

2 ETON CLOSE

DATCHET

BERKS

SL3 9BE

25RD OCT 2010.

JEAR COLIN

Re 1936 SUNBEAMS.

THE DESIGN OF THE REAR HUB ON THESE MODELS IS INCORRECT.

THE FUNDAMENTAL DESIGN FAILURE IS IN SUPPORTING THE BRAKE DRUM DRIVE LINE WITH A BEARING. THE REAR HUB BEARINGS ARE SUBJECT TO AN OFFSET LOAD AS THE DRIVE LINE IS UNSUPPORTED THIS GIVING RISE TO WEAR & FAILURE OF THE WHEEL HUB BEARINGS, LOCKING NUT, & SLEEVE.

ANY SLACK IN THE BEARINGS RESORTS IN THE DRUM BUSH RUNNING ON THE FIXED SLEEVE WITH CONSEQUENTIAL DAMAGE & SEIZURE RESULTING.

THE ONLY WAY THAT THIS SITUATION CAN BE RECOVERED PROPERLY IS BY THE INTRODUCTION OF AN INA NEEDLE ROLLER RACE INTO THE DRUM BOSS AFTER REMOVAL OF THE BUSH, THIS WILL REQUIRE SOME MACHINING AND IF NECESSARY OR THE ADDITION OF A <sup>NEW</sup> BEARING HOUSING BEING MADE & FIXED TO THE INNER DRUM AFTER MACHINING OFF THE EXISTING ONE.

WHICHEVER WAY, A THIRD BEARING MUST BE INSTALLED BELOW THE CHAIN DRIVE LINE TO PREVENT TORQUE BEING TRANSFERRED TO THE HUB BEARINGS.

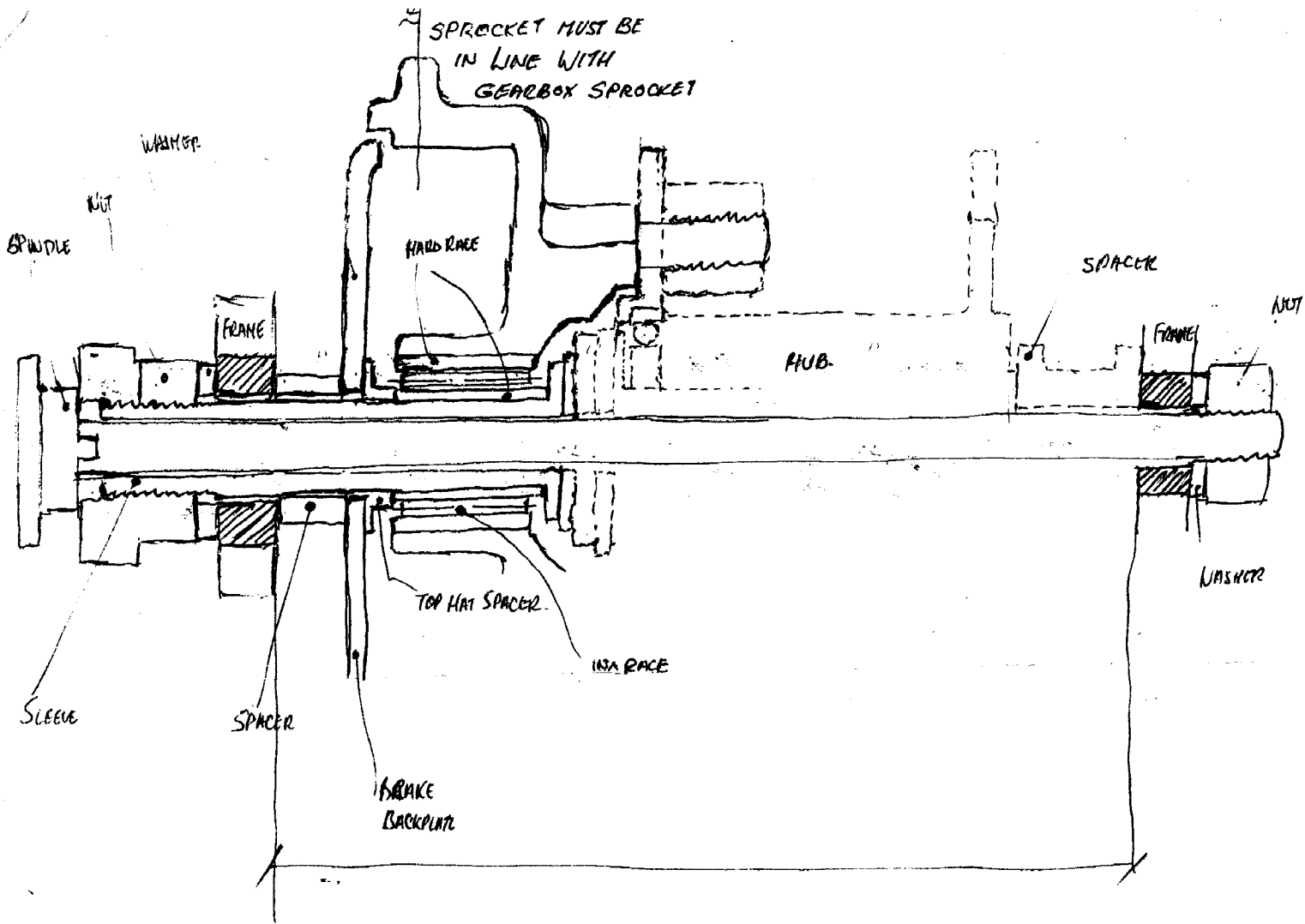
THIS IS NECESSARY AS THE BIKE IS SO HEAVY THAT MORE POWER IS NEEDED TO MOVE IT THAN THE LIGHTER PRE '36 MODELS WHICH DID HAVE A LARGE BEARING CONTAINED WITHIN THE DRIVE HUB/SPROCKET.

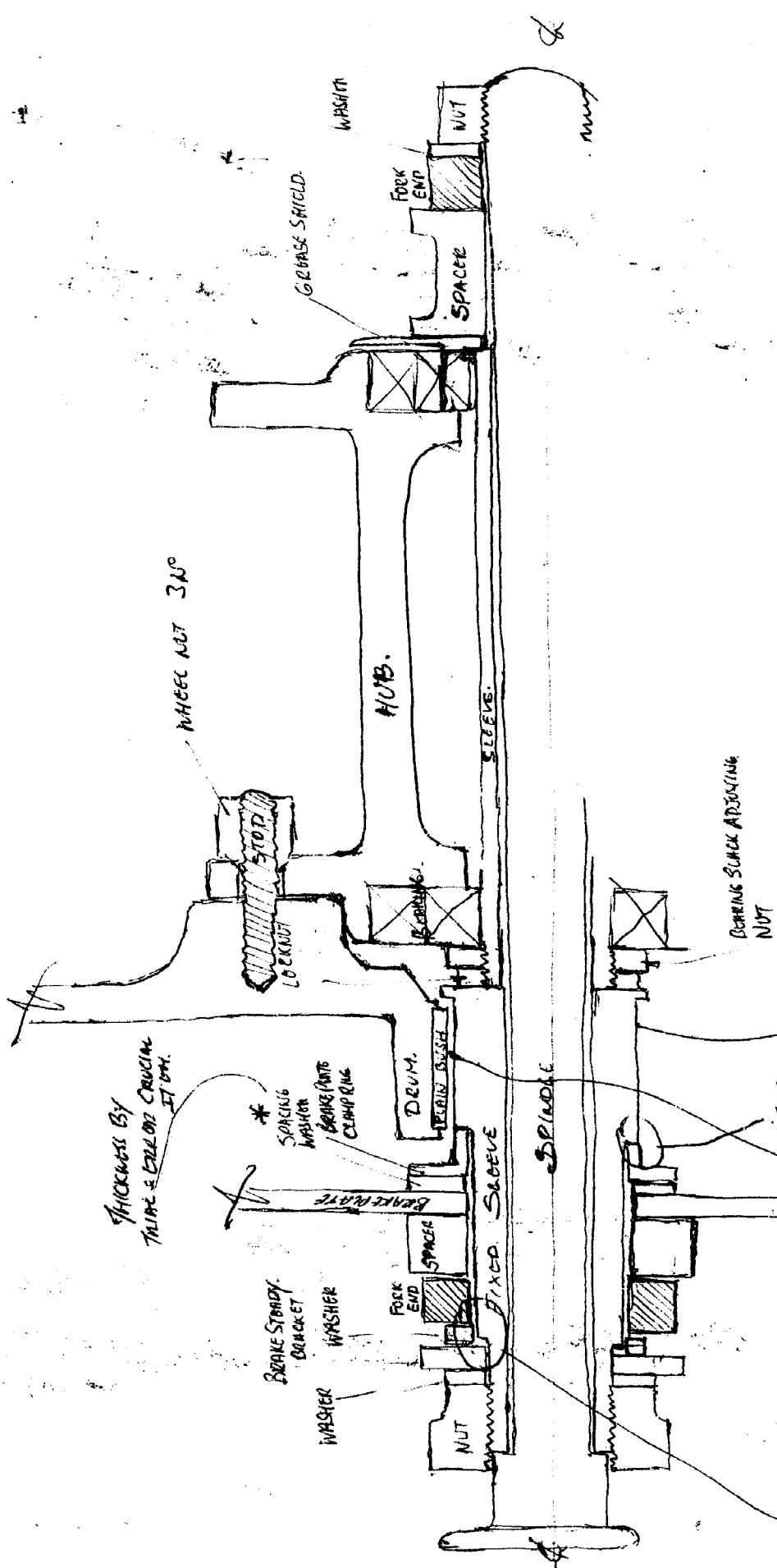
THE TWO DRGS ARE ATTACHED TO DEMONSTRATE WHAT IS REQUIRED.

HOPe THIS HELPS.

BEST WISHES.

Jear





REAR WHEEL DETAIL.

THE SECRET IS THAT ALL PARTS ON THE FIXED SLEEVE PULL UP TIGHT WITH THE SLEEVE NUT & THE WHEEL SPINDLE PULL UP TIGHT FROM THE OTHER END. & THE DRUM IS SUSPENDED BY THE 3 WHEEL NUT STUDS TO THE HUB & THE DRUM TOUCHES NOTHING & THE WHEEL BEARING HAVE WORKING TOLERANCE & THE DRUM STILL TOUCHES NOTHING

THICKNESS BY THREE & CROWN CIRCUMFERENCE

\* SPACING WASHER, BRACKET CLAMPING

NOTE HOW THIS FEELTS TIGHT WORKER BUT NOT BRACKET

CLEARANCE

SAY .020" MIN.

CLEARANCE

2 ETON CLOSE  
DATCHET  
BERKS

SL39BL

JEFF CHRIS

1936 SUNBEAM REAR WHEEL.

7.7.77

HEREWITH A NUMBER OF DRAWINGS & SKETCHES SHOWING THE PROBLEM INCLUDING A LETTER FROM THE LATE JEFF DAVIES RE HIS SUNBEAM THAT SUFFERED THE SAME PROBLEM AS MINE.

THESE SKETCHES SHOW THE NATURE OF THE PROBLEM IS AN OFFSET TORQUE LOAD APPLIED TO THE REAR WHEEL BEARINGS. THIS VECTOR LOAD INCREASES THE SIDE LOADING OF THE REAR WHEEL BEARINGS, ESPECIALLY THE NEARSIDE ONE TO THE DEGREE THAT THE BEARING HOUSING WITHIN THE WHEEL IS DAMAGED, BEARING SEIZE, AND THE THREADS ON THE CENTRE SLEEVE STRIP WHICH HOLD THE BEARINGS IN THE HUB, THE ABOVE ALLOWS THE HUB/DRUM TO BE UNSUPPORTED & COLLAPSE ONTO THE OUTER RETAINING SLEEVE & WEAR OUT BOTH THE SLEEVE LAND & THE BUSH.

THAT IS WHY THE WHOLE THING NEEDS TO BE COMPLETELY REDESIGN AS IT IS NOT FIT FOR PURPOSE. THE CURRENT DESIGN FAILED VERY EARLY ON WITH MY BIKE WHEN I FITTED THE 95R ENGINE IN WHICH PRODUCED SEVERAL MORE HORSES THAN THE STANDARD MOTOR & HIGHLIGHT THE PROBLEM. EVENTUALLY WHEN CRUISING AT 70 PER ON A LONG RUN THE HUB COLLAPSED ONTO THE BRONZE BUSH WHEN THE THREADS & HOUSING FAILED & THE BALL RACE PARTLY CAME OUT OF THE WHEEL HUB RELEASING THE GREASE WHICH CAUGHT FIRE WITH THE HEAT & FRICTION GENERATED BY THE BUSH RUNNING ON THE SHAFT. I HAD NOT REALISED THAT THE SMOKE WAS COMING FROM THE REAR HUB & NOT THE EXHAUST PIPE UNTIL ARRIVING AT HOME.

THIS WAS ONE OF THE MAIN REASONS I SOLD THE BIKE, IT IS NOW SOMEONE ELSE'S PROBLEM. I PUT THE NOT RETAINING THE BEARING ONTO THE SHAFT REVERSED PICKING UP ON THE REMAINING SPINDLE CENTRE THREADS, LOCKTITED THE BEARING IN & SOLD THE BIKE. IT WAS OK AT MODEST SPEEDS & SAFE, BUT NOT LONG TERM OR PRACTICAL.

THANKS FOR LENDING ME THE GEAR THIS IS SUBJECT TO REDESIGN & RE SPECIFICATION OF MATERIAL. AM WORKING WITH HERBIE FISHER TO ENGINEER A SOLUTION AT PRESENT THE QUANTITY STANDS AT 3 NO PER THIS I FEEL WILL INCREASE AFTER SUCCESSFUL TESTING IN MY 95R MOTOR IT WILL BE TESTED! I CAN ASSURE YOU.

BEST REGARDS

P.T.O.

BORE CONC WITH  
DRUM I/D  
TO 2ND BEARING HT  
AFTER FIXING HOUSING.  
2ND REGISTER.

NEW BEARING  
HOUSING

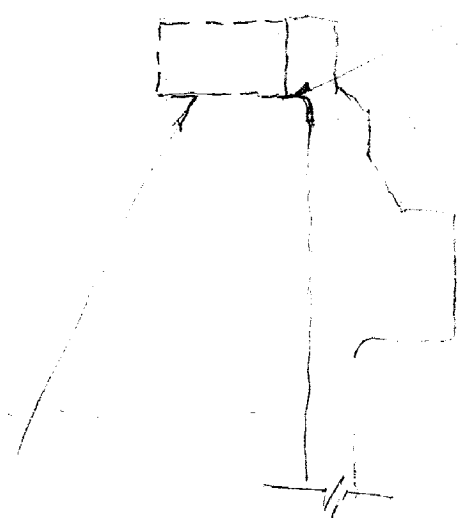
NEW SEALED  
BALL RACE.

EXISTING HUB/DRUM/SPOCKET

WHEEL BOLTS

DOWEL & BOLT NEW  
BEARING HOUSING TO HUB  
OFF CRS TO WHEEL BOLTS.  
+ 3 ALLEN SCREWS.

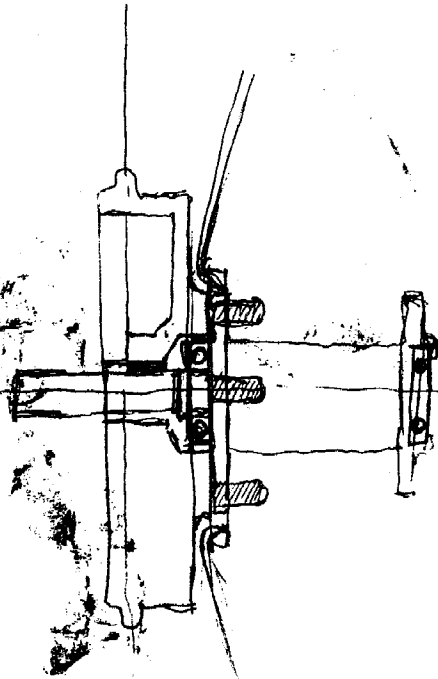
PUSH FIT OVER SLEEVES.



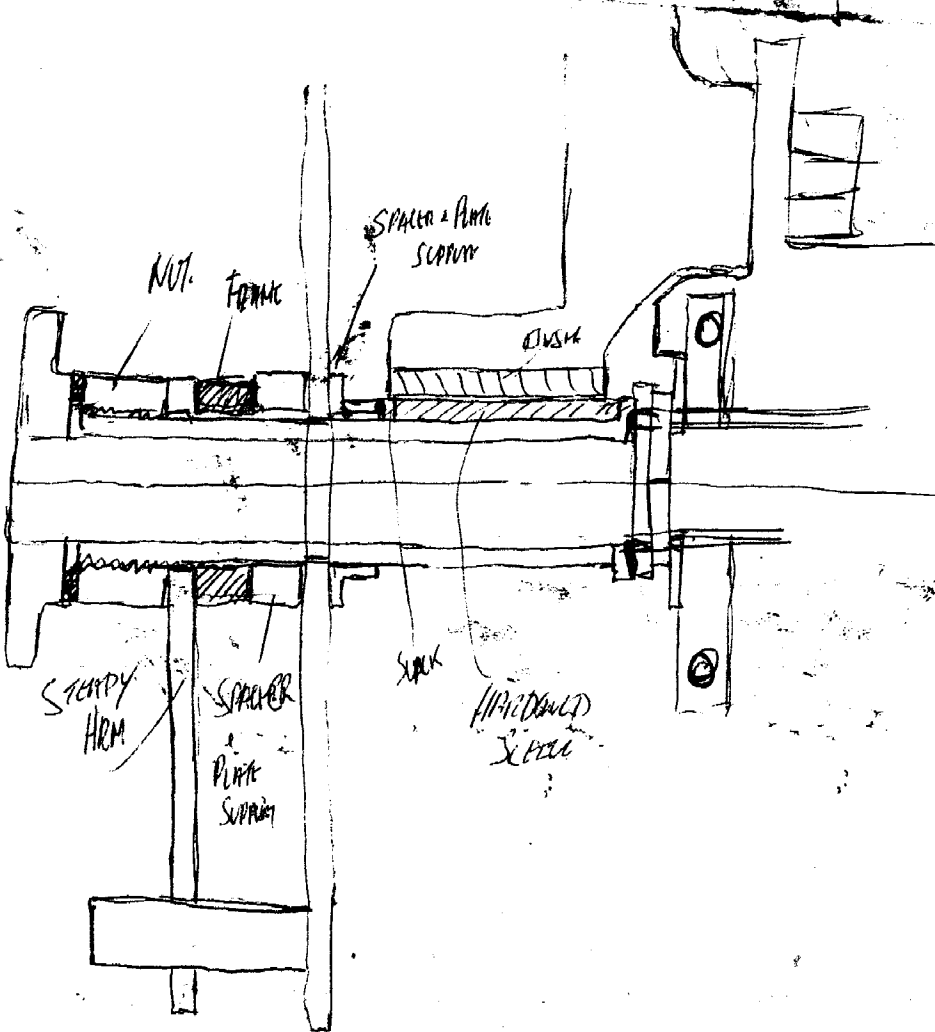
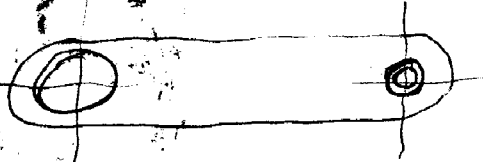
MAINTAIN A CONCENTRIC REGISTER AND  
MACHINE CONC TO DRUM I/D.  
1ST REGISTER.

MACHINE OFF EXISTING BOSS

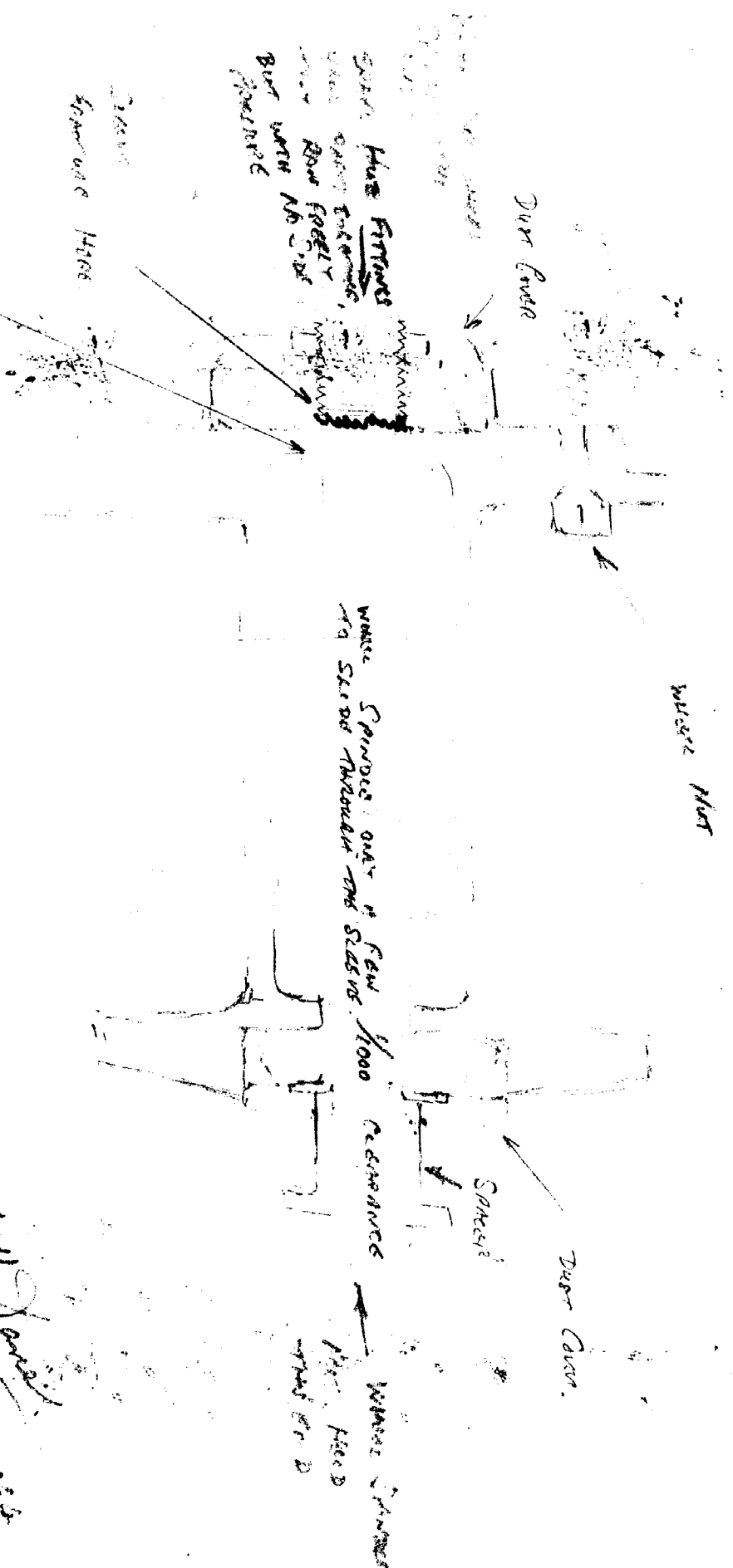
A. SUGGESTION.  
Horn  
Jan.



2.975  
 .425  
 .375  
 2.125



NOTHING WAS FOUND WHEN THE HUBS AND SPINDLE WAS REMOVED OR DISASSEMBLED  
 CHECKED THE PROCEEDINGS AS THE HUBS AND SPINDLE FROM WERE CHECKED WITHOUT  
 TO SHOW UP WITH PROBABLY CORRECT AND RECORDED FROM WERE CHECKED WITHOUT  
 HUBS AND SPINDLE WAS FOUND.



THE ENDS OF RAIL HUB - WHEN SEVERE DISTURBED  
 PUT PASSED ON THE SEVERE CRACKING IN  
 FORMS ON THE WHEEL SPINDLE IN THE RAILWAYS  
 THIS IS THE SEVERE POSITION IN THE WHEEL SPINDLE  
 WHEN THE SEVERE CRACKING WAS FOUND. THE WHEEL  
 SPINDLE WAS FOUND IN THE WHEEL SPINDLE.

Jeff Jones  
 3rd Mt. 1955