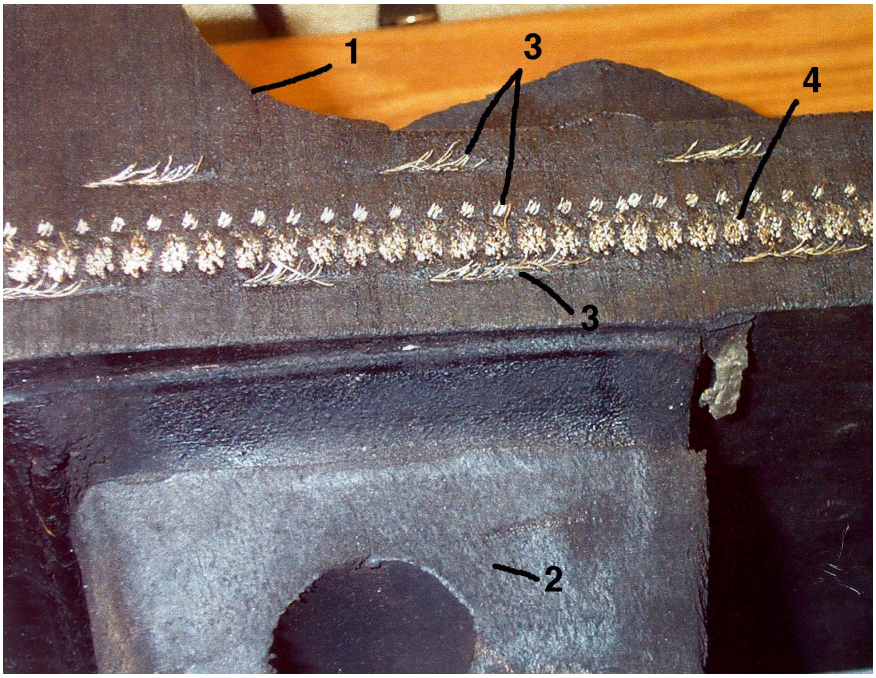
# Maximizing DEUCE Track Belt Life

The DEUCE track belt is designed to operate in many underfoot conditions along with the capability to operate on paved roads at speeds in excess of 30 MPH. The track belt materials provide a wide ambient temperature operating range from –50°F to 120°F. When comparing the DEUCE track belt to steel tracked undercarriage, there are some special considerations required to maximize the track belt life.

This document has four section:

1) Track Belt Construction
2) Factors Influencing Grouser Life
3) Hints to Minimize Track Slip
4) Track Belt Breakage

## 1) Track Belt Construction




The strength of the track is derived from the "zero degree" cable (#4 in photo). When the "zero degree" cables break, the life of the track is significantly reduced.

Item #1: Grouser – The grousers contact the ground. They are a wear surface and are similar to the grousers on steel tracked bulldozers.

Item #2: Guide Block – Guide blocks keep the track on the machine, especially when turning or when operating on uneven terrain or side slopes. Guide blocks pass between the road wheels.

Item #3: Breaker Ply – Breaker provide lateral stiffness and protection to other plies.

Item #4: Zero Degree Cable – Zero degree cables carry the track tension load. They are critical to the strength of the track.

## 2) Factors Influencing Grouser Life

When operating the DEUCE, underfoot conditions can have a major impact on grouser life. Dozing typically causes the most grouser wear or damage although a large amount of travel on paved roads can also cause significant grouser wear.

A. Typically, sandy and clay soils do not have a negative impact on grouser life. However, these materials can pack between the undercarriage components and the track belt and cause damage to the zero degree cable (see section 4. Track Belt Breakage).

B. Glacial Till is a gravel and soil mixture which can cause damage to not only the grousers but to the road wheels. Material packing also occurs in Glacial Till.

C. Rock and demolition debris can be very damaging to the track belt and road wheels. Caution should be exercised while operating in these environments.

**Note: The Operator plays an important role in determining grouser life**

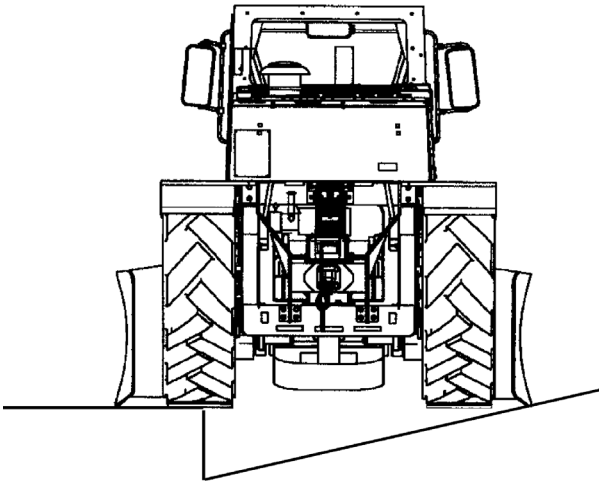
D. Track slippage is very damaging to the grousers. Track slippage should be keep to a bare minimum.

E. Avoid sharp turns when operating in loose material.

F. Avoid sharp turns when operating in rock or demolition debris.

G. Avoid sharp turns when operating on paved surfaces.

H. Do not straddle the last cut with one of the track belts.



I. Doze down hill if possible, up hill is acceptable but requires more power. Minimize side hill operation.

## 3) Hints To Minimize Track Slip

A. Use Back rippers when ever possible to break-up the material surface. This will allow increased grouser penetration and which often reduces track slippage. Refer toTM5-2430-200-10 Operating Techniques for additional information.

B. Have an observer (from a safe distance) signal when the tracks begin to slip.

C. Install a convex mirror on the backside of the blade in a location the operator can see the track belts while dozing.

D. When dozing in abrasive materials use 2$^{nd}$ gear instead of 1$^{st}$.

E. Take smaller cuts to reduce draw bar requirement.

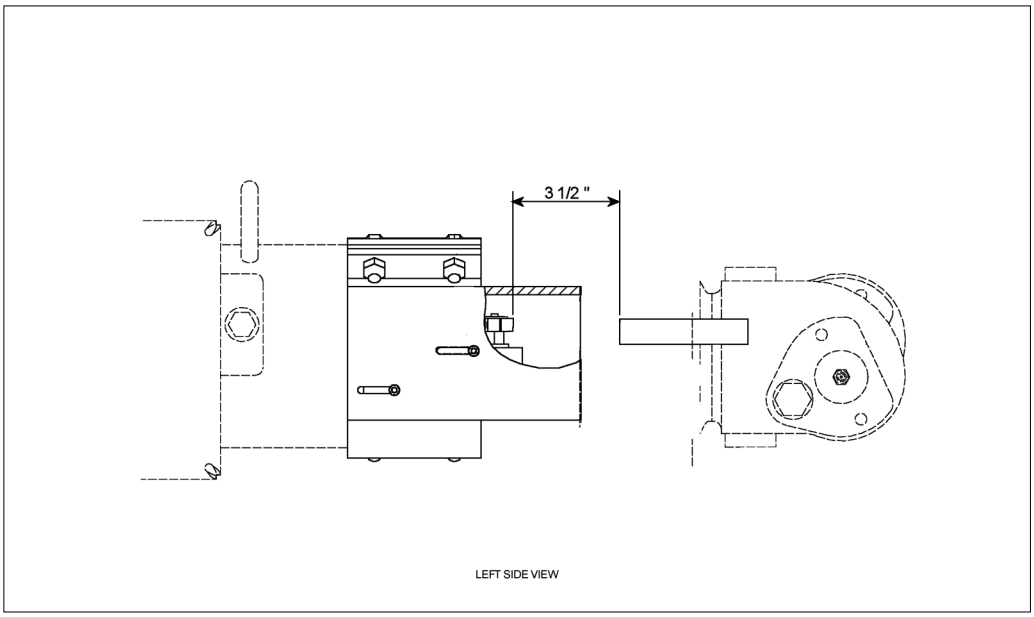
## 4) Track Belt Breakage

In certain materials there is a potential to break the track belt from over tension. Materials that pack easily such as loose sand, rock or glacial till usually create the most risk. The material packs between the drive wheel and the inside of the track belt causing the recoil cylinder to retract. When the recoil cylinder is fully retracted, the tension in the track belt increases significantly and can overload the "zero degree" cables causing them to break. Many DEUCEs are presently equipped with recoil alerts and all DEUCEs will be upgraded to have both a warning light and an audible alarm to the right of the operator. The alert is actuated when the recoil cylinder is close to being fully retracted. Note: TACOM has a 2004 Update Program to ensure all DEUCEs have the recoil alert system installed.


Recoil Lights and Alarm

If the alarm sounds or the light illuminates the operator should stop immediately and reverse direction at least the length of the DEUCE. The change in direction of travel removes the built up material from between the track belt and the drive wheel.

It is important to maintain the proper adjustment of the recoil alert switch. The adjustment is 3.5 inches from the front edge of the bar to the actuator roller. The alert operation should be checked as part of the daily PMCS. Check the operation by pushing on the switch with your finger and making sure that both the light and the alarm functions properly. This should be done on both sides of the machine.


3 1/2 "
LEFT SIDE VIEW