

## RESTORATION OF AGEING AIRCRAFT

The restoration of one-of-a-kind antique and experimental aircraft often requires the complete replacement of critical structural components, such as struts, bearings, etc. In some cases the only remaining information on a part is a drawing; in some cases even a drawing is nonexistent.

For load bearing components, the absence of material performance or processing specifications can make replacement of components very difficult. For the above reasons, it appears that an engineering-based antique and experimental aircraft part replacement service is needed.

REINHART & ASSOCIATES, INC., an engineering consulting/inspection company and FAA inspection station (VJAR372K), has formed a network of highly specialized service groups that can engineer, fabricate, and inspect a variety of antique aircraft components needed to restore aircraft to display or flying conditions.

### SERVICES INCLUDE:

- **CAD/CAM ENGINEERING DESIGN AND ANALYSIS** - This includes developing working fabrication drawings from field measurements, existing parts (reverse engineering), and/or component sketches in the absence of a part, and stress and finite element analysis.
- **FABRICATION** - Using state-of-the-art computer controlled mills and similar equipment, the part is manufactured to exacting dimensional tolerances which meet or exceed the original part.
- **MATERIAL SPECIFICATIONS** - Where material specifications do not exist or are antiquated, new material performance specifications can be developed to include material composition, acceptance tests, and processing requirements; heat treatment, peening, plating, etc., to meet or exceed the original design requirements.
- **TEST & INSPECTION REQUIREMENTS** - To insure the strength and integrity of the fabricated part, the latest destructive (tensile, fatigue, Charpy, etc.) and nondestructive (X-ray, ultrasonics, etc.) test specifications are developed and implemented.

Any or all of the above steps can be used to repair and/or replace critical aircraft components.

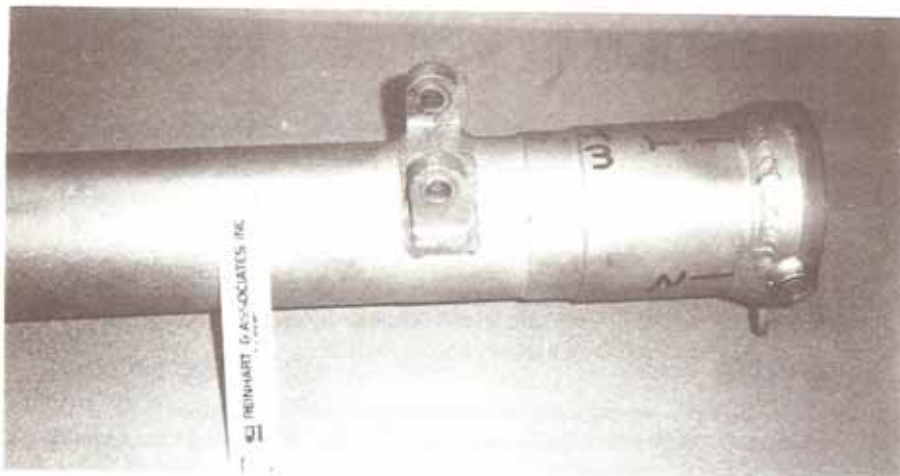


The R&A team of engineers & inspectors can quickly respond to the needs of the antique aircraft collector or operator by contacting the following numbers:

Phone: (512) 834-8911  
 FAX : (512) 834-1266  
 or write to:  
 P.O. Box 9802-303  
 Austin TX 78766

B-17G SENTIMENTAL JOURNEY - TYPICAL VINTAGE WARBIRD

## Nondestructive Inspection Services



X-ray of welds in landing gear strut for WWII P-39 Airacobra performed for Confederate Air Force, 1994.

### PARTIAL LIST OF CLIENTS

#### Aircraft or Aircraft Component Inspections (Includes Ground Handling Equipment)

Aeromagic Formula One Racing Team, San Marcos, Texas  
Air Moose, Austin, Texas  
All American Maintenance, San Antonio, Texas  
AR Machining, Austin, Texas  
Austin Aerodyne, Austin, Texas  
Berry Aviation, San Marcos, Texas  
City of Austin, Robert Mueller Airport, Austin, Texas  
Confederate Air Force, San Marcos, Texas  
Dee Howard Company, San Antonio, Texas  
Executive Air, Austin, Texas  
Lockheed, Austin, Texas  
Pilots Choice, Austin, Texas

### PROFESSIONAL AFFILIATIONS

American Society for Nondestructive Testing  
American Society of Mechanical Engineers  
Confederate Air Force, Inc.  
Lone Star Flight Museum  
National Society of Professional Engineers  
Texas Society of Professional Engineers

### ADDITIONAL SERVICES

- Aircraft Inspection, Technical Service Bulletin - ACI-01
- Nondestructive Examination of Gas Turbine Rotors & Components, GTE-01
- Training in Nondestructive Evaluation, TNE-02
- Structural Inspection, SIS-01
- Predictive/Preventive Maintenance Engineering, P/PM-01
- Industrial Photography and Expert Witness Services, IPX-01