Adjusting '39-'42 Brakes: This is from a collection of tips sent to me from "rumble seat"

I used to hate these brakes because of the adjustable double anchor when I was a mechanic in the mid fifties. Then a fellow mechanic showed me a Ford Service bulletin. Ever since then, I have preferred these to the '46-'48 units since I can get a better adjustment.

These are Lockheed brakes which use eccentric washers in conjunction with non-eccentric anchor pins to position the shoes. The top of the shoe is controlled by an eccentric cam (usually 11/16") located near the top of the shoe. The anchor pins, located at the bottom of the backing plate, control the shoe position by turning the eccentric washers at the bottom of the shoe. These anchor pins have locating on the elongated 1/4" adjuster. The locating marks may be a dot or an arrow, I'm assuming everything is in good condition and not rusty or frozen.

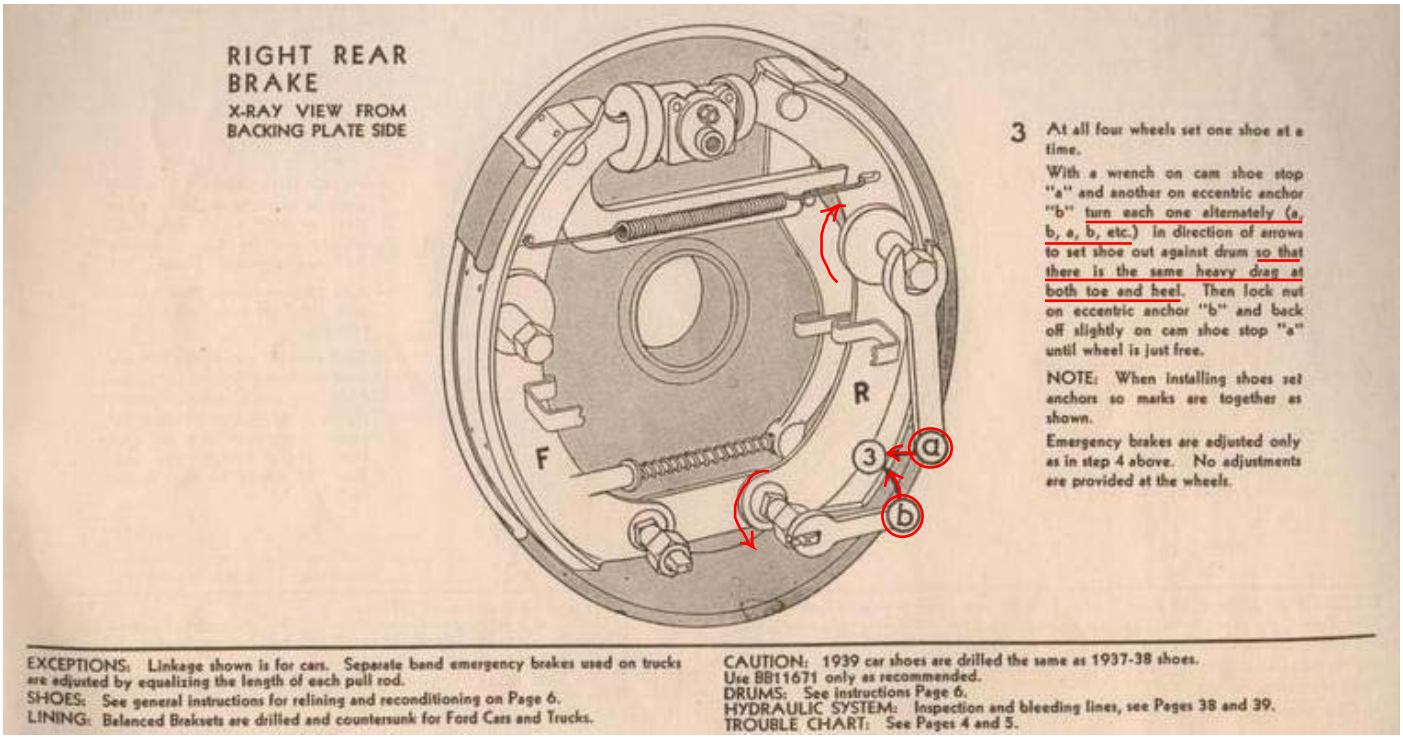
Step 1: Loosen the anchor pin large lock nuts (usually 3/4") on both shoes of one wheel just barley enough to permit turning the 1/4" anchor pin adjusters. Now, turn both of the 1/4" adjusters so the locator marks face directly towards each other. This next point is important .... **All further adjustments are made by turning the anchor pins (1/4") and eccentric (11/16") downwards.**

Step 2: Back off the upper eccentric cam adjusters on both shoes until the wheel rotates freely.

Step 3: Now turn one of the upper eccentric (11/16") until the wheel cannot be turned.

Step 4: Now turn it's 1/4" anchor pin adjuster downward until the wheel just turns freely. This lowers the shoe and moves the toe of the shoe away from the drum and results in fuller shoe contact.

Step 5: Now go back to Step 3 and do it and step 4 again to the same shoe. Repeat as necessary until turning the 1/4" anchor pin adjuster will no longer free up the wheel. Back off both anchor pin adjuster and upper eccentric just enough so the wheel has a slight drag. Tighten the anchor pin lock nut (3/4") without letting the anchor pin adjuster move. Now do the other shoe the same way.



This chart outlines the standard procedure of performing the operations listed with the time required for each.

GENERAL INSPECTION—A, B, C, D, etc., comprise the steps other than actual adjustments necessary for a thorough job.

0.5 Hr. MINOR ADJUSTMENT—Steps 3 and F are those required to compensate for slight lining wear.

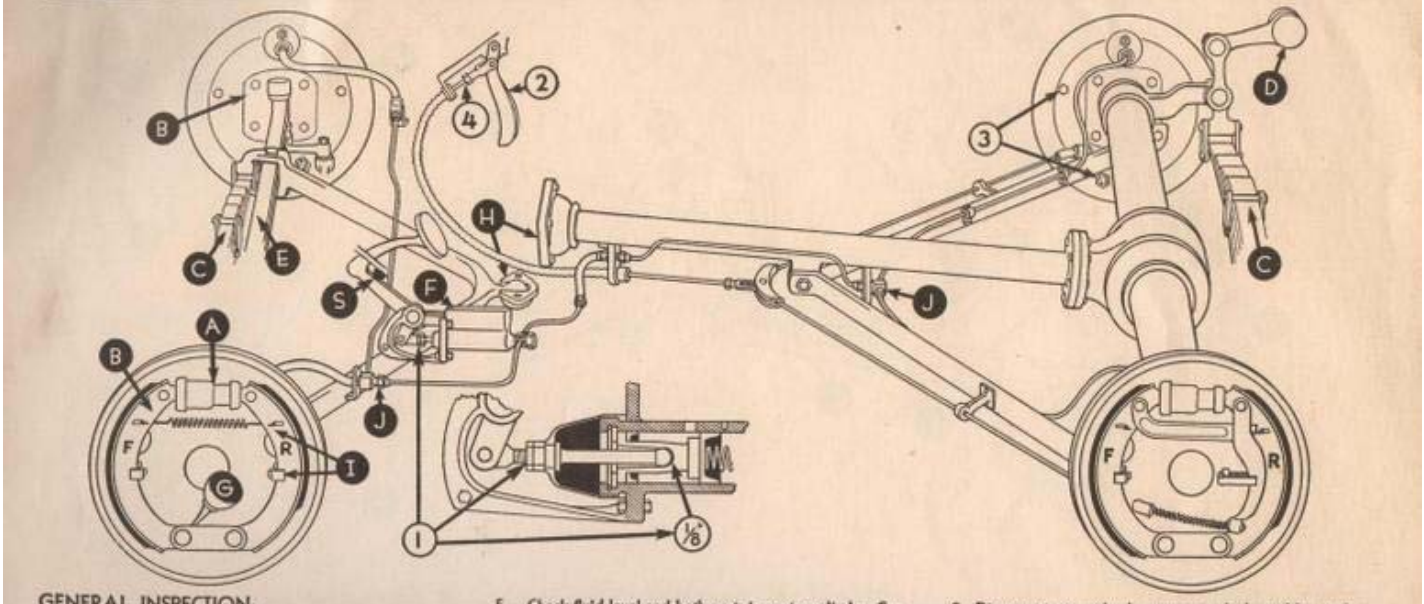
2.0 Hr. MAJOR ADJUSTMENT—Steps F and 1 to 5 are those required to adjust foot pedal, to compensate for lining wear and as a first step in correcting troubles. Includes removing all wheels and examining wheel cylinders and lining.

4.3 Hr. RELINE BRAKES—Includes all operations listed. Remove and replace brake shoes. The price of the lining or exchange shoes used must be added. Reline and recondition shoes as shown on Page 6.

FORD HYDRAULIC

CARS & LIGHT TRUCKS 1939-42

1½ TON TRUCKS 1939-42



GENERAL INSPECTION:

A. At all four wheels: Clamp cylinder ends before removing shoes. Make certain pistons and cups move freely in cylinder. Renew rubber cups if there is any sign of leaks. Tighten cylinder bolts.

B. At all four wheels: Tighten backing plates. Examine wheel bearings. Make certain races do not turn on spindles. Pack with a grease that will not run when hot. Renew grease retainers. NOTE: When adjusting wheel bearings, make certain there is no side play in wheels.

C. Check both front and rear spring center bolts and tighten "U" clips.

D. Check all four shock absorbers.

E. Examine steering for loose play.

F. Check fluid level and both ports in master cylinder. See page 38.

G. Grease all anchor pins, shoe anti-rattler springs, shoe ledges and foot pedal shaft.

H. Tighten front radius rod and propeller shaft ball cap.

I. Fit shoes to drum and inspect as shown on Page 6. Renew all weak shoe return springs.

J. Examine pipes for kinks and hoses for collapse.

ADJUSTMENTS:

1. Adjust Master Cylinder Push Rod. With piston back against its stop "S", adjust push rod by turning in desired direction to give ⅛" free play before engaging piston. This movement may be measured at pedal pad. Free movement at this point should be ⅜".

2. Disconnect rear wheel emergency brake cable at the handle.

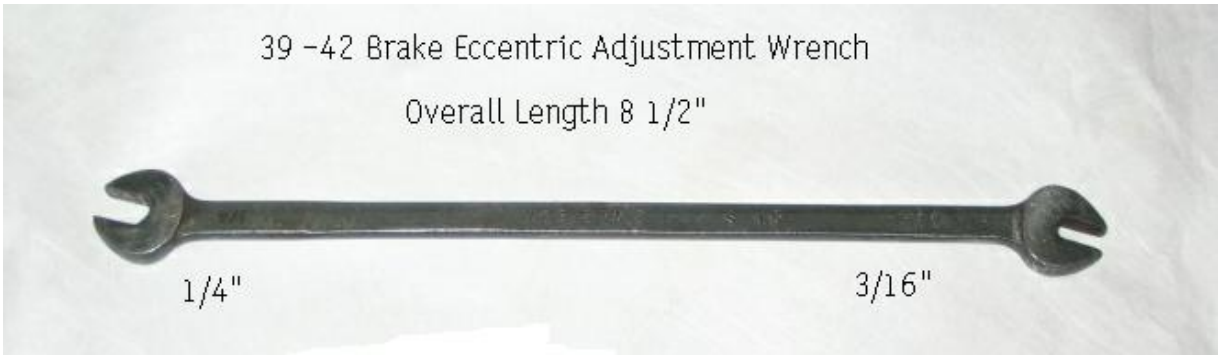
3. Adjust all eight brake shoes. See below for method.

4. Adjust emergency brake cable: Set hand brake lever in its first notch. Apply brake pedal to bring shoes out against the drums and adjust clevis so that pin just enters with all slack removed. Do not pull cable more than enough to remove slack while making this adjustment.

5. Test brakes on machine or road. Turn cam shoe stops back to loosen both shoes on tight wheel. NOTE: If any wheel continues to come in ahead of the others after leaving off on shoe stops, recheck anchor adjustments.

If you've worn the shoes badly at the top, it'll take some time to wear the heel enough so you get full brake shoe contact.
When adjusting brakes, always turn the wheel in the same direction the wheel would turn when the car travels forward.

PS: The 1/4" anchor adjustment bolts require an offset open end wrench about 8 1/2" in length to get enough leverage to turn, I think it's a special Ford tool and hard to find. BillB



Further information from Richard (EV8G) 0:17AM 09/11/2007

I wrote about this "awhile back" but the way time flies, it could have been this year, or last, or??? You can read the link shown in the post above, and you can read the Ford Service Bulletin.

Adjusting the upper hex bolts to set shoe clearance is the easy part. The confusing part is the lower anchors on 39-42's. The Service Bulletin sends you through a procedure to follow, but does not explain why or what needs to be achieved.

The purpose of the lower anchors, which are eccentrics, is to properly position/center the linings in the drums, so that full lining contact can occur. OF FIRST IMPORTANCE is to have the new linings arc ground to fit the arc of the drums, which may be different on each drum, depending on the oversize of the drum. If this is not done, you are rolling the dice on whether the lining is too large of an arc (and will only contact the drum at the ends) or too small (and will only contact the drum at the center of the lining)- in either case, full contact cannot occur regardless of the anchor adjustment. Note also that the lower anchor adjustment is only required when installing new linings.

Once the anchor studs are set and the lock nuts are tightened, the shoes will not move out of center with the drums, and thereafter only the upper adjustment need be performed to compensate for lining wear.

In a nutshell, assemble the anchors with the dots facing each other as a starting point. Make sure that the drum turns freely, then adjust the uppers until they don't, then back them off until they do.

Have a helper apply about 30lbs of pressure to the brake pedal while (with the lock nut loosened) turning the flat on the anchor stud in each direction to cause the lining to impact the drum in both directions, then set the anchor in about the middle of that travel, hold the stud while tightening the lock nut. This essentially centers the lining up/down in the drum, allowing it to make full contact
when the brakes are applied. This operation is done to each anchor/shoe/lining separately. When all have been done, again adjust the upper (clearance) hex heads until the shoes are just barely off of the drums.

Road test and readjust as necessary to make it stop good and straight.

It is also important to have at least 1/16" of free travel of the Mcyl pushrod before it starts moving the Mcyl piston; otherwise, the brakes will not fully release, will get hot and will lock up.

The above is not exactly the same procedure as provided elsewhere, but it is what I do and it seems to work well. If you keep in mind what you are trying to accomplish, it makes sense.

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