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FROM J. Haffeman

SUBJECT Service Engineering Memo No. 37

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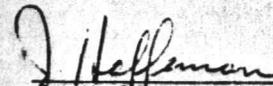
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Procedure for hand-cleaning HP and LP Compressor Rotor Blades and Stator Vanes.

Some engines with reported low power have been found contaminated with F58 fire retardant material in their compressors. The contamination is usually a thick honey-like substance coating the low and high pressure compressor blades and stators. The fire retardant leaches out of a wet V-Pack Filter and is ingested into the engine.

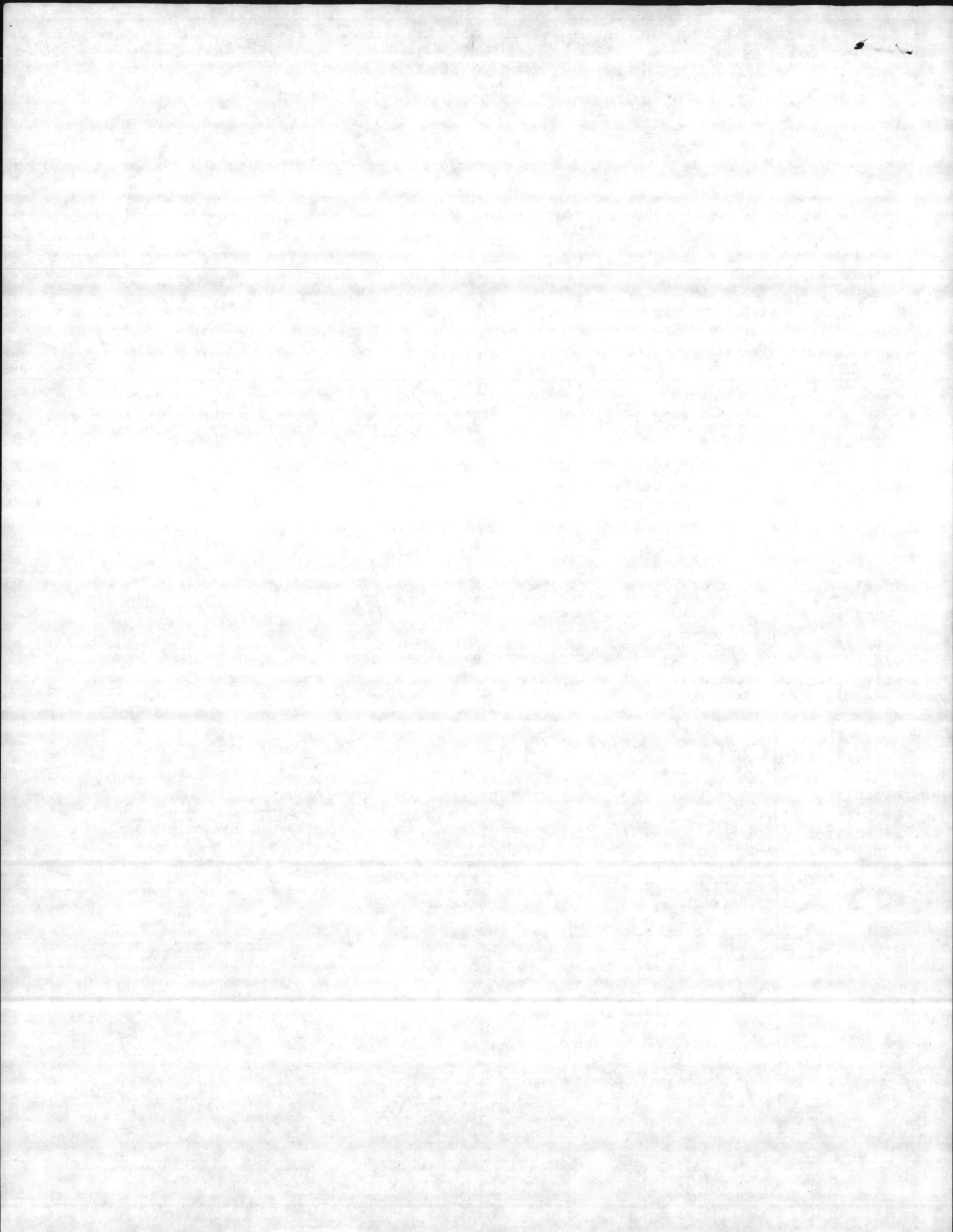
The compressor cleaning process must be accomplished by hand. The first several stages of the LP compressor are easier to clean because the fire retardant is in a semi-fluid state and a little elbow grease, brushes, and B&B 3100 can accomplish a lot. The last stage of the LP compressor and the entire HP compressor is much harder to clean because the fire retardant bakes on and turns to hard coke because of the heat generated (temperature rise across the compressor) in the compression cycle.

Attached is the accepted cleaning procedure developed at Aberdeen Proving Ground, MD by Avco Personnel and approved the the Army.

  
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J. Haffeman, Manager  
AGT 1500 Field Support

JH/mm  
Attach.

FIELD REPS: READ, INITIAL AND RETURN \_\_\_\_\_



AGT 1500 GAS TURBINE ENGINE (M1E1)  
COMPRESSOR FIELD CLEANING PROCEDURE



o Material Required

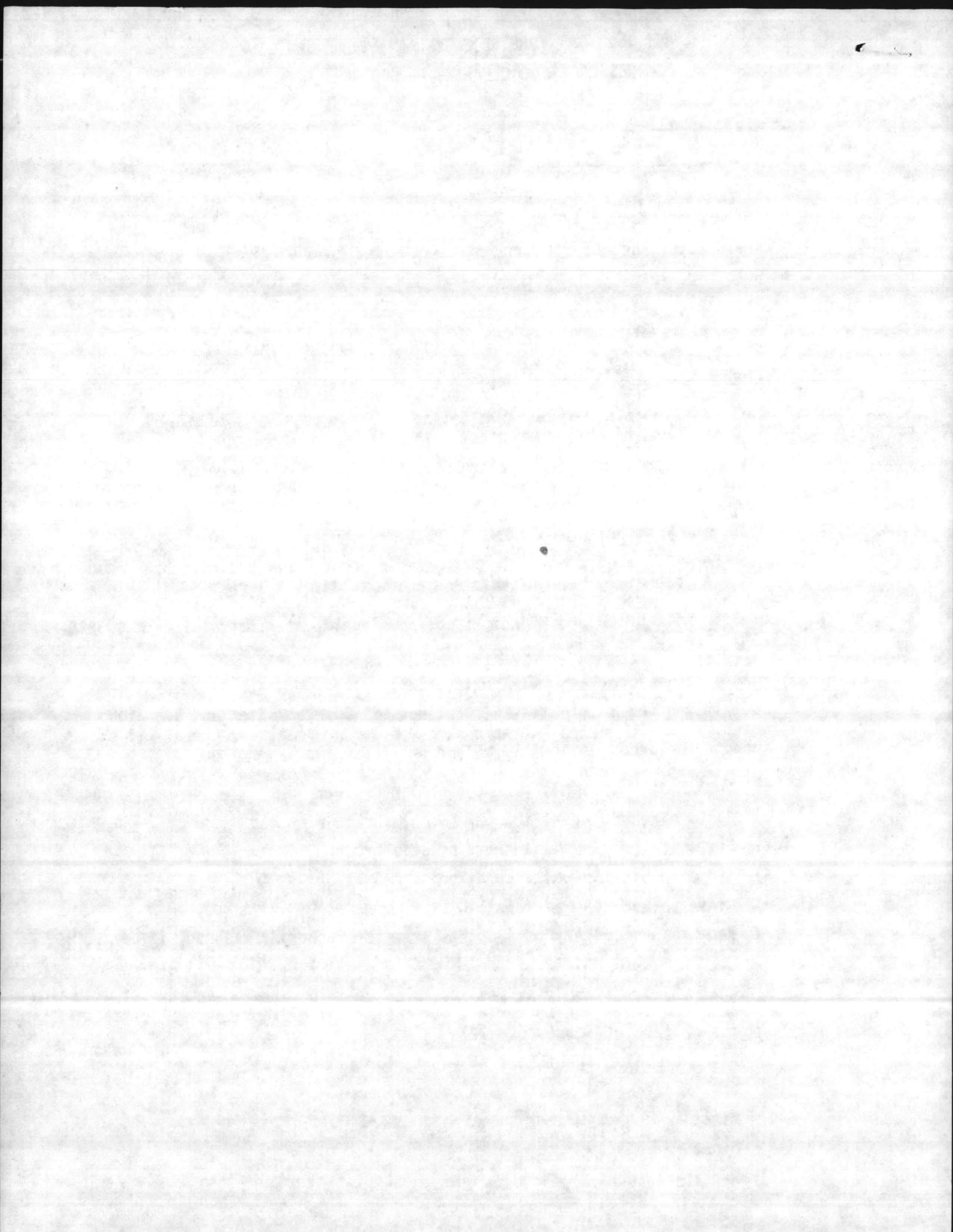
- o 2 gallon pail with cover
- o Easy Off oven cleaner
- o Carburetor cleaner P/D No. 73
- o Fresh water and B&B (4 parts of water mixed to 1 part of B&B 3100)
- o Rubber gloves
- o Protective eye glasses
- o Tooth brush with nylon or bristle (non metallic brush)

o Caution Note:

- o Easy Off oven cleaner has an alkaline base and may cause mild burn or rash when it comes in contact with skin.
- o Clean all components in a well ventilated area, cleaning agents may be toxic
- o Keep Easy Off oven cleaner away from METCO 601 coating on compressor lands and from base (ID) of stators. (see figures 6 and 18)
- o Keep Easy Off oven cleaner and P/D carburetor cleaner off of rubber "O" ring material, carbon seals and non metallics.

A. Remove top half of LP and HP compressor housing (in accordance with TM 9-3835-255-34)

1. Remove each stator assembly half (LP/HP)
2. Soak stator for 30 minutes in solution, 4:1 hot tap water and B&B 3100. Scrub vanes with nylon toothbrush or similar non metallic brush. If stator cannot be cleaned using this method use the following method.
  - a) Soak stator assembly with carburetor cleaner
  - b) Allow cleaning agent to soak (work) for 45 minutes
  - c) Scrub stator vanes with hard bristle brush
  - d) Rinse in hot tap water solution of B&B 3100
  - e) Rinse in hot tap water bath
  - f) Repeat as necessary until parts are satisfactorily cleaned, if parts cannot be cleaned using this method, got to step 3.
3. a) Coat stator assembly in Easy Off oven cleaning agent bein careful not to allow agent to contact abrasable seal at inner shroud of stator assemblies. (figures 6 & 12)
  - b) Allow cleaning agent to soak (work) for 45 minutes
  - c) Scrub stator vanes with hard bristle brush
  - d) Rinse in hot tap water solution of B&B 3100
  - e) Rinse in hot tap water bath
  - f) Repeat as necessary until parts are satisfactorily cleaned



4. Wash compressor housings (without stators) in solution of B&B 3100 or carburetor cleaner and flush with hot tap water. Dry with shop air.
  5. Install cleaned stator assembly into cleaned compressor housing.
  6. Clean inlet guide vanes with tap water mixed with B&B 3100 using a hard bristle brush and wipe clean.
  7. Wash inlet housing with tap water and B&B 3100
- B. Install assembled compressor housing halves to the engine compressor. Bolt in place.
- C. Remove AGB
- D. Remove lower half of LP and HP compressor housings
1. Clean as in steps A. 1. through A. 4.
- E. Carefully hand coat each exposed compressor blade, with Easy Off oven cleaner, and hand scrub until clean. Rinse compressor blades with solution of B&B 3100 before rotating compressor for additional cleaning. This will keep cleaning agent, Easy Off oven cleaner, away from METCO 601 coated lands in the upper compressor housing. (reference figures 6 & 12)
- F. When all compressor blades are cleaned satisfactorily and rinsed, install the lower half of both compressor housing to the engine compressor. Bolt in place.

Note:

This is a trial procedure to determine the feasibility of cleaning LP/HP compressors coated with "V" pack fire retardant material at a field site. Evaluation of this procedure will begin on M1E1 engine LE 86292 Vehicle 120-8.

