CLAIMS:

1. A method for improving thermo-oxidative stability and elastomer compatibility in an apparatus lubricated with a lubricating oil by using as the lubricating oil a formulated oil comprising a lubricating oil base stock; wherein the lubricating oil ~~base stock~~ comprises from about 25 to 50 wt. % of a multi-aromatic base stock of the formula:

$$R^1 - R^2 - (X - R^2)_n - R^1$$

wherein each R^1 is the same or different and is a terminal group, each R^2 is the same or different and represents a substituted or unsubstituted aromatic moiety; each X is a linking moiety that is carbon-carbon single bond or a linking group, n is a number from 1 to 2000, and the ratio of the total number of aromatic ring carbon atoms to aliphatic carbon atoms in said formula is greater than 0.32:1; wherein the multi-aromatic base stock has a kinematic viscosity greater than 20 mm^2/s at 100°C; and wherein thermo-oxidative stability and elastomer compatibility are improved as compared to thermo-oxidative stability and elastomer compatibility achieved using a lubricating oil base stock other than the multi-aromatic base stock.

2. The method of claim 1 wherein, in the multi-aromatic base stock, R^2 is substituted or unsubstituted naphthalene, R^1 is H, X is an alkylene linkage, and n is a number from 1 to 1000.

3. The method of ~~claims 1 and 2~~ claim 1 wherein, in the multi-aromatic base stock, the ratio of the total number of aromatic ring carbon atoms to aliphatic carbon atoms in said formula is greater than 0.44:1.

4. The method of ~~claims 1-3~~ claim 1 wherein the multi-aromatic base stock comprises 1,1'-binaphthyl, 2,2'-binaphthyl, alkyl-1,1'-binaphthyl, bis-α-methylnaphthalene methane, bis-β-methylnaphthalene methane, alkylated bis-α-methylnaphthalene methane, alkylated bis-β-methylnaphthalene methane, 1,1'-(1,2-

ethanediyl)bis-naphthalene, alkylated 1,1'-(1,2-ethanediyl)bis-naphthalene, or mixtures thereof.

~~5. The method of claims 1-4 wherein the multi-aromatic base stock is present in an amount from 5 weight percent to 95 weight percent, based on the total weight of the lubricating oil.~~

5. The method of claim 1 wherein the lubricating oil further comprises a Group I, II, III, IV or V base oil stock,

6. The method of claim 1 wherein the lubricating oil further comprises a poly alpha olefin (PAO) or gas-to-liquid (GTL) oil base stock.

7. The method of claim 1 wherein the lubricating oil further comprises one or more of a viscosity improver, antioxidant, detergent, dispersant, pour point depressant, corrosion inhibitor, metal deactivator, seal compatibility additive, anti-foam agent, inhibitor, and anti-rust additive.

~~6.~~8. A lubricating oil comprising a lubricating oil base stock; wherein the lubricating oil ~~base stock~~ comprises from about 25 to 50 wt. % of a multi-aromatic base stock of the formula:

$$R^1 - R^2 - (X - R^2)_n - R^1$$

wherein each R^1 is the same or different and is a terminal group, each R^2 is the same or different and represents a substituted or unsubstituted aromatic moiety; each X is a linking moiety that is carbon-carbon single bond or a linking group, n is a number from 1 to 2000, and the ratio of the total number of aromatic ring carbon atoms to aliphatic carbon atoms in said formula is greater than 0.32:1; wherein the multi-aromatic base stock has a kinematic viscosity greater than 20 mm^2/s at 100°C; and wherein, in an apparatus lubricated with said lubricating oil, thermo-oxidative stability and elastomer compatibility are improved as compared to thermo-oxidative

stability and elastomer compatibility achieved using a lubricating oil base stock other than the multi-aromatic base stock.

~~7.~~9. The lubricating oil of claim ~~6~~ 8 wherein, in the multi-aromatic base stock, R^2 is substituted or unsubstituted naphthalene, R^1 is H, X is an alkylene linkage, and n is a number from 1 to 1000.

~~8.~~10. The lubricating oil of ~~claims 6 and 7~~ claim 8 wherein, in the multi-aromatic base stock, the ratio of the total number of aromatic ring carbon atoms to aliphatic carbon atoms in said formula is greater than 0.44:1.

~~9.~~11. The lubricating oil of ~~claims 6-8~~ claim 8 wherein the multi-aromatic base stock comprises 1,1'-binaphthyl, 2,2'-binaphthyl, alkyl-1,1'-binaphthyl, bis-α-methylnaphthalene methane, bis-β-methylnaphthalene methane, alkylated bis-α-methylnaphthalene methane, alkylated bis-β-methylnaphthalene methane, 1,1'-(1,2-ethanediyl)bis-naphthalene, alkylated 1,1'-(1,2-ethanediyl)bis-naphthalene, or mixtures thereof.

12. The lubricating oil of claim 8 wherein the lubricating oil further comprises a Group I, II, III, IV or V base oil stock.

13. The lubricating oil of claim 8 wherein the lubricating oil further comprises a poly alpha olefin (PAO) or gas-to-liquid (GTL) oil base stock.

14. The lubricating oil of claim 8 wherein the lubricating oil further comprises one or more of a viscosity improver, antioxidant, detergent, dispersant, pour point depressant, corrosion inhibitor, metal deactivator, seal compatibility additive, anti-foam agent, inhibitor, and anti-rust additive.

15. The method of claim 7 wherein the lubricating oil comprises a multi-aromatic base stock, a salicylate, sulfonate or phenate based detergent, an ashless antioxidant, a succinimide based dispersant, a zinc dialkyldithiophosphate (ZDDP), a friction modifier, a corrosion inhibitor, and a defoamant.

16. The lubricating oil of claim 14 which comprises a multi-aromatic base stock, a salicylate, sulfonate or phenate based detergent, an ashless antioxidant, a succinimide based dispersant, a zinc dialkyldithiophosphate (ZDDP), a friction modifier, a corrosion inhibitor, and a defoamant.

~~10. The lubricating oil of claims 6-9 wherein the multi-aromatic base stock is present in an amount from 5 weight percent to 95 weight percent, based on the total weight of the lubricating oil.~~

~~11. A multi-aromatic base stock of the formula:~~

$$R^1-R^2-(X-R^2)_n-R^1$$

~~wherein each R^1 is the same or different and is a terminal group, each R^2 is the same or different and represents a substituted or unsubstituted aromatic moiety; each X is a linking moiety that is carbon-carbon single bond or a linking group, n is a number from 1 to 2000, and the ratio of the total number of aromatic ring carbon atoms to aliphatic carbon atoms in said formula is greater than 0.32:1; wherein the multi-aromatic base stock has a kinematic viscosity greater than 20 mm^2/s at 100°C; and wherein, in an apparatus lubricated with a lubricating oil comprising said multi-aromatic base stock, thermo-oxidative stability and elastomer compatibility are improved as compared to thermo-oxidative stability and elastomer compatibility achieved using a lubricating oil base stock other than the multi-aromatic base stock.~~

~~12. The multi-aromatic base stock of claim 11 wherein R^2 is substituted or unsubstituted naphthalene, R^1 is H, X is an alkylene linkage, and n is a number from 1 to 1000.~~

~~13. The multi-aromatic base stock of claims 11 and 12 wherein the ratio of the total number of aromatic ring carbon atoms to aliphatic carbon atoms in said formula is greater than 0.44:1.~~

~~14. The multi-aromatic base stock of claims 11-13 comprising 1,1'-binaphthyl, 2,2'-binaphthyl, alkyl-1,1'-binaphthyl, bis-α-methylnaphthalene methane, bis-β-methylnaphthalene methane, alkylated bis-α-methylnaphthalene methane, alkylated bis-β-methylnaphthalene methane, 1,1'-(1,2-ethanediyl)bis-naphthalene, alkylated 1,1'-(1,2-ethanediyl)bis-naphthalene, or mixtures thereof.~~

~~15. The lubricating oil of claim 6 which further comprises one or more of a viscosity improver, antioxidant, detergent, dispersant, pour point depressant, corrosion inhibitor, metal deactivator, seal compatibility additive, anti-foam agent, inhibitor, and anti-rust additive.~~