

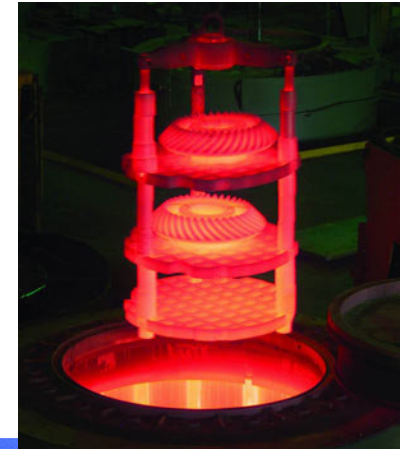


Temperature Uniformity Surveys (TUS)

Benefits of performing TUSs in heat
treating facilities

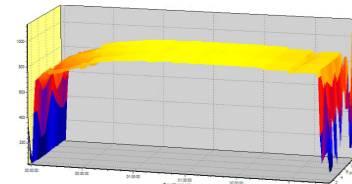
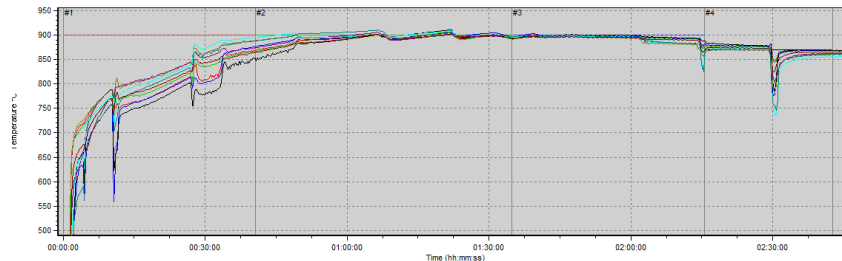
Specs demanding TUS (Automotive and Aerospace)

- CQI-9
- Ford-WHTX
- Bodycote BMS-WI 09.03.00
- AMS-2750D Pyrometry
- AMS-H-6875A Heat Treating
- AMS-H-6088A Aluminum Alloys
- Boeing Aircraft BAC5621H
- MIL-STD-45662A
- Other internal specs (Textron, Bell Helicopter, Lockheed Martin)



What's the usefulness of the info obtained from a TUS

- Indicates where cold and/or hot spots are in furnace.
- Gives insight as to why there are cold and/or hot spots and how to fix them.



- TUS info can be used at a later date:
 - For example: If a **recall** were to occur, TUS data help eliminate heat treat as a potential cause for the recall.



Benefits of performing TUS

- **Repeatability, repeatability, repeatability!!!!!!!**
- Verification of homogeneous temperatures reduces likelihood of scrap and/or quality related product **RECALLS**.



- Encourages maintenance and upkeep of furnaces and related equipment.
- Compliance with customer mandates secures business.



Cost saving by performing TUS

- TUSs proactively help to achieve a repeatable metallurgical result.
- Because TUSs are a proactive measure (not reactive), the monetary savings related to performing TUSs could only be measured by NOT performing the TUSs and waiting for the bad news.
- There are many examples where NOT performing TUSs costs companies many tens of thousands of dollars and sometimes many millions of dollars.



- Is it worth the risk of not performing TUSs?

Conclusion

- If TUS are not performed, the heat treater needs to quantify what potential liabilities might he/she inherit if metallurgically related automotive/aerospace **recalls were to take place as a result of poor temperature uniformity?**



True Service you can count on!

- **Tru-cal (USA)**

- Nate Wright

- (317) 402 0021

- natewright@tru-cal.com

- nate.wright@globalthermalsolutions.com

- **Tru-cal de Mexico (GTS)**

- Victor Zacarias

- 52 (442) 140 2908

- victor@globalthermalsolutions.com

