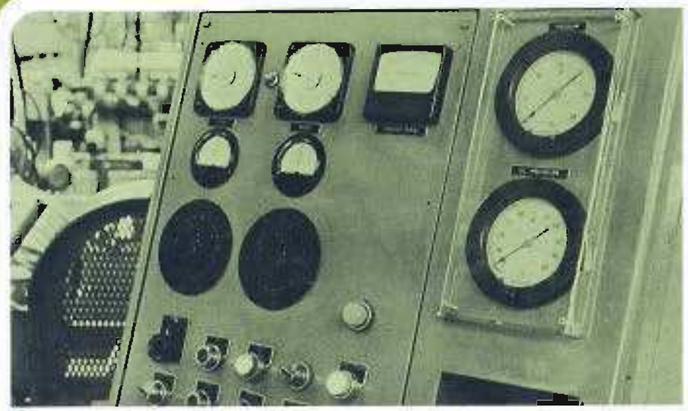
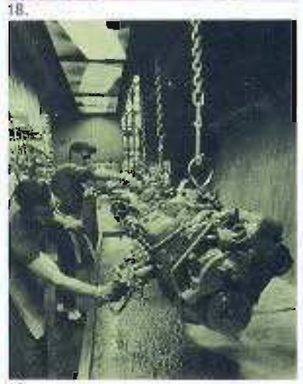


16.

17.

18.



19.

20.

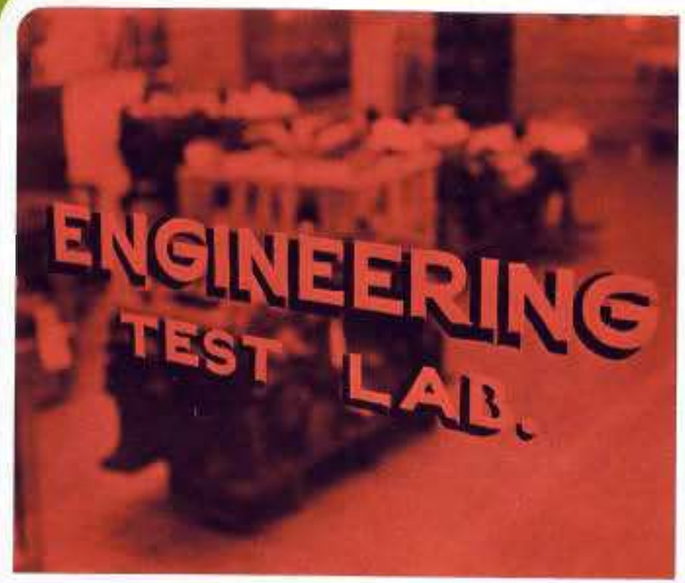
16. A complete instrument board next to the test stand tells the performance of all the components, including an indication of any imbalance.

17. Will it start? After months at such a job, the operator begins to take it for granted that every engine *will!* As the engine catches, the operator immediately studies the instrument board to make sure oil pressure is correct. On this brand-new engine, the pressure should be at least 30 psi at 600 rpm. At 1500 rpm, pressure should be in the range of 35-45 psi. In addition to oil pressure, the operator checks manifold vacuum, adjusts timing, checks for possible oil, water or exhaust leaks. There is no tolerance for *any* leaks. All rotating components have been balanced to within ½ oz.-in. before assembly, but at this station, the engine is balanced to *zero!* Final balance is achieved by welding on weights or by precise drilling of the harmonic balancer or flywheel. Maximum speed for any test stand operation has been limited to 1900 rpm.

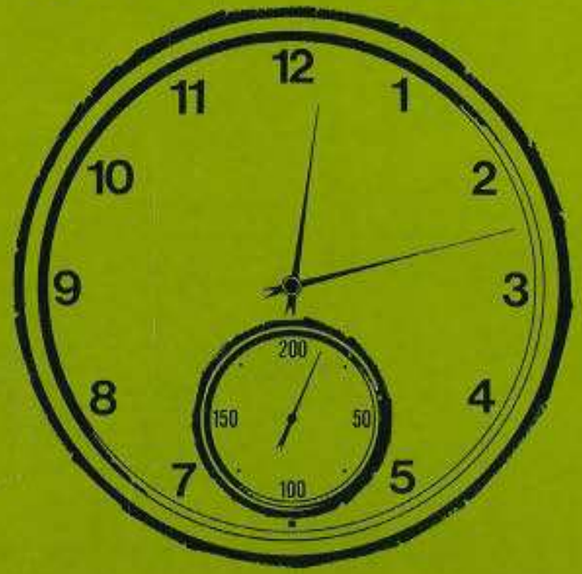
18. Once the engine has passed its first inspection, the operator then uses his "ear-meter" and long stethoscope probe to uncover possible extraneous, unwanted noises.

19. With the myriad of tests completed, the engine is sent to the painting area. Here, preformed masks are placed on the engine to shield all components that shouldn't be painted. With a "wall" of water behind and under the engines, they are sprayed with a quick-drying engine enamel.

20. From the paint area, engines are removed from the conveyers and placed in nine-engine shipping racks. A fork-lift truck makes the final transfer to the boxcar. Next stop: the Corvette assembly plant at St. Louis.



Some engines don't go to the boxcars



Not all Corvette engines end up in Corvettes. In fact, some never leave the plant—except in pieces in the scrap barrels. A number of engines are taken from each day's production and torn down for minute inspection in the Tonawanda Reliability and Warranty Center.

Other engines are taken from each day's production and put on dynamometer test. In what is called a 200-hour durability test, engines are cycled every 30 seconds. In other words, they are accelerated and decelerated in a 500-rpm range for 200 hours straight. In this constant cycling, manifolds get a cherry red and stay that way for the entire time. With this grueling test procedure, a question would naturally come to mind. How often do the engines scatter? On questioning, one dynamometer operator answered (with a twinkle in his eye), "I don't remember one scattering . . . but then, I've only been here a few years."

After this Spartan service on the dynamometer, the engines are not put to rest, but are subjected to the final test of being completely torn apart, analyzed, sawed, filed, measured for wear and inspected to the smallest detail. Once all the quality control checks have been satisfied, the bits and pieces are consigned to the scrap barrel . . . to be melted down at the Chevrolet foundry to perhaps become another red Corvette engine.