Engineering Espionage: How technological innovation has shaped secret intelligence
By Sir David Pepper

Sir David Pepper, a former director of GCHQ, and one of our Society members, has an interesting tale to tell. Unfortunately, he is not allowed to tell most of it. His talk was still a fascinating insight into the world of secret intelligence, even if, as he said "*You can find everything I am going to talk about on the Internet - if you know where to look*." The technical chutzpa of some of the exploits were indeed astonishing - like the American submarine that crept into Soviet waters to tap an undersea telecommunications cable, regularly returning to pick up recordings and producing material that was in Sir David's words "*most highly classified when I saw it*". The secret was eventually betrayed to Russia by a contractor in the USA's National Security Agency - and eventually declassified by the Americans.

The technical feats described were engaging, but he also emphasised the importance of the human side, not only the failings that often reveal secrets, but the necessity of setting up systems that can handle the increasingly large volumes of data being produced by current technology. Data only becomes information when it is interpreted and only becomes valuable when it is given to those who know what to do with it. On the one hand, our large scale interconnected IT systems make it hard to function in modern society without leaving "digital footprints", on the other, the increasing volume of data is such that finding what we need to know also becomes harder.

The Internet, in particular, creates both opportunities and vulnerabilities: actors in the field can collect data from foreign targets without leaving their home base, but their adversaries can also do the same, and perhaps also place mal-ware in the IT systems underpinning our critical infrastructures. Hence, GCHQ also has the task of protecting our own assets, sometimes struggling with a lack of understanding of technical issues amongst political leaders, and complacency in the industrial sectors that generate, and ought to safeguard, many of our intellectual assets. The movement of technology means that we cannot sit still: new opportunities and threats appear all the time, and, as perhaps in the case of self-driving cars, it is easy to be seduced by the opportunities while choosing to overlook the new risks.

One sentence from the talk will stay with me for some time: "*Much of what you read in spy novels is true*."