

## CASE STUDY

# The benefits of routine SOAP checks



T: +44 (0) 1256 704000  
enquiries@spectro-oil.com  
www.spectro-oil.com

CONDITION MONITORING EXCELLENCE

**The potential failure would most likely have taken place during the transatlantic crossing, therefore the savings due to the oil and filter analysis are great.**

## INTRODUCTION

An aircraft was scheduled to depart the USA for an European tour. Prior to the flight, SOAP samples (Spectrometric Oil Analysis Program) were taken on both engines.

## ANALYSIS

Both filter and oil samples were analysed.  
The oil results gave a high Iron content as follows:

FE	CU	NI	CR	AG	MG	AL	PB	BE	TAN
8.8	0.1	-1	-1	-1	-0.1	0	0	0	0

Whilst the SEM (Scanning Electron Microscope) reported M50 with steel chunk up to 1.7mm found to be present in the filter from the No1 engine.

## ACTION/FOLLOW UP

After consultation, the engine was removed and sent for investigation. Inspection revealed that the source of the M50 was a failure of the No1 bearing.

## CONCLUSION

As the potential failure would most likely have taken place during the transatlantic crossing, the savings due to the oil and filter analysis are great.

The benefits are: no in-flight shut down, no secondary damage, no diversion, no subsequent hotel or flight costs for passengers, no engine change teams required, no loan engine required (i.e. no need to remove and replace twice). Early detection meant minimum repair costs for our customer.

SEM Photograph of Filter Debris

