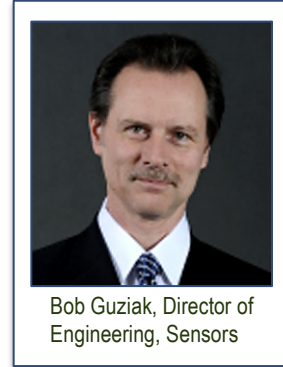


## The Growing Market for Aerospace Sensors

In our recent discussion with Bob Guziak, director of the Sensor Engineering at Hydra-Electric, we set out to learn more about aerospace sensors and the continuing growth in the marketplace.



**Q:** In a recent industry report, Frost & Sullivan predicted the market for aerospace sensors would more than double between 2010 and 2020. What's driving that growth?

**A:** With the introduction of next generation aircraft comes the increased need to measure various elements on a real time basis in order to best monitor the health of the aircraft. Sensors support this capability, allowing one to measure various parameters (e.g., air pressure, temperature, flow levels, etc.) over a continuum. In addition, the focus on designing more fuel efficient aircraft has meant an increased need for sensors.

**Q:** We hear the terms sensors and transducers — is there a difference?

**A:** In general, the industry seems to use the terms interchangeably, although the term 'sensors' is more commonly used in the U.S., and transducers is more commonly used in Europe. Note that there is a slight technical difference, which may only be appreciated by engineers.



**Q:** What are the different technologies offered?

**A:** Bonded strain gages, PRT (Piezoresistive transducer) and oil filled PRT are the older technologies traditionally utilized. There are also capacitive technologies and capacitive MEMS, as well as an older version of thin film strain gage. Newer advances in miniaturized thin film technology represent the most recent advancements. Selection of technology is driven by operational and environmental requirements.

**Q:** With such growth in the sensors market and a field of sensor manufacturers ready to meet this demand, how does Hydra-Electric differentiate itself from the rest?

**A:** One of the biggest challenges faced by sensors within critical aircraft systems is the ability to maintain accuracy over extreme conditions and extended usage. We have developed innovative designs to address these and other issues. What we've learned from customers is that Hydra-Electric has been able to solve problems their engineers didn't think could be solved. For example, Hydra-Electric builds sensors with the ability to survive high-speed impulses, pump ripple, or high-pressure cycle counts theoretically into the billions. We've been able to eliminate common failure modes such as pressure spike damage, burst diaphragms, broken wire bonds and media leaks. Another characteristic that sets our sensors apart is their ability to provide for high accuracy across the entire temperature or pressure spectrums. This is in contrast to many competitor designs, which cannot provide a consistent level of accuracy at the extreme ends of the ranges. Hydra-Electric has also tailored designs that provide near perfect characteristics for typical parameters such as input impedance, output impedance, common mode voltage and EMI upset. Hydra-Electric sensor technologies truly differentiate themselves by offering proven solutions without compromise.