

## ANALYSIS RESULTS

JEFFREY LIEGNER MD  
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350 SPARTA AVE BLDG A

Aircraft: LANCAIR IV  
S/N: 464  
Tail No.: N334P

Date: 10/21/2011  
Engine S/N: 803225  
Engine Model: CONT. T550

SPARTA NJ 07871  
United States

Values in (parenthesis) below your results are average values from all our analysis data for the same engine model with similar engine hours and oil hours.  
See [www.avlab.com/explain](http://www.avlab.com/explain) for detailed explanation of the statistical analysis used with your laboratory results.

| CURRENT SAMPLE                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                   | ** SEE LAB COMMENTS ** |                        |                |               |           |              |                 |              |          |                |       | Normal | Elevated | High     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|----------------|---------------|-----------|--------------|-----------------|--------------|----------|----------------|-------|--------|----------|----------|
| <b>Sample Date:</b> 9/24/2011<br><b>Analysis Date:</b> 10/17/2011<br><b>Sample Number:</b> P110<br><b>Cylinder Type:</b> steel<br><br><b>TSN/TSO:</b> unknown<br><b>Oil Hours:</b> 50<br><b>Filter Hours:</b> 50<br><b>Oil Added:</b> 2<br><b>Filter Wt. (mgs):</b><br><b>Flashpoint(deg. F):</b><br><b>H2O (ppm):</b><br><b>Total Acid No.:</b> | *** OIL ANALYSIS RESULTS IN PARTS PER MILLION ***                                                                                                                                                                                                                                                                                 |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | Iron                                                                                                                                                                                                                                                                                                                              | Copper                 | Nickel                 | Chromium       | Silver        | Magnesium | Aluminum     | Lead            | Silicon      | Titanium | Tin            | Moly. |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | 91.1<br>(N/A)                                                                                                                                                                                                                                                                                                                     | 10.4<br>(N/A)          | 45.7<br>(N/A)          | 21.2<br>(N/A)  | N/A           | N/A       | 7.3<br>(N/A) | 7908<br>(N/A)   | 2.5<br>(N/A) | N/A      | < 0.1<br>(N/A) | N/A   |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | *** FILTER ANALYSIS RESULTS ***                                                                                                                                                                                                                                                                                                   |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Material:</b>                                                                                                                                                                                                                                                                                                                  | Stainless Steel        | Carbon Steel           | Alloy Steel    | Bearing Alloy | Copper    | Silver       | Magn.           | Alum.        | Grit     | Misc.          |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Amount:</b>                                                                                                                                                                                                                                                                                                                    |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Type:</b>                                                                                                                                                                                                                                                                                                                      |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Form:</b>                                                                                                                                                                                                                                                                                                                      |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Comments:</b> NOTE INCREASES. PLEASE CONTACT THE ENGINE MANUFACTURER'S SERVICE REP FOR FURTHER ASSISTANCE. WE WILL CONTINUE TO MONITOR WEAR METAL TREND ON YOUR NEXT SAMPLE.                                                                                                                                                   |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | PREVIOUS SAMPLE 1                                                                                                                                                                                                                                                                                                                 |                        | ** SEE LAB COMMENTS ** |                |               |           |              |                 |              |          |                |       |        | Normal   | Elevated |
| <b>Sample Date:</b> 2/21/2011<br><b>Analysis Date:</b> 3/25/2011<br><b>Sample Number:</b> P21<br><b>Cylinder Type:</b> steel<br><br><b>TSN/TSO:</b> 335<br><b>Oil Hours:</b> 35<br><b>Filter Hours:</b> 35<br><b>Oil Added:</b> 1<br><b>Filter Wt. (mgs):</b><br><b>Flashpoint(deg. F):</b><br><b>H2O (ppm):</b><br><b>Total Acid No.:</b>       | *** OIL ANALYSIS RESULTS IN PARTS PER MILLION ***                                                                                                                                                                                                                                                                                 |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | Iron                                                                                                                                                                                                                                                                                                                              | Copper                 | Nickel                 | Chromium       | Silver        | Magnesium | Aluminum     | Lead            | Silicon      | Titanium | Tin            | Moly. |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | 64.5<br>(61.7)                                                                                                                                                                                                                                                                                                                    | 10.0<br>(7.1)          | 31.1<br>(24.7)         | 17.9<br>(16.8) | N/A           | N/A       | 4.7<br>(4.9) | 6339<br>(6111)  | 2.5<br>(5.0) | N/A      | < 0.1<br>(0.2) | N/A   |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | *** FILTER ANALYSIS RESULTS ***                                                                                                                                                                                                                                                                                                   |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Material:</b>                                                                                                                                                                                                                                                                                                                  | Stainless Steel        | Carbon Steel           | Alloy Steel    | Bearing Alloy | Copper    | Silver       | Magn.           | Alum.        | Grit     | Misc.          |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Amount:</b>                                                                                                                                                                                                                                                                                                                    |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Type:</b>                                                                                                                                                                                                                                                                                                                      |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Form:</b>                                                                                                                                                                                                                                                                                                                      |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Comments:</b> NOTE NICKEL AND CHROMIUM VALUES SEEM ELEVATED. PLEASE CONTACT THE ENGINE MANUFACTURER'S SERVICE REP FOR FURTHER ASSISTANCE. WE WILL CONTINUE TO MONITOR WEAR METAL TREND ON YOUR NEXT SAMPLE.                                                                                                                    |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | PREVIOUS SAMPLE 2                                                                                                                                                                                                                                                                                                                 |                        | ** SEE LAB COMMENTS ** |                |               |           |              |                 |              |          |                |       |        | Normal   | Elevated |
| <b>Sample Date:</b> 8/5/2010<br><b>Analysis Date:</b> 8/25/2010<br><b>Sample Number:</b> P03<br><b>Cylinder Type:</b> steel<br><br><b>TSN/TSO:</b> 300<br><b>Oil Hours:</b> 60<br><b>Filter Hours:</b> 60<br><b>Oil Added:</b><br><b>Filter Wt. (mgs):</b><br><b>Flashpoint(deg. F):</b><br><b>H2O (ppm):</b><br><b>Total Acid No.:</b>          | *** OIL ANALYSIS RESULTS IN PARTS PER MILLION ***                                                                                                                                                                                                                                                                                 |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | Iron                                                                                                                                                                                                                                                                                                                              | Copper                 | Nickel                 | Chromium       | Silver        | Magnesium | Aluminum     | Lead            | Silicon      | Titanium | Tin            | Moly. |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | 97.0<br>(108.)                                                                                                                                                                                                                                                                                                                    | 13.4<br>(10.7)         | 36.4<br>(31.3)         | 23.6<br>(21.0) | N/A           | N/A       | 1.6<br>(8.0) | 10905<br>(7830) | 2.9<br>(6.3) | N/A      | < 0.1<br>(0.3) | N/A   |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | *** FILTER ANALYSIS RESULTS ***                                                                                                                                                                                                                                                                                                   |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Material:</b>                                                                                                                                                                                                                                                                                                                  | Stainless Steel        | Carbon Steel           | Alloy Steel    | Bearing Alloy | Copper    | Silver       | Magn.           | Alum.        | Grit     | Misc.          |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Amount:</b>                                                                                                                                                                                                                                                                                                                    |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Type:</b>                                                                                                                                                                                                                                                                                                                      |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Form:</b>                                                                                                                                                                                                                                                                                                                      |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |
|                                                                                                                                                                                                                                                                                                                                                  | <b>Comments:</b> NOTE INCREASES IN IRON, NICKEL, CHROMIUM AND LEAD. THIS CAN BE FROM SOME VALVE GUIDE WEAR, A FUEL MIXTURE ADJUSTMENT OR THE ENGINE BEING PUSHED HARDER. PLEASE CONTACT THE ENGINE MANUFACTURER'S SERVICE REP FOR FURTHER ASSISTANCE IF NEEDED. WE WILL CONTINUE TO MONITOR WEAR METAL TREND ON YOUR NEXT SAMPLE. |                        |                        |                |               |           |              |                 |              |          |                |       |        |          |          |

