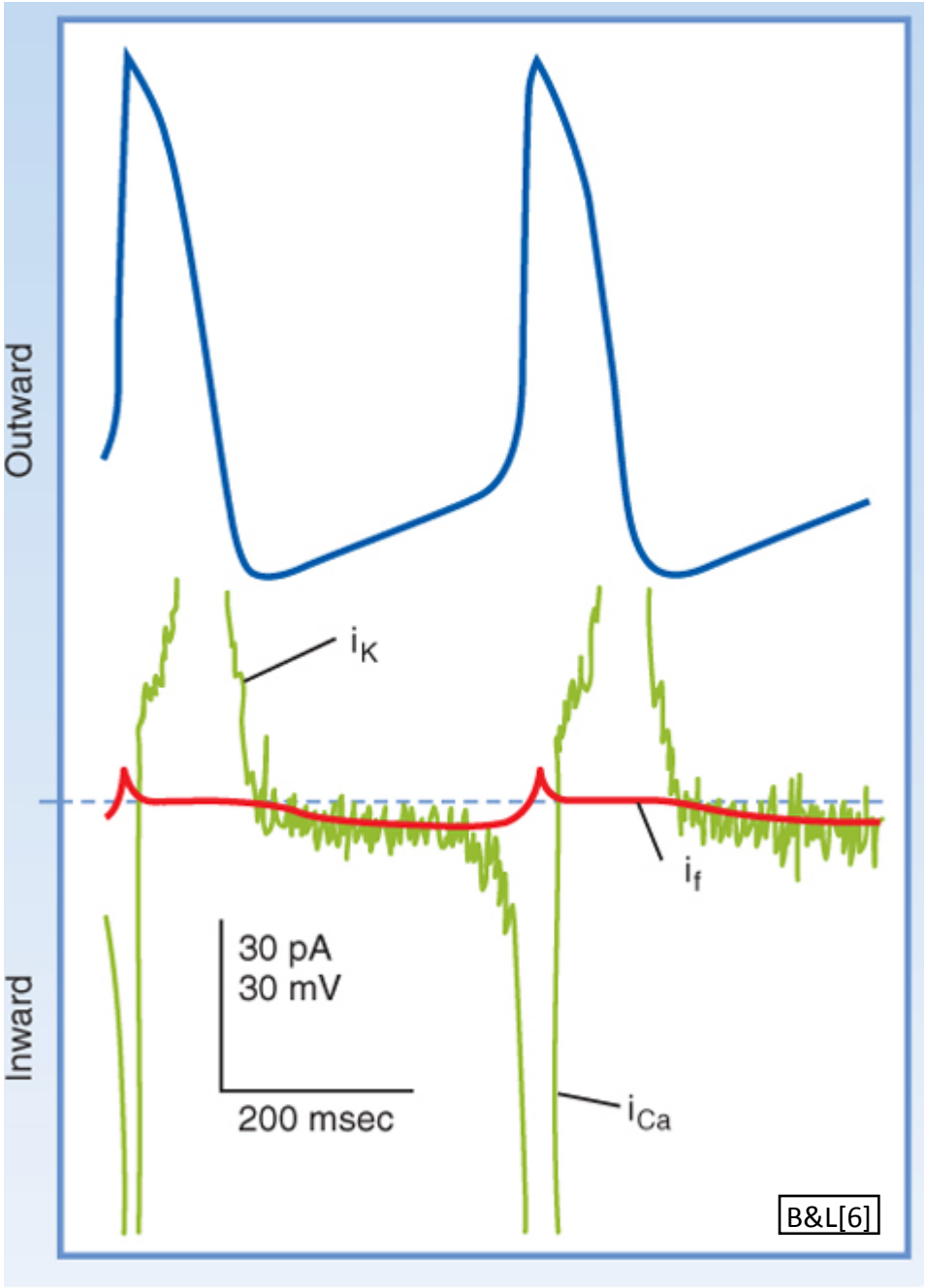
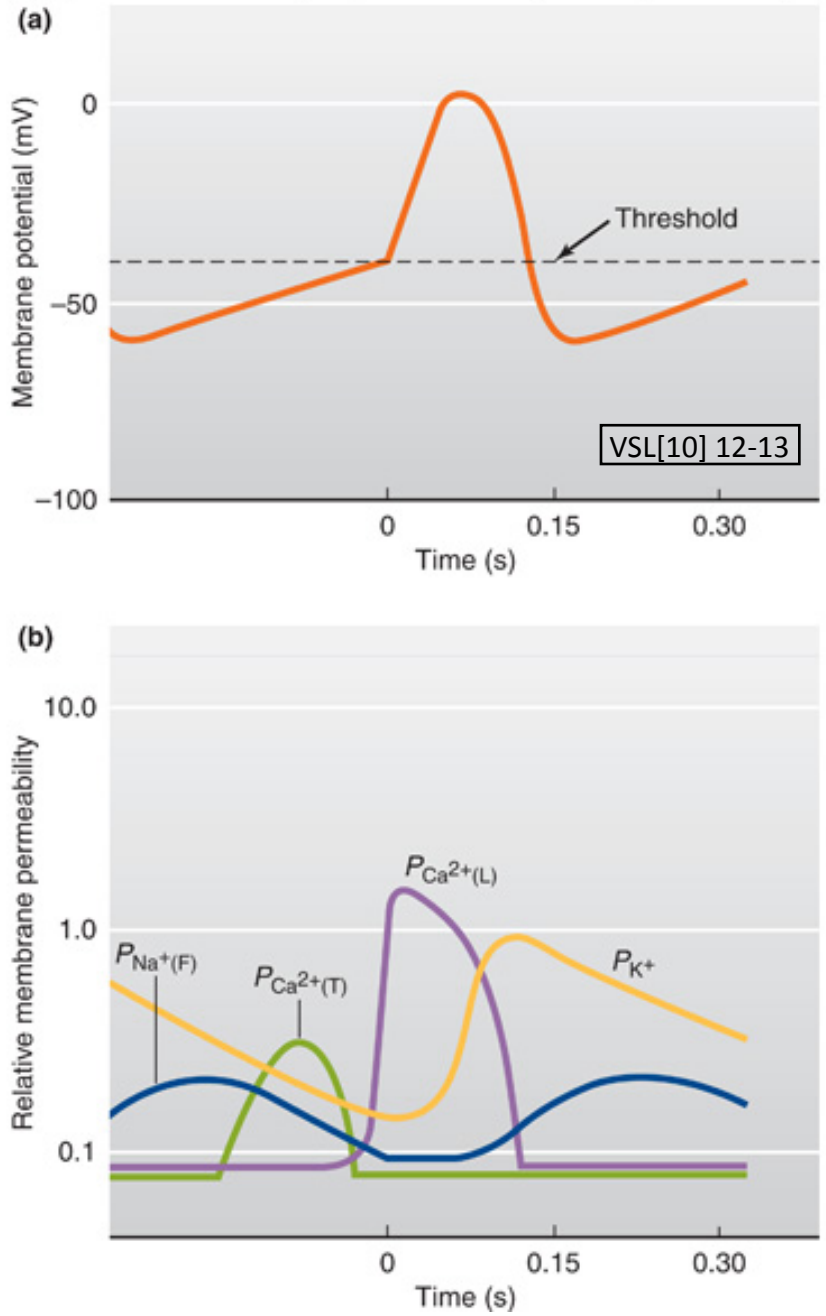


Figure 16-19 The transmembrane potential changes (top half) that occur in SA node cells are produced by three principal currents (bottom half): (1) the current i_{Ca}; (2) a hyperpolarization-induced inward current, i_f; and (3) an outward K^+ current, i_K. The thin noisy green trace shows net membrane current and the approximate time course of (1) the repolarizing outward K^+ current i_K, (2) the hyperpolarization-induced inward current i_f, and (3) the L-type Ca^{++} current i_{Ca}. The thick bold red line in the current trace indicates the magnitude and direction of estimated I_f. (Redrawn from van Ginneken ACG, Giles W: J Physiol 434:57, 1991.)



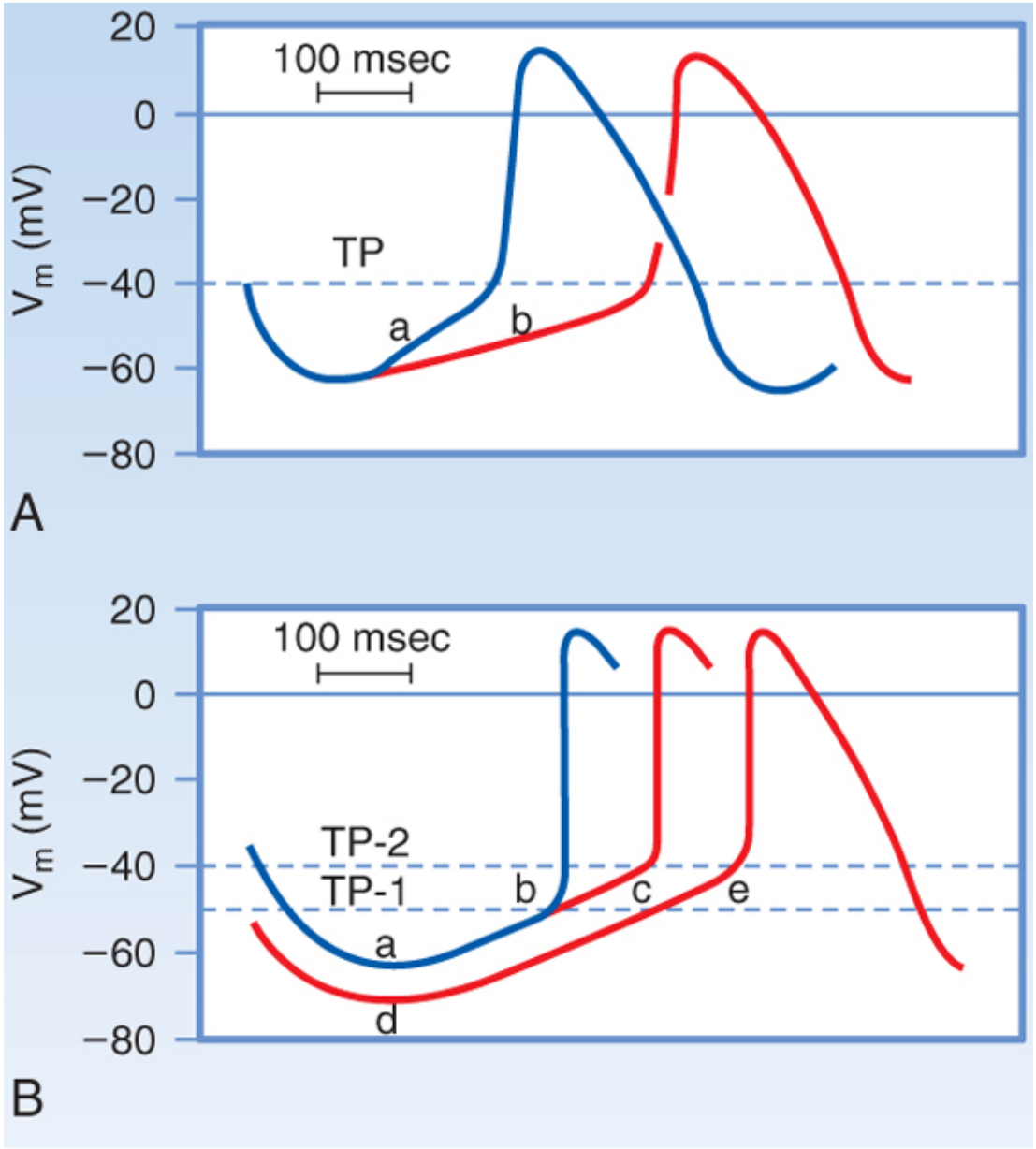


Figure 16-18 Mechanisms involved in the changes in frequency of pacemaker firing. In A, a reduction in the slope (from a to b) of slow diastolic depolarization diminishes the firing frequency. In B, an increase in the threshold potential (from TP-1 to TP-2) or an increase in the magnitude of the maximum diastolic potential (from a to d) also diminishes the firing frequency. (From Hoffman BF, Cranefield PF: Electrophysiology of the Heart. New York, McGraw-Hill, 1960.)

END

Video 4, Module 6