



Federal Aviation  
Administration

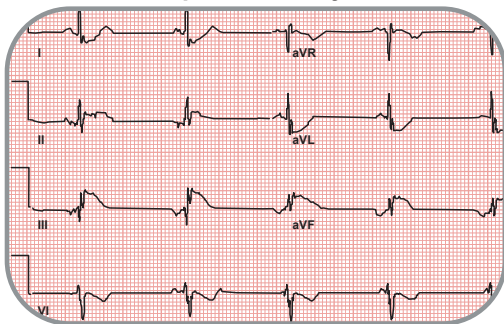
# Why does the ECG evaluation process take so long?

Many common ECG findings are normal variants and are not cause for deferment, unless the pilot is symptomatic or there are other concerns.

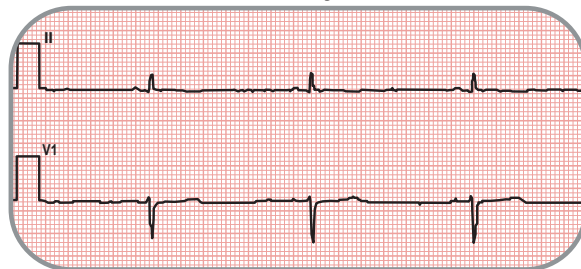
How do you identify  
ECG normal variants?  
Let's look at a few examples.



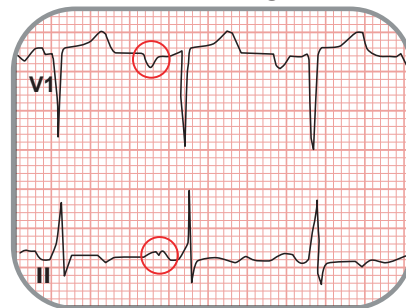
**Ectopic Atrial Rhythm**



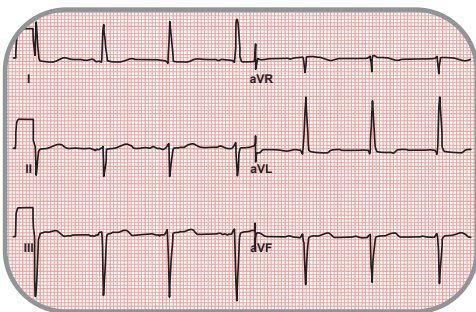
**Sinus Bradycardia**



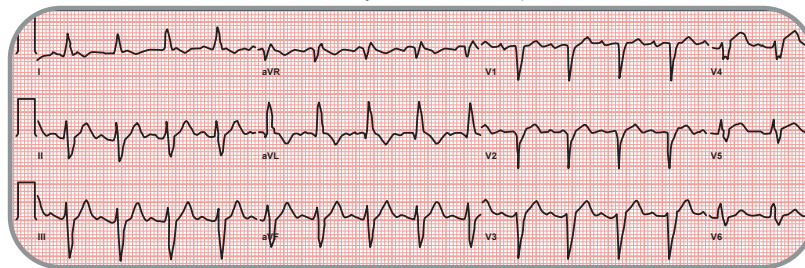
**Left Atrial Enlargement**



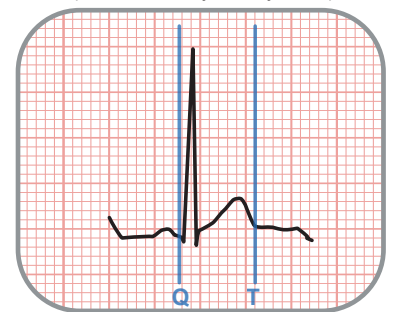
**Left Axis Deviation**  
(less than or equal to -30 degrees)



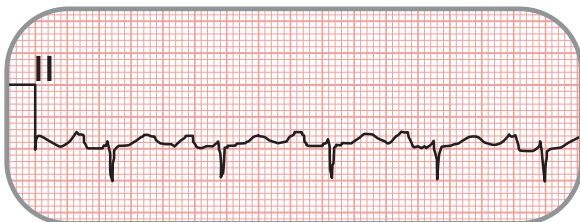
**Intraventricular Conduction Delay (IVCD)**  
(Complexes do not appear like a Rt or Lt BBB)  
Abnormally wide QRS complex



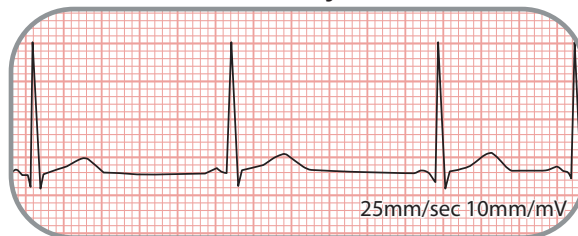
**Short QT Interval**  
(with no history of arrhythmia)



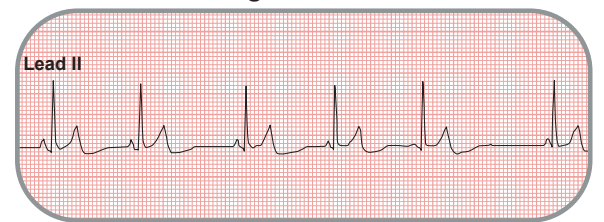
**Sinus Tachycardia**



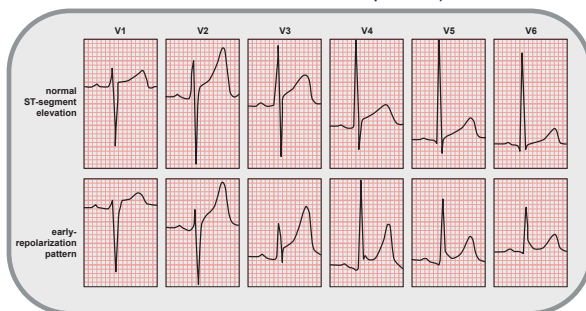
**Sinus Arrhythmia**



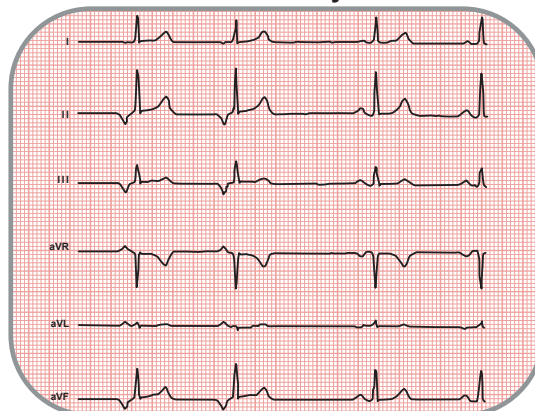
**Wandering Atrial Pacemaker**



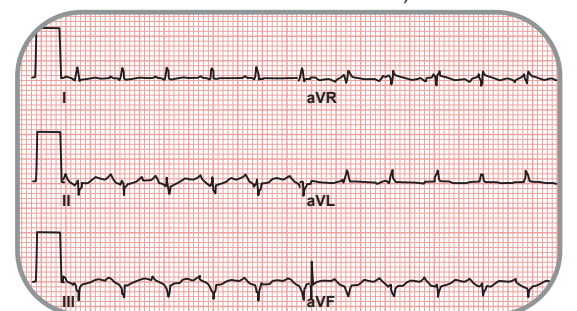
**Early Repolarization**  
(Defined as appearance of a J wave  
on a normal heart beat pattern)



**Low Atrial Rhythm**



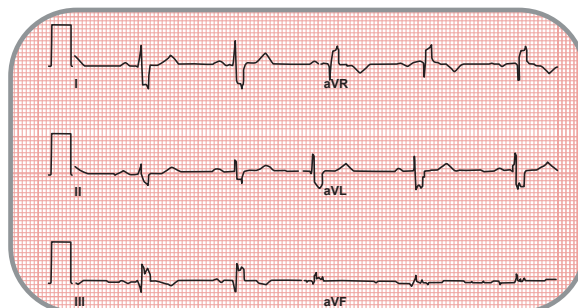
**Low Voltage Electromotive Force**  
(Make sure the ECG is performed  
with 10mm standardization)



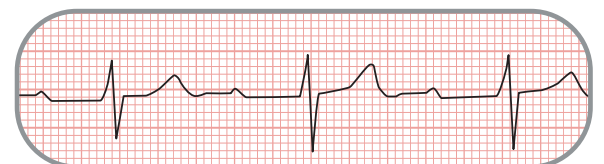
**Single Premature Ventricular  
Contraction (PVC)**



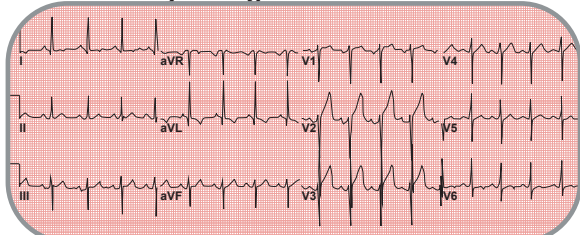
**Indeterminate Axis**



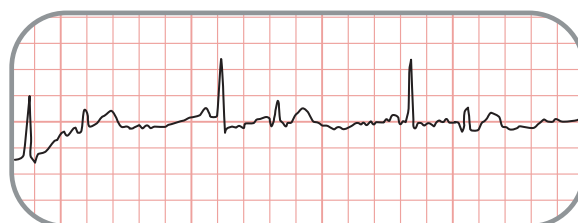
**First-degree AV Block With PR Interval  
Between 0.21 and 0.29 Seconds**



**Left Ventricular Hypertrophy  
By Voltage Criteria Alone**



**Two Or More Premature Atrial Contractions**



**Incomplete Right Bundle Branch Block  
(IRBBB)**

