

CHAMPIONING ENGINE HEALTH & CONSUMER CONFIDENCE THROUGH LUBRICANT QUALITY

PRESENTED BY

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AT THE

MEMAN/LUPAN LUBRICANTS INDUSTRY WEBINAR

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OUTLINE

- ❖ PREAMBLE & DEFINITIONS
- ❖ LUBRICANTS
- ❖ LUBRICANT QUALITY
- ❖ QA/QC & LUBRICANT VALUE CHAIN
- ❖ INDUSTRY QUALITY ISSUES
- ❖ SUMMARY

PREAMBLE

❖ TOPIC ENCAPSULATES THREE CONCEPTS:

- ENGINE HEALTH
- CONSUMER CONFIDENCE
- LUBRICANT QUALITY

❖ BRIEF DEFINITIONS AND EXPLANATIONS SHOULD BE HELPFUL

ENGINE HEALTH

❖ CONCERNED ESSENTIALLY WITH INTERNAL COMBUSTION ENGINES OF AUTOMOTIVES & POWER SETS

❖ MAY BE:

- MOBILE AUTOMOTIVE: CARS/BUSES/TRUCKS/BOATS/ETC
- OFF-ROAD AUTOMOTIVES: FORK LIFTS/CRANES/TRACTORS/EARTH MOVING EQUIPMENT/ETC
- OTHERS: POWER GENERATORS/ETC

❖ ENGINE HEALTH THEREFORE REFERS TO TOTAL WELL-BEING OF THESE EQUIPMENT & MACHINERY

- EFFICIENT PERFORMANCE
- RELIABILITY
- ECONOMY

❖ LUBRICATION: A KEY COMPONENT OF FACTORS REQUIRED TO DELIVER ENGINE WELL-BEING & GOOD HEALTH

- LUBRICANTS
- APPLICATION

CONSUMER CONFIDENCE

❖ CONSUMER

- OWNER/USER/OPERATOR OF AUTOMOTIVE OR OTHER EQUIPMENT REQUIRING CONSTANT LUBRICATION FOR ENGINE WELL-BEING & GOOD HEALTH

❖ CONSUMER CONFIDENCE DERIVES FROM SATISFACTION OBTAINED FROM GOOD PERFORMANCE OF LUBRICANTS IN SUSTAINING EFFICIENT & RELIABLE ENGINE OPERATIONAL CONDITION, LEADING TO GOOD ENGINE HEALTH

LUBRICANT QUALITY

❖ EVIDENTLY, EFFECTIVE LUBRICATION IS CORE TO GOOD ENGINE HEALTH AND HENCE CONSUMER CONFIDENCE

❖ EFFECTIVE LUBRICATION DERIVES FROM:

- GOOD QUALITY LUBRICANT
- PROPER APPLICATION

ROLE OF LUBRICANTS

❖ PRIMARY FUNCTION:

- REDUCTION OF FRICTION BETWEEN MOVING PARTS & COMPONENTS IN CONTACT IN AN ENGINE OR OTHER RELATED DEVICE

❖ OTHER FUNCTIONS INCLUDE:

- HEAT REMOVAL/TEMPERATURE REDUCTION
- CLEANING & CONTAINMENT OF CONTAMINANTS GENERATED FROM COMBUSTION
- TRANSMISSION OF POWER
- SEALING OF JOINTS
- INSULATION OF ELECTRICAL SYSTEMS
- CORROSION PROTECTION

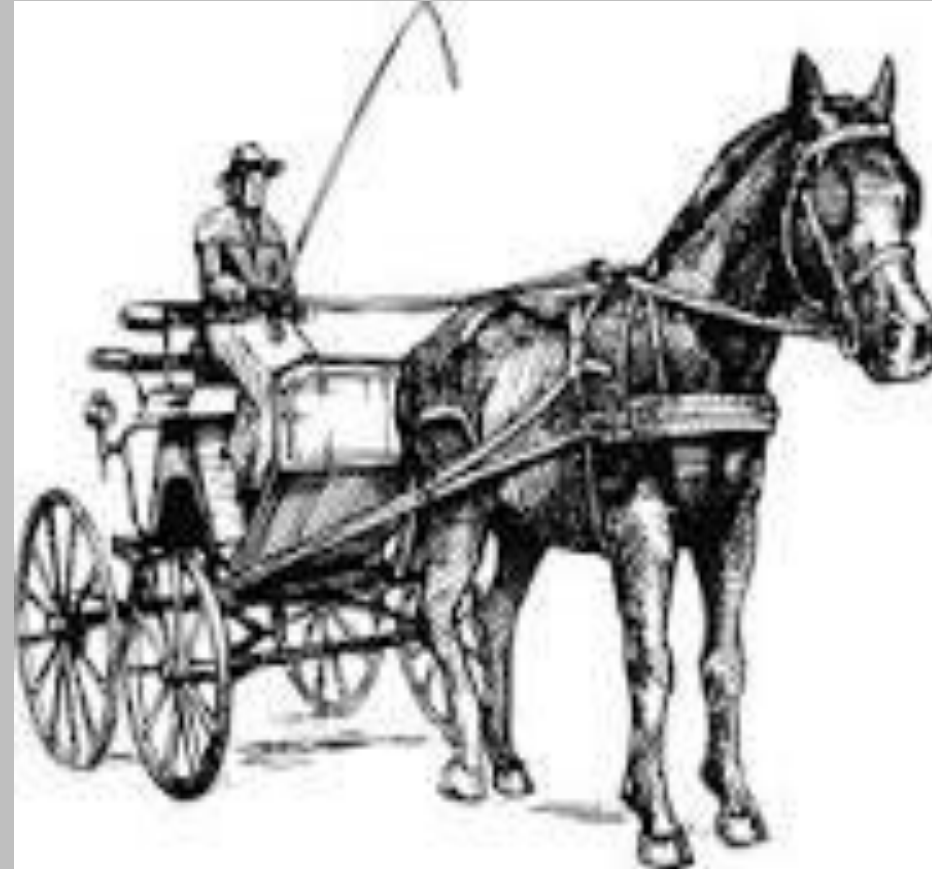
LUBRICANTS: HISTORICAL PERSPECTIVE

❖ EARLIEST FORM OF LUBRICANT WAS ANIMAL FAT APPLIED TO WOODEN WHEEL BEARINGS OF ANIMAL-DRIVEN WAGONS.

- PERFORMANCE REQUIREMENTS WERE EVIDENTLY THEN VERY LIMITED

❖ WITH MODERN INDUSTRIAL ADVANCEMENT EQUIPMENT, MACHINERY & AUTOMOTIVES HAVE BECOME MUCH FASTER, MORE ROBUST & MORE SOPHISTICATED, PUTTING GREATER DEMAND ON THE LUBRICANTS REQUIRED TO SUSTAIN THEM

- SPELLS THE NEED FOR ENHANCED LUBRICANT QUALITY



ASPECTS OF LUBRICANT QUALITY

❖ LUBRICANT QUALITY RELATES TO ITS PHYSICAL & CHEMICAL PROPERTIES, WHICH DERIVE ESSENTIALLY FROM THE LUBRICANT COMPONENTS:

- BASE OILS
- ADDITIVES
- THICKENERS

❖ BASE OILS:

- MAJOR BUILDING BLOCK & DOMINANT COMPONENT
- CAN PROVIDE SOME LUBRICATION SOLELY BUT MOSTLY INADEQUATE
- TRADITIONALLY DERIVED FROM PETROLEUM
- MORE EFFICIENT BUT COSTLIER SYNTHETICS NOW AVAILABLE

ASPECTS OF LUBRICANT QUALITY CONT'D

❖ ADDITIVES:

- CHEMICAL PRODUCTS WHICH IMPART ENHANCED QUALITY & PERFORMANCE CHARACTERISTICS ON THE FINISHED LUBRICANT
- USED IN SMALL PROPORTIONS

❖ THICKENERS:

- ESSENTIALLY RELEVANT TO GREASES

LUBRICANT ADDITIVES

	<u>TYPE</u>	<u>PURPOSE</u>
1.	DISPERSANTS	KEEP INSOLUBLE CONTAMINANTS DISPERSED IN OIL
2.	DETERGENTS	KEEP METAL SURFACES FREE OF DEPOSITS
3.	OXIDATION INHIBITORS	RETARD OXIDATIVE DEOMPOSITION OF LUBRICANTS
4.	CORROSION INHIBITORS	PREVENT CORROSION OF METAL SURFACES IN CONTACT WITH LUBRICANTS
5.	ANTI-WEAR AGENTS	ENHANCE REDUCTION OF FRICTION & WEAR
6.	EXTREME-PRESSURE AGENTS	ENHANCE REDUCTION OF FRICTION & WEAR UNDER EXTEME LOAD OR TEMPERATURE
7.	ANTI-FOAM AGENTS	SUPPRESS FOAMING & DESTABILIZE FORMED FOAM
8.	POUR-POINT DEPRESSANTS	REDUCE POUR POINT/AID FLOW AT LOW TEMPERATURE
9.	DEMULSIFIERS	KEEP WATER & OIL IN SEPARATE PHASES

LUBRICANT QUALITY PARAMETERS

❖ SET OF MEASURABLE PHYSICAL & CHEMICAL PROPERTIES OF LUBRICANTS INCLUDE:

- VISCOSITY
- VISCOSITY INDEX
- SPECIFIC GRAVITY (SG)
- COLOR
- FLASH POINT
- FOAMING CHARACTERISTICS
- COPPER CORROSION
- TOTAL BASE NUMBER (TBN)
- SULFATED ASH
- DEMULSIBILITY
- PENETRATION
- DROPPING POINT
- OIL SEPARATION
- ETC



ENGINE LUBRICANT SPECIFICATIONS

❖ DEFINE A LUBRICANT

❖ RELATED TO THE QUALITY PARAMETERS

❖ SPECIFICATIONS WELL ESTABLISHED, WITH:

- SAE VISCOSITY CLASSIFICATION (SAE-J300)
- API SERVICE CLASSIFICATIONS (API SA-SP; CA-CK-4; ETC)
- SPECS ESSENTIALLY UNIVERSAL
- COMPLIANCE DEMANDS HIGH LEVEL OF INTEGRITY FROM LUBRICANT MANUFACTURERS & MARKETERS
- REGULATORS HOWEVER HAVE THE KEY ROLE IN ENSURING COMPLIANCE

QA/QC (QUALITY ASSURANCE/QUALITY CONTROL)

❖ ESSENTIAL COMPONENT OF QUALITY MANAGEMENT PROCESS USED TO ENSURE THAT PRODUCTS, SERVICES OR PROJECTS MEET STANDARDS AND SPECIFICATIONS.

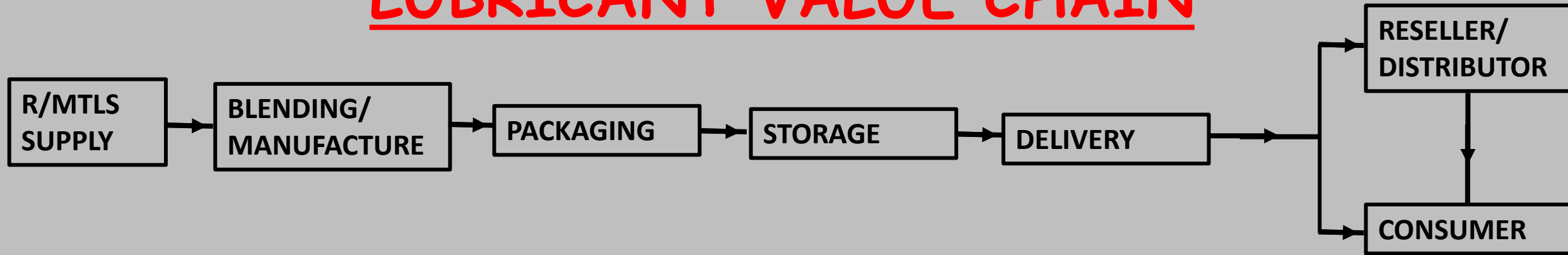
❖ QA

- PROCESS ORIENTED
- FOCUSSED ON PREVENTING DEFAULTS/DEFECTS THRU IN-BUILT SYSTEMS & PROCEDURES
- PROACTIVE & SYSTEMATIC IN NATURE
- ENTAILS PLANNING, TRAINING, STANDARDS, DOCUMENTATION, PROCEDURES, AUDITING, FOR QUALITY COMPLIANCE

❖ QC

- PRODUCT ORIENTED
- CONCERNED WITH IDENTIFICATION & CORRECTION OF DEFAULTS/DEFECTS
- ESSENTIALLY REACTIVE IN NATURE
- ENTAILS TESTING, INSPECTION & MEASUREMENT TO ENSURE QUALITY COMPLIANCE

LUBRICANT VALUE CHAIN



QA/QC IN LUBRICANT VALUE CHAIN

❖ QA/QC IMPERATIVE FOR ENSURING PRODUCT QUALITY & INTEGRITY AND FOR COMPLIANCE WITH STANDARDS IN THE LUBRICANT VALUE CHAIN

❖ QA/QC MEASURES & PROCEDURES OUGHT TO BE IMPLEMENTED AT EVERY STAGE OF THE VALUE CHAIN, FROM R/MTLS SOURCING TO END-USER APPLICATION

❖ MEASURES ULTIMATELY DELIVER OPERATIONAL EFFICIENCY & RELIABILITY OF AUTOMOTIVES & OTHER ENGINES

QA/QC IN LUBRICANT VALUE CHAIN CONT'D

	VALUE CHAIN STAGE	QA	AC
1.	RAW MATERIALS SUPPLY	<ul style="list-style-type: none"> DELIVERY PROCEDURES 	<ul style="list-style-type: none"> RAW MATERIALS TESTING (BASE OILS/ADDITIVES/GREASE CHEMICALS) SUPPLIER QUALITY CERTIFICATES
2.	BLENDING & MANUFACTURE	<ul style="list-style-type: none"> STANDARD OPERATING PROCEDURES 	<ul style="list-style-type: none"> BLENDED/MANUFACTURED PRODUCTS TESTING
3.	PACKAGING	<ul style="list-style-type: none"> STANDARD OPERATING PROCEDURES 	<ul style="list-style-type: none"> CONTAINERS EXAMINATION PACKAGED PRODUCTS INSPECTION
4.	STORAGE	<ul style="list-style-type: none"> STANDARD OPERATING PROCEDURES 	<ul style="list-style-type: none"> STORED PRODUCTS EXAMINATION
5.	DELIVERY	<ul style="list-style-type: none"> STANDARD OPERATING PROCEDURES 	<ul style="list-style-type: none"> PRODUCT QUALITY CERTIFICATES
6.	RESELLER/DISTRIBUTOR	<ul style="list-style-type: none"> STORAGE & HANDLING PROCEDURES 	<ul style="list-style-type: none"> PRODUCT QUALITY CERTIFICATE
7.	CONSUMER/END-USER	<ul style="list-style-type: none"> STORAGE & HANDLING PROCEDURES LUBRICATION PRACTICES 	<ul style="list-style-type: none"> PRODUCT QUALITY CERTIFICATE DELIVERED PRODUCTS INSPECTION

QUALITY ISSUES IN NIGERIAN LUBRICANTS INDUSTRY

❖INDUSTRY FACED WITH SEVERAL ISSUES NEGATING QUALITY STANDARDS:

- IMPORTS OF POOR QUALITY BASE OILS
- TRADE OF NON-ADDITIVATED STRAIGHT BASE OILS AS ENGINE OILS
- IMPORTS OF SUB-STANDARD FINISHED LUBRICANTS BY TRADERS
- VIOLATION OF PRODUCT STANDARDS
- FAKING/ADULTERATION OF PROVEN BRANDS

ADDRESSING THE QUALITY ISSUES

	<u>ISSUE</u>	<u>RESPONSIBILITY</u>
1.	BASE OIL IMPORTS	REGULATOR/MARKETERS
2.	NON-ADDITIVATED BASE OILS TRADE	REGULATOR PRIMARILY
3.	SUB-STANDARD LUBRICANTS IMPORTS	REGULATOR
4.	VIOLATION OF PRODUCT STANDARS	REGULATOR/MARKETERS
5.	FAKING/ADULTERATION	REGULATOR

❖ EVIDENT INTENSIVE JOINT EFFORT IS REQUIRED BETWEEN THE INDUSTRY REGULATOR (NMDPRA) & THE MANUFACTURERS/MARKETERS FOR SUCCESS

❖ IN ADDITION, A CALL IS MADE FOR CONSIDERATION FOR RETURN TO LICENSING OF SALES OUTLETS, WHICH PUTS RESPONSIBILITY FOR COMPLIANT BEHAVIOUR IN THE HANDS OF LICENSEES, WITH CLEAR PROSPECTS OF SANCTION FOR BAD BEHAVIOUR

SUMMARY

❖ IN SUMMARY:

- BY LUBRICANTS MANUFACTURERS/MARKETERS IMPLEMENTING REQUISITE QA/QC PROCEDURES IN THEIR OPERATIONS AND BY THEM COLLABORATING ACTIVELY WITH THE REGULATOR THE NIGERIAN LUBRICANTS MARKET CAN BE SANITIZED AND COMPLIANCE WITH QUALITY STANDARDS ENFORCED
- A RETURN TO WELL MEASURED LICENSING OF LUBRICANT SALES OUTLETS IN PARTICULAR SHOULD BE HELPFUL IN THE QUEST TO UPHOLD QUALITY STANDARDS IN THE INDUSTRY
- AVAILABILITY OF QUALITY LUBRICANTS IN THE MARKET WILL ASSIST ENSURE GOOD HEALTH & WELL-BEING OF AUTOMOTIVES & OTHER ENGINES AND ULTIMATELY DELIVER CONSUMER SATISFACTION & CONFIDENCE

THANKS FOR YOUR ATTENTION !

THANKS FOR THE PRIVILEGE !!