AFI Vic - Sofa Seminars 2020

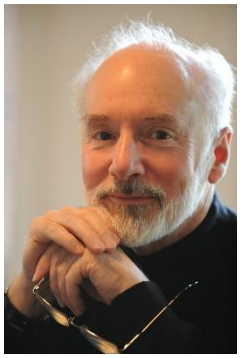
Presentations #3

The third presentation in our AFI Sofa Seminar series was presented by Professor John Campbell "Live from the UK ". Please review this rare opportunity, complete with live audience, with the doyen of bifilms which are "The Fundamental" defect in cast metals.

Grab a glass of your favourite tipple, a comfortable chair and review this presentation by clicking on the following link:

https://youtu.be/Y3P29w-Uo6I

Professor John Campbell



The author is a physicist, with 2 master's and 2 doctor's degrees, as clear signs of a misspent youth, and has written far too many papers, patents and books. Having become a foundryman by mistake, he has bulldozed foundries, built them, run them, owned them, and has made plenty of really bad castings. Being now definitely older but less certainly wiser, he is nevertheless keen to make better castings, promoting the cause of better castings, better profits and a better industry. The targets of better castings, consisting of better metals, metals which cannot fracture, will be products which, for the first time, engineers can trust.

 # 3 Wednesday 7th October 2020 6pm sharp AEDT

Casting Technology

The concepts of entrainment now dominate the concepts of liquid metal quality. Entrainment occurs when the surface of the liquid metal suffers surface turbulence. If the surface oxide on the metal is entrained the result is a bifilm. This is a crack, but also forms the substrate for precipitation of other phases. If pockets of air become entrained, and if the consequent air bubble is large, it floats out but leaves a bubble trail. These defects, typically a metre long, are the most damaging of all defects in castings. Smaller volumes of entrained air, together with oxides, are routinely mistaken for 'shrinkage porosity'. For modern foundries using computer simulation, shrinkage porosity now no longer exists. This is now common in foundries worldwide. Only filling system problems exist. Poor filling leads to entrainment defects which are the real problems in castings.