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Editorial committee:

M. R. Chandran *(Chairman)*
Khoo Kay Tuan AISP
Mahbob b. Abdullah AISP
M. Rajadurai *(Editor/Manager)*
E. Pushparajah M Agri Sc D Sc MI Biol
K.C. Arun AMN B Sc (Hons) MA FIPR
B.J. Wood B Sc FISP FI Biol

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Founded 1919

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OBJECTS foremost in the Society's Memorandum of Association are:

To promote the general interests of the planting profession.

To promote the advancement and facilitate the acquisition of that knowledge which constitutes the professional qualification of planter.

To watch over, promote and protect the mutual and individual interests of its members in respect of matters pertaining to or arising from their employment in the planting profession.

To promote and maintain good feeling, co-operation and understanding between members and their employers.

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The Planter

MAGAZINE OF THE INCORPORATED SOCIETY OF PLANTERS

(1) *The Planter* is published monthly from the Society's Office at No. 29, 31 & 33, Jalan Taman U Thant, Kuala Lumpur, Malaysia.

(2) It features original technical articles in tropical agriculture, for the benefit of the planter (in active service or practice), papers relating to the Society's Technical Education Scheme, and other contributions of more general interest.

(3) The magazine's current print order is 2 400 copies and this is steadily rising.

(4) *The Planter* is read in some 50 countries*.

(5) Copies are exchanged with a wide range of agriculturally based institutions.

(6) Subscription copies go to 32 countries.

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Editorial:

The Planter : some changes

Planter has for many years published, among other items, technical articles on subjects relevant to the planting industry. These have ranged from popular accounts of technical developments, sometimes about quite mundane albeit interesting subjects and reprints of articles from elsewhere to presentation of original scientific results.

It is our belief that the standard of the original articles has been generally good, and even excellent at times. The fact that authors continue to send their original work to *Planter* testifies to the reputation of the *Planter*, and confirms the need for such a journal.

We have been greatly aided in maintaining the standard by a willing succession of helpers, who have been prepared, on an *ad hoc* basis, to vet articles and make suggestions for improvements in their content and style of presentation.

Planter has thus come to fill a dual role, as a technical journal on plantation science, and as a house journal for ISP. We do not feel this to be bad, nor now propose to abandon it. Instead, we intend to put it on a more formal footing. The planting community becomes increasingly well-trained and versed in the science of agriculture. This is obviously a major requirement in the background of a good plantation manager, though, we hasten to add, not in our view the only one! Thus, the need for an outlet for good, original and relevant technical articles increases; both articles written by full-time scientists at the frontiers of development, and by planters themselves who have carried out a piece of research on a particular aspect of planting practice. At the same time, there is still an important role for popular accounts of experimentation previously published in learned journals of specific disciplines, and more general articles, apart from tales of the lighter experiences of planters, correspondence, news and regular features and so on, which constitute an important part of the journal. We by no means wish to frighten away such contributions, but feel that some separation of the two types of articles would be beneficial.

Therefore, the Editorial Committee has decided to initiate specific recognition of good scientific papers, be they original accounts of experimentation and their implication to practice, or serious reviews of plantation-related subjects.

To this end, the vetting of such articles will be formalised by the specific appointment, from time to time, of a panel of referees, each expert in their particular fields. Such a group has been recruited, and its members will review and comment on these papers.

The accolade 'technical article' will be printed at the heading of accepted papers, which will imply refereeing by peers, which is the mark of good quality scientific journals. Based on such refereeing, papers may be amended, delayed while research continues longer, rejected as insufficiently weighty or rigorous, and in general fully subject to the opinion of experts in the field. Papers not acceptable in this category, or course, may still appear without this hallmark. Direct relevance and clarity to the planter will be the major aspects for evaluation.

The other recent incorporation, the publication of theme issues from time to time, will mean the existence of a third group of articles – the specially invited article on a specific subject by a well-known figure in that field.

It is anticipated that through these measures, we shall be an even more eagerly sought outlet for publication, and that the reputation of the *Planter* will continue to develop as a journal important in the world of scientific agriculture. At the same time, it will retain its function as the house journal of the ISP, with opportunity to further improve these aspects.

We would, at this juncture, like to acknowledge our initial panel of referees by name, but in the true traditions of scientific publication, their anonymity will be preserved, because it is believed that their effectiveness and objectivity in reviewing is thus enhanced, particularly in cases of the papers submitted by people with whom they may be personally acquainted. It can be taken that they are all experts of the highest repute in the planting industry.

In the future, therefore, the contents page of *Planter* will carry the following statement: 'Papers marked *Technical Article* have been subject to evaluation by referees'.

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Technical Article
Planter, Kuala Lumpur **54** : 3 – 11 (1978)

Evaluation of Carbofuran as a chemical prophylactic control measure for Oryctes rhinoceros in young oil palms

P.Y. TOH

Harrisons & Crosfield (M) Sdn. Bhd., Research and Advisory Scheme

T.P. BROWN

Sungei Samak Estate, Ulu Bernam, Perak

A marked decline in incidence of young palms damaged by Oryctes rhinoceros has been observed with the application of Carbofuran in the granular form (Furadan® 3G) onto palm crowns. Application rates in the order of 1/2 – 1 oz Furadan 3G per palm at 4–6 weeks interval appear adequate.

Details of cost of chemical treatments are given.

Oryctes rhinoceros is a common pest in young oil palm and coconut plantings in Peninsular Malaysia, and is apparently more severe in coastal situations (Barlow & Chew, 1971). Adult beetles inflict damage by boring through young leaf bases and feeding on succulent spear and cabbage tissues. Young palms die if the growing point is damaged, either by direct feeding or infection arising from the beetle's activities. Damage restricted to spear leaves usually results in their malformation. Recurrent beetle attacks have been observed to result in considerable growth set-back and delayed maturity (see *Plates 1 & 2).* The critical period is during the initial two years in the field. Palms thereafter become progressively less susceptible to beetle attacks as the canopies overlap and form their own vegetative barrier (Wood, 1969). The problem is virtually non-existent in mature oil palm plantings. Coconut palms are more vulnerable to *Oryctes* damage and mature palms may display leaf damage.

As decomposing timbers provide ideal breeding sites for rhinoceros beetles, many estates adopt clean clearing techniques (complete felling and burning the old stand) prior to planting oil palms. However, clean clearing costs about 60% more than the alternative of leaving remains of the old stand to disintegrate in the inter-rows or windrows.

Drenching with chemicals, *e.g.*, Dieldrin, on decomposing tree trunks has been reported to be effective in reducing *Oryctes* propagation but is considered uneconomic in commercial practice (Mariau & Calvez, 1973).

Hand collection of beetle larvae from rubber stumps, though more costly than sustained adult beetle collection from young palms, is reported to be more effective in reducing the extent of *Oryctes* damage in young oil palms

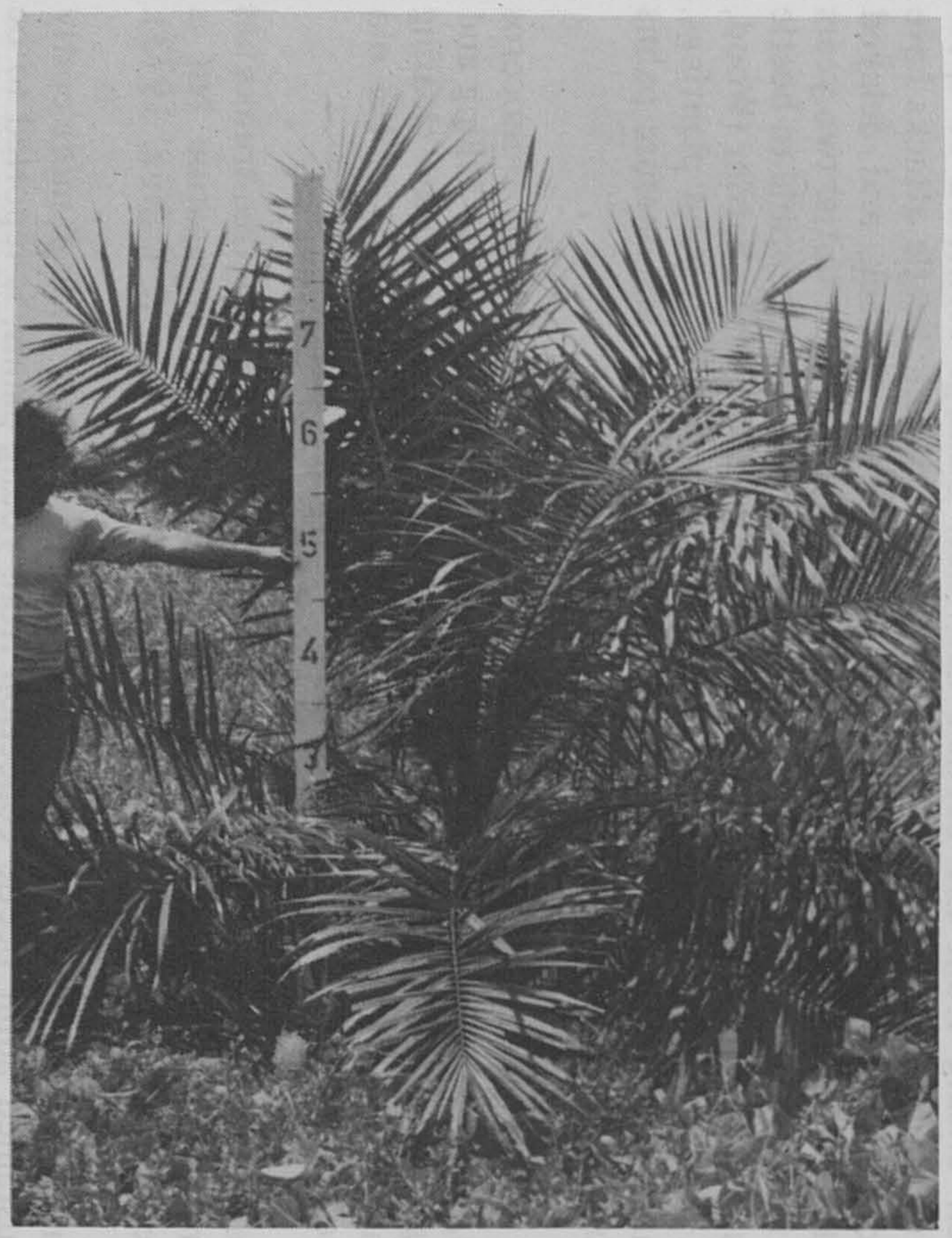


Plate 1. Eighteen month old palm free from rhinoceros beetle attacks.



Plate 2. Eighteen month old palm subjected to recurrent rhinoceros beetle attacks.

(Barlow & Chew, 1971). However, searching for larvae in decomposing oil palm trunks would be more tedious and cost more than searches in rubber stumps.

There is experimental evidence that the rapid establishment of legume covers over decomposing remains of the old stand is effective in reducing the incidence of beetle attacks on palms, due to a vegetative barrier effect (Wood, 1969; Mariau & Calvez, 1973). Nevertheless, the level of beetle attack in such situations may still warrant control measures against the adult beetle.

Frequent rounds of hand collection of adult beetles (commonly termed 'beetle winkling') using a steel wire to extract beetles from their feeding sites is a common cultural control technique. This practice is not entirely satisfactory since unacceptable damage may already have been inflicted by the time beetles have been removed. Moreover, as patrols must be repeated at daily to third daily intervals, the hand collection system is very labour intensive.

Success has been reported in West Africa using the chemical attractant ethyl chrysanthemumate to lure adult *Oryctes monoceros* into traps (Julia & Mariau, 1976). Harrisons & Crosfield investigations with the attractant for trapping *Oryctes rhinoceros* were unrewarding (H & C, 1974).

Direct chemical prophylactic measures involving application of gamma isomer BHC into young seedling crowns have been reported to have been effective against the *Oryctes* in coconut palms (Mariau, 1967; Catley, 1969) and in oil palms (Turner & Gillbanks, 1974). However, this treatment does not greatly reduce the number of beetles within an area as protection is apparently due to the repellent effect of the insecticide. Consequently, untreated palms may become more susceptible to attack by beetles repelled from nearby treated palms (Catley, 1969).

This paper reports the results of field scale evaluation of carbofuran (Furadan 3G formulation), a broad-spectrum insecticide/nematicide with both systemic and contact activity, as a chemical prophylactic measure against *Oryctes* in young oil palms. This chemical had been reported to be effective against *Oryctes rhinoceros* larvae and adults in laboratory screening trials (Stelzer, 1968). Preliminary field observations on an estate near Banting in 1976 indicated that Furadan 3G granules (3% a.i.) placed in the axils of young seedling leaves was very effective in reducing a moderate beetle problem. Furadan 3G is highly toxic on ingestion (rat oral LD50 value 437 mg/kg) but is relatively safe to handle (rabbit dermal LD50 value $>$10 200 mg/kg) (Anon, 1976).

EXPERIMENTAL

Field trials involving chemical control of the rhinoceros beetle have of necessity to be conducted on a large scale in view of the appreciable variation in population distribution and extent of damage. Large scale operations are also necessary to provide meaningful comparisons between treatments.

An observational commercial trial to evaluate the effectiveness of Furadan 3G granules against *Oryctes* was established in January 1977 in a 1976 oil palm planting on Sungei Samak Estate, Lower Perak where *Oryctes* infestation was high.

Prior to replanting, the previous oil palm stand was poisoned, felled and windrowed. The palm crowns were then burnt and trunks sectioned and stacked in alternate avenues along future harvesters' paths. The bole section of the palms with adhering root mass were windrowed in alternate avenues so that remains of the old stand were dispersed along every avenue. At the time of establishment of 12 – 13 month old palms in the field, a creeping legume cover was established and was subsequently maintained weed-free.

Beetle attacks commenced almost immediately after planting. The following chemical treatments were introduced in January 1977:-

Code	*Furadan 3G per palm (oz)*	*Intervals (weeks)*	*Plot size (acre)*
A	1	3	20
B	1	6	25
C	3/4	4	25
D (control)	0	–	20

The Furadan 3G granules were directed into the frond axils surrounding the unopened spear leaves. No chemical was applied in the control treatment which involved the estate practice of daily beetle collection from the palms.

Records of beetle infestation levels in the chemical treatment plots were maintained by beetle collection at weekly intervals, beetles being classified as dead or alive.

An assessment of severity of beetle damage following the guidelines laid down by Wood (1969) was made in August 1977, 8 months after commencement of treatments. Four categories of palm damage were recorded:-

Severe – Palms dead or attacked on nearly all fronds; marked distortion of newly emerging spears.

Moderate – Numerous damaged fronds; new healthy spears.

Slight – Limited signs of damage to fronds; no damage to spears.

Nil – No signs of damage.

The census was carried out on 20% of the palm population in each plot, each palm in every fifth row being inspected.

RESULTS

Beetle Population Levels

The pre-treatment beetle population from April-December 1976 in the trial area averaged 14.7 beetles/acre/month, with a high of 26.1 beetles/acre/month being recorded. Palm damage due to *Oryctes* was commonly seen.

Results of the beetle population censuses carried out from January–July 1977 in the various treatment plots are presented in *Table 1.*

TABLE 1. CENSUS OF BEETLE POPULATION IN TRIAL PLOTS

Treatments	*Period*	*No. of beetle/acre/month*			*% Dead to total beetles*
		Dead	*Alive*	*Total*	
A (1 oz/palm, 3 weeks)	January – July 1977	11.2	1.9	13.1	85.5%
B (1 oz/palm, 6 weeks)	January – July 1977	5.9	0.9	6.8	86.8%
C (¾ oz/palm, 4 weeks)	January – July 1977	5.7	1.1	6.7	85.1%
D (control)	January – July 1977	–	22.4	22.4	0%

During the trial period, the beetle population in the control plot (daily beetle collection) was in the order of 22.4 live beetles/acre/month. The lower beetle population recorded in the chemically treated blocks, ranging from 6.7 – 13.1 beetles/acre/month, is not strictly comparable with that recorded in the control plot because of different beetle collection frequencies. However, it is interesting to note the high mortality of collected beetles, in the order of 85%, in the chemically treated plots. Dead beetles were found within the palm circle and lodged within the frond axils. In these circumstances, the use of Furadan 3G would obviate the need for beetle collection rounds. There was no field evidence to indicate that Furadan 3G exerted a repellent effect on *Oryctes.*

Assessment of Palm Damage

The results of the assessment of palm damage due to *Oryctes* carried out in August 1977, 8 months after commencement of treatments, are presented in *Table 2.*

TABLE 2. ASSESSMENT OF BEETLE DAMAGE IN TRIAL AREA

Treatments	*No. palms censused*	*Categories of palm damage*				*Total palms damaged*
		Nil	*Slight*	*Moderate*	*Severe*	
		percentage of censused stand				
A (1 oz/palm, 3 weeks)	238	87.4	6.3	3.4	2.9	12.6
B (1 oz/palm, 6 weeks)	226	81.9	9.7	3.5	4.9	18.1
C (¾ oz/palm, 4 weeks)	304	86.1	4.3	3.0	5.6	12.9
D (control)	242	59.1	10.3	12.4	18.2	40.9

Despite daily beetle collection from the palms in the control plot, 40.9% of the palms were subjected to varying degrees of damage. Almost half of the attacked palms were severely damaged with either markedly distorted spear leaves or without any spear leaves at all. It might be expected that without introduction of daily beetle collection rounds in the control plots, the incidence of palm damage, especially severe cases, would have been higher.

In comparison, the level of palm damage in the treated plots was considerably lower. The application of 3/4 oz and 1 oz Furadan 3G per palm at 4 week and 3 week intervals respectively did not differ in degree of effectiveness. With the application of 1 oz Furadan 3G per palm at six-weekly intervals, a higher incidence of palm damage was recorded though this difference may not be significant compared to the other two chemical treatments. There is further scope for investigating longer durations between applications. Frequency of applications appears more important than the actual rate which may range from 1/2 oz – 1 oz per palm.

In another 1976 planting adjacent to the trial area, where clean clearing was carried out during replanting, the level of palm damage after 8 months of Furadan 3G application at rates of 1/2 oz to 1 oz per palm at 4-weekly intervals was only in the order of 2.9 – 4.3%. The beetle population in this area from January–July 1977 averaged only 4.1 beetles/acre/month.

So far, there have been no apparent adverse effects on palm development associated with the use of Furadan 3G. Indeed, carbofuran has been reported to have growth stimulating properties in burley tobacco (Pless, Cherry & Morgan, 1971).

Cost of Chemical Treatments

Details of costings for the various treatments during the period from January–July 1977 are summarised in *Table 3.*

TABLE 3. SUMMARY OF COSTS JANUARY–JULY 1977

Treatments	*Average costs per acre per month*			
	Chemical	*Application*	*Beetle collection*	*Total*
	$	$	$	$
A (1 oz/palm, 3 weeks)	6.34	0.92	0.87	8.13
B (1 oz/palm, 6 weeks)	3.52	0.51	0.69	4.72
C (¾ oz/palm, 4 weeks)	3.00	0.58	0.66	4.24
D (control)	–	–	3.56	3.56

As these costs have been derived from relatively large acreages, they are indicative of costs under commercial practice. Daily beetle collection rounds cost $3.56/acre/month or approximately 15 cents/acre/round. In the case of older palms, current cost of daily beetle collection is approximately 20 cents/acre/round.

In comparison, the cost of Furadan 3G treatment at 3/4 oz/palm/4 weeks and 1 oz/palm/6 weeks was $4.24 and $4.72/acre/month respectively. If beetle collection had been dispensed with in the treated plots, the cost would have been only $3.58/acre/month and $4.03/acre/month respectively, being very comparable to the control. The application of Furadan 3G at 1 oz per palm at 3 weekly intervals is clearly less economic.

From these costings and results of effectiveness, it is apparent that chemical prophylactic treatment using Furadan 3G is preferred to adult beetle collection for *Oryctes* control in young palms. The use of Furadan 3G will also help to alleviate considerably labour requirements.

DISCUSSION

In that the use of Furadan 3G as a chemical prophylactic control measure has resulted in a marked decline in incidence of young palms damaged by *Oryctes,* the chemical can be considered as effective even though it does not entirely eliminate beetle attacks. Its highly lethal effect on beetles attacking the palms indicates that supplementary adult beetle collection is unnecessary with the use of the chemical. This will obviously ease the labour requirement and release personnel for more gainful employment.

The cost of Furadan 3G treatment is comparable to daily collection of adult beetles which, as the results show, does not really provide adequate protection against *Oryctes* damage. In fact, in high beetle infestation areas, beetle winkling is almost totally ineffective. Thus, Furadan 3G treatment is clearly economic when it is considered that its use will minimise growth set-

back due to beetle damage and result in a higher percentage of palms reaching maturity at optimum age.

In commercial practice, 1/2 oz – 1 oz Furadan 3G per palm applied at 4–6 week intervals should provide adequate protection against the *Oryctes*. The rate and frequency of application may be related to expected severity of attack. Application rates may be gradually increased as the palms grow older and their crowns progressively increase in size. Observations also indicate that the effectiveness of Furadan 3G may be reduced during periods of heavy rains and in such situations, it may be necessary to shorten intervals between applications.

With an effective chemical prophylactic control measure, the policy of windrowing the old stand can be confidently adopted at the time of replanting, provided there is minimal risk of future root disease problems. In this case study, windrowing was estimated to cost $200 less per acre than clean clearing. There is moreover, the additional benefit of considerable quantities of organic matter and nutrients returned to the soil with the windrowing technique.

From field observations, the application of Carbofuran in the granular form is not entirely satisfactory because there is some wastage through run off from the palm crown. A liquid formulation may be easier to apply but in this respect Carbofuran is relatively insoluble. Therefore, investigations into alternative liquid systemic insecticides such as monocrotophos have been initiated. Preliminary indications are promising, but a concentration of the spray solution in excess of 10% is phytotoxic to young palms.

With the greater expansion of coconut plantings due to the development of high yielding hybrids, the *Oryctes* problem may be expected to increase. The use of Furadan 3G in these plantings may help to alleviate the problem. However, the tolerance of young coconut palms to Furadan 3G has not yet been established. Investigations are required before its widescale use can be contemplated. As coconut palms have longer petioles which leave a larger area of the palm base vulnerable to beetle attack, it may be necessary to apply Furadan 3G in a suitable carrier to ensure adequate protection.

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REFERENCES

ANON (1976) Technical information on Carbofuran.

BARLOW, H.S. & CHEW, P.S. (1971) The Rhinoceros beetle, *Oryctes rhinoceros*, in young oil palms planted after rubber on some estates in West Malaysia. In *Crop Protection in Malaysia* (Ed R.L. Wastie & B.J. Wood), pp. 133 – 145, Kuala Lumpur : Incorporated Society of Planters.

CATLEY, A. (1969) The coconut Rhinoceros beetle, *Oryctes rhinoceros. Pans* **15(1)** : pp. 18–30.

HARRISONS & CROSFIELD (M) SDN. BHD. (1974) Research and Advisory Scheme, *Annual Report* 1974.

JULIA, J.F. & MARIAU, D. (1976) Research on Oryctes monoceros ol. in Ivory Coast. III– Olfactory Trapping with Ethyl Chrysanthemumate. *Oleagineux* **31 (6)** pp. 263–272.

MARIAU, D. (1967) Luttee chimique contre l' *Oryctes* resultats preliminaries. *Oleagineux* **22 (3)** pp. 155–158.

MARIAU, D. & CALVEZ, C. (1973) Methode de Luttee Contre L'Oryctes En Replantation de Palmier A Huile. *Oleagineux* **28(5)** pp. 215 – 218.

PLESS, C.D. CHERRY, E.T. & MORGAN Jr., H. (1971) Growth and Yield of Burley Tobacco as Affected by Two Systemic Insecticides. *Jour. Econ. Ento* **(64)** pp. 172–175.

STELZER, M.J. (1968) Report of the Entomologist (Project Area) [UN/SPEC Rhinoceros Beetle Project. Semi-Annual Report (November 1967 to May 1968) – as quoted in Catley (1969)].

TURNER, P.D. & GILLBANKS R.A. (1974) *Oil Palm Cultivation and Management.* pp. 405–411. Kuala Lumpur: Incorporated Society of Planters.

WOOD, B.J. (1969) Studies on the Effect of Ground Vegetation on infestations of *Oryctes rhinoceros* (L) in young oil palm replantings in Malaysia. *Bull. Ent. Res.* **95**: pp. 85–96.

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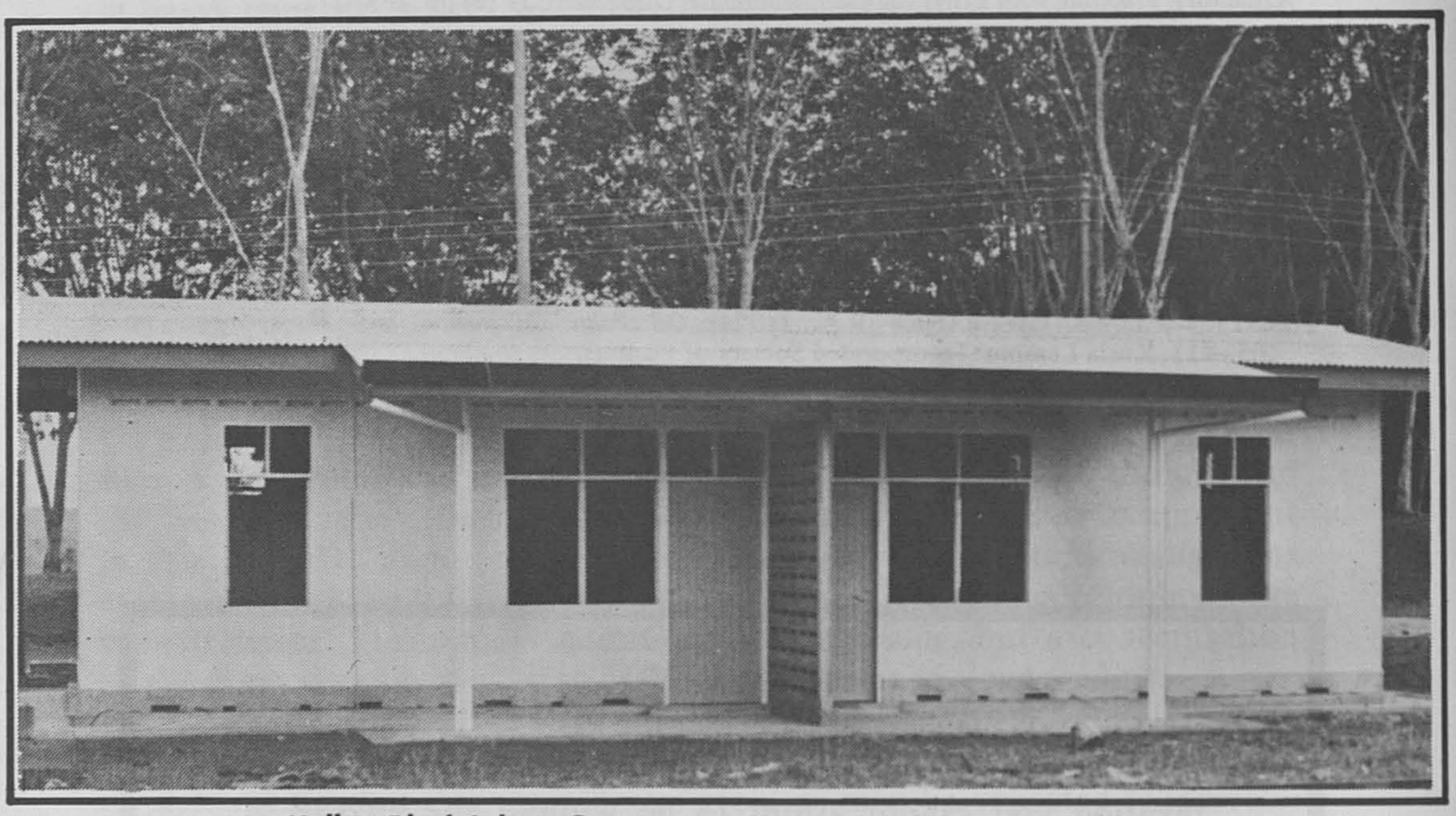
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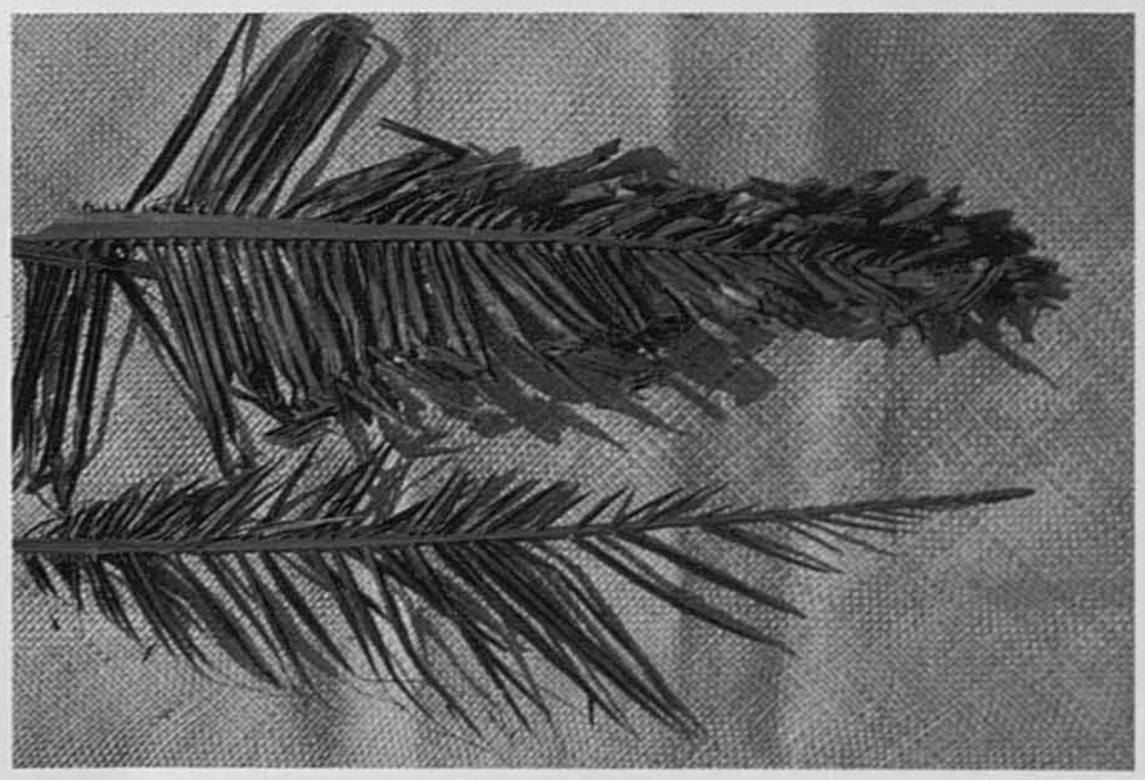
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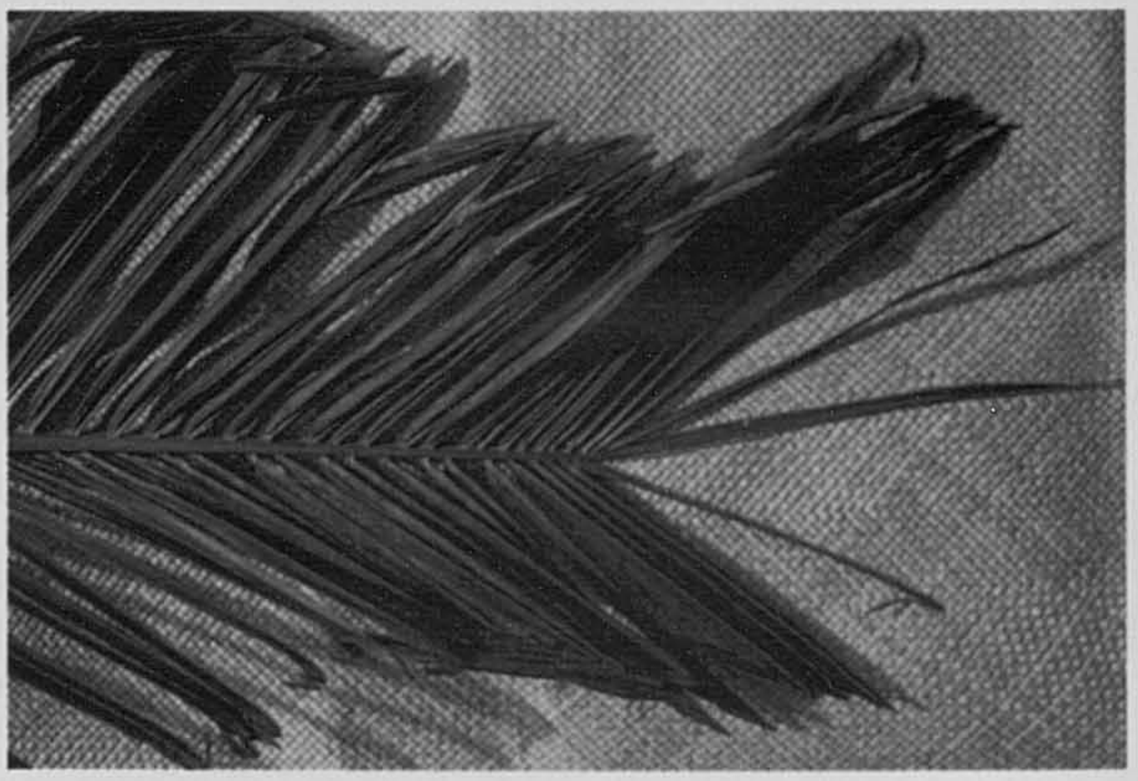
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The maintenance of estate vehicles and stationary engines*

C.D.H. HARTLEY
Air Putih Estate, Kota Tinggi, Johore

Workshop organization and maintenance procedure is discussed in the context of the particular needs of estates. Specimen maintenance schedules are given and explained as a guide to management.

The past 15 years have seen a great change in the plantation industry with more reliance on machinery as a means of increasing productivity and replacing labour, which is becoming both scarce and costly. Efforts to bring some of the benefits of urban life to estate residents have also resulted in an increase in generating and pumping plants. There is however, a danger that capital investment in machinery will be wasted and benefits lost if there is no properly organized service department to care for the machinery.

This paper offers management some guidelines for the organization of a workshop, highlights common difficulties encountered, and attempts to offer a solution to these.

MAINTENANCE

There tend to be two schools of thought on maintenance. The first is to change engine oil at regular intervals and otherwise leave the machine alone until the periodic breakdowns become so inconvenient that it is time for an overhaul, which is either well done, (and costly) or not (also probably costly). The second is to endeavour to keep the vehicle or machinery working usefully by carrying out planned maintenance at regular intervals. This appears costly at first sight, but should cost less in the long run and promotes the efficient use of capital tied up in the plant.

Planned maintenance implies that there is a plan to follow and a planter may formulate this as follows:

(a) Draw up a list of all vehicles and plant on the property and refer to owner's handbooks. If some of these are missing the vehicle's agents are usually most co-operative.

(b) Consider lubrication. Oil is cheaper than metal even these days, and it is important that its function and use is fully understood. Most estates have contractural agreements with oil companies who are always willing to be of technical assistance. Their representative should be asked to survey

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*Paper presented at the ISP Conference on Estate Engineering & Mechanization 1975.

your list of vehicles and machinery and recommend the grade of oil to be used in each, and the interval between oil changes.

Just as the agronomist evaluates circumstances in your fields before making his recommendations, so too will the oil company's technician have to take into account the age and condition of the vehicle or machinery. If your use is non-standard he will probably need to take a series of oil samples for analysis to determine at what point the lubricant begins to break down.

The following factors affect the life of a lubricant:

i. Humidity, resulting in contamination with moisture

ii. Dust, resulting in contamination with grit

iii. Dilution with fuel

iv. Quality of fuel used, and contamination of the lubricant with acids and other by-products of combustion

v. Load factor on the engine. Diesel engines are at their most efficient at full load and the lubricant will deteriorate faster in a lightly-loaded (running cold) engine or an overloaded engine with 'blow' past the piston rings.

Vehicle handbooks specify certain oil change intervals based on fairly standard use; that is, reasonably long trips on paved roads. Under estate conditions it is rarely possible to extend oil changes so far, and they generally have to be more frequent. Specialised use also affects the oil change interval, and as an example certain diesel lorries have a recommended engine oil change interval of 3 000 miles but when used for self-loading ffb with a crane, and transporting it about 18 miles to the mill, the interval is reduced to 1 500 miles because of the extensive use of the engine in driving the hydraulic speedloader.

Chassis and other grease points also need more frequent attention under estate conditions, as grease with a high grit content forms an excellent grinding paste. Thorough greasing is necessary so as to flush out the black, dirty grease.

(c) In considering routine maintenance the owner's handbooks give a general guide to routine maintenance but this must be tailored to suit local conditions and the actual method of carrying out maintenance is often detailed only in the workshop manual which can be purchased from the vehicles agents.

As a general rule, industrial plant such as pumping and generating sets are run in normal conditions on estates, and you can do no better than to follow

the maker's handbook closely. Vehicles however, are run on dusty and rough roads in the moist tropics and some items will need more frequent attention than specified by the makers.

NOTES ON THE MAINTENANCE OF GENERATING SETS

Before a maintenance schedule is written up it is advisable to go through the following check list with your senior mechanic so as to make sure that there is nothing seriously wrong with the set's installation and that it is mechanically sound.

(1) *Is the set suitable for this application?*

Arrange to have the maximum expected load put on the set. That is, have the lights, electric irons, TV sets etc. all switched on.

Check:

(a) the voltmeter, ampere meter or (in the case of 3-phase supply) all three ammeters and compare these with the rating plate for over- or under-loading. In 3-phase sets the load should be similar on all three phases (balanced). The voltage generated should be slightly above the pressure required in the houses to allow for some loss in transmission, and 240v is a suitable delivery where 230v is the standard required.

(b) the engine speed, or cyclometer if fitted. Incorrect engine speed may be the reason for incorrect voltage and the governor should be adjusted before any adjustments to the generator are considered.

(c) the condition of the engine. This should be clean, and free of oil leaks. If working within its capacity it should have a clear exhaust haze. A smoky exhaust is a symptom of overloading (actual, or due to a fault that reduces the power produced) or fuel pump and injector malfunction.
Blue smoke is usually a symptom of underloading or worn piston rings.

The diesel engine should be matched to the load, as overloading causes some blow past the pistons which contaminates the lubricating oil and gives rise to rapid water. Underloading forms sludge in the lubricating oil which interferes with its function; it is also uneconomic because more fuel is consumed per brake horsepower produced (work done) than a smaller engine would consume when working near full load at its most economic rate. The set should be mounted on firm and level foundations which are free of cracks.

(d) The generator. Internal cleanliness is important because excessive carbon dust can give rise to tracking (short circuit). Slip rings should be even and the generator running with only pin point sparks on the commutator. Most modern generators produce their DC stimulation through rectifiers and in the case of these generators only smooth slip rings are provided and these should run without any visible sparks.

(2) *Is the set suitably housed?*

Diesel engines are cooled in two ways.

(a) Water-cooled engines, which usually make use of a suitable tank or set of tanks outside the engine room, cooling water being circulated through the engine by either a natural siphon or by a water pump.

The inlet hose should be led in level and the return hose carrying hot water should rise evenly to a few inches below the water surface. The outlet must never be above the water surface because even engines with water pumps rely on the natural siphon effect for cooling the engine when it is shut down. Some water-cooled engines use radiators similar to those of vehicle engines. Engine rooms must allow adequate ventilation for these.

(b) Air-cooled engines, which are cheaper, though noisier, than water-cooled models and are becoming increasingly popular on estates. This type of engine requires a very good air supply so that the considerable amount of heat produced may be dissipated without heating the engine air intake and affecting its efficiency. One third of the fuel consumed by an air-cooled engine is converted into heat. In other words, a 20 bhp engine consuming 1 gallon of fuel per hour must dissipate in hot air the equivalent of thirteen 1 kw electric fires burning continuously. Failure to keep the engine room cool will adversely affect the power of the engine. BSS 649 : 1958 is based on a combustion air inlet temperature of 29.4°C (85°F) and for every 5.5°C (10°F) above this temperature the engine must be derated by 2 per cent.

Engine rooms should have enough space to permit overhauls to be carried out. The crank- and camshafts in particular need plenty of space for withdrawal but if it can be so arranged that the engine room door opens outwards and opposite the ends of these shafts, some space can be saved.

Any shortcomings brought to light by the initial check should be corrected before the service schedule is introduced. Some quite basic faults may be found and require correction by specialists. Imbalanced phases for instance should be corrected by a qualified electrician, and the engine's agents should be consulted if the set appears to be improperly housed or mounted.

Diesel engines require decarbonizing at regular intervals, usually at around 1 500h, and this saves money in the long run apart from making breakdowns unlikely. Clearances and bearings should be checked at this time and excessively worn parts replaced. Engine running records should be kept so that servicing can be carried out on time and the fuel consumption can be checked. An hour counter is a great help but is rarely fitted as standard equipment.

Generators should be checked regularly and the rotor and slip ring area kept clean by blowing out the dust and wiping clean with methylated spirit on a rag. Grease the bearings regularly but cautiously, as excessive grease contaminates the rings. Slip rings should be evenly burnished and the carbon brushes should run smoothly without sparking. If they are worn down they should be renewed, but take care that they are of the correct grade. The grade should be marked on the side of the carbon but if in doubt check the generator handbook or ask the distributors. Too soft a carbon will cause excessive dust accumulation and too hard a grade will rapidly wear down the slip rings. Slight blemishes on slip rings can be cleaned up with a fine glass (not emery) cloth held against them when rotated by hand. Deep grooves have to be skimmed by a specialist or a well-trained estate mechanic using a bracket and knife. Check the rubber coupling from time to time. Once this begins to wear it can cause flickering lights.

Check the fuse rating in the switchboard. Is this within the capacity of the generator? It is surprising how many sets are fused at ratings they cannot attain, and the generator is therefore not protected.

NOTES ON THE MAINTENANCE OF PUMPING SETS

Pumps are supplied in two main types, the piston and the centrifugal pump. On the whole the piston pump is the most reliable and suitable for high lifts, but it is losing ground on estates to the centrifugal pump which is very much cheaper and more compact. It is however very much more sensitive to suction and delivery head.

When installing a pump set, site it as close to the water supply as possible, and minimise the number of bends. The suction pipe should slope evenly up to the pump from the well or pond, and must be absolutely airtight (*Figure 1*). The delivery rate and power required to drive the pump depends on the head, which is a combination of static head (the height through which the water has to be raised) and friction head (the friction to be overcome in the pipe and fittings expressed as so many feet per 100 ft of run). The friction head rises sharply with the rate of pumping or a reduction in the bore of the pipe (*Figure 2*). The minimum number of bends should be used.

Check valves (of full flow type) should be fitted in the pipe about 10ft up from the pump to relieve the pump of the weight of the column of water.

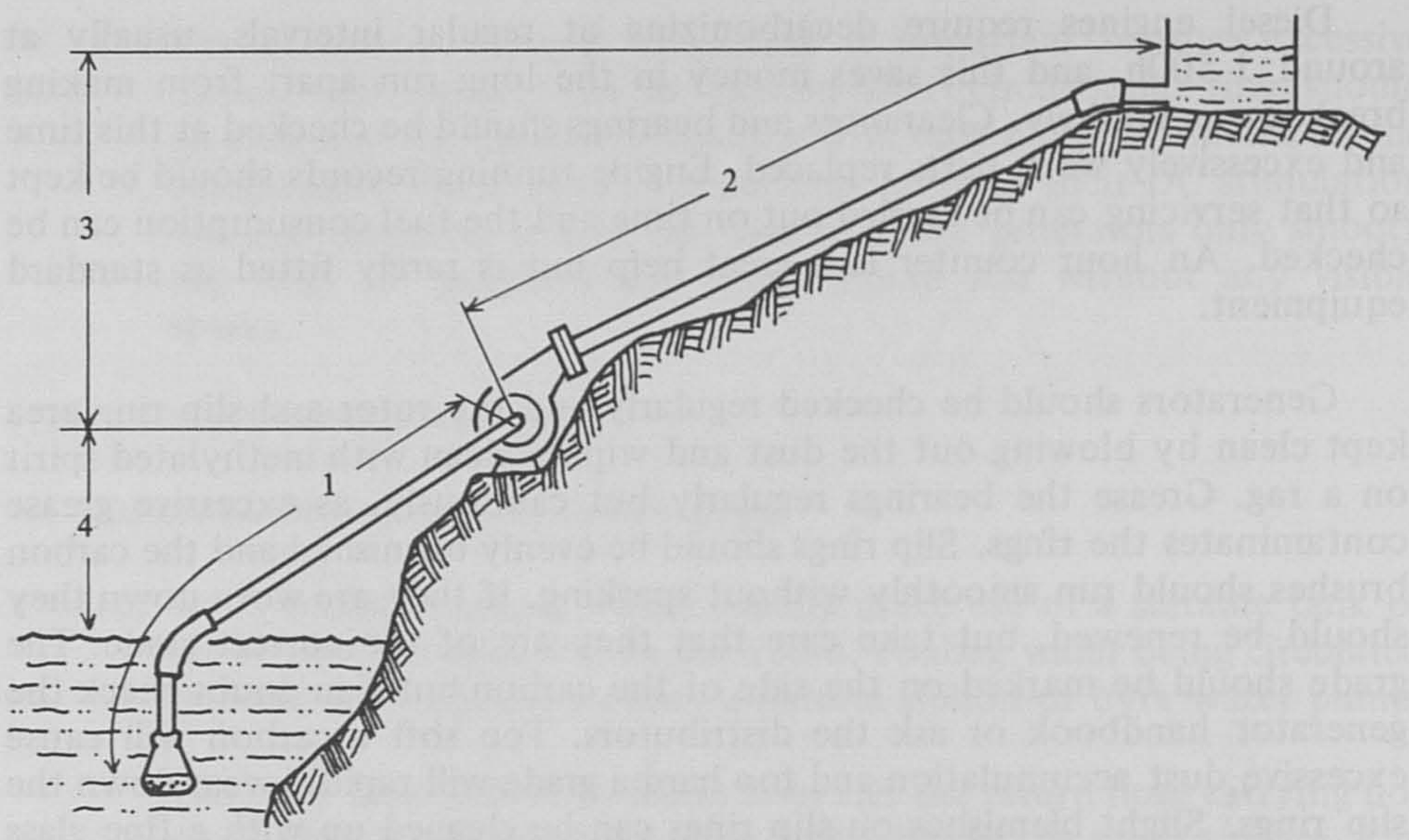


Figure 1. The total head against which a pump must operate friction head (1 and 2) including fittings, plus static head (3 and 4), equals total head.

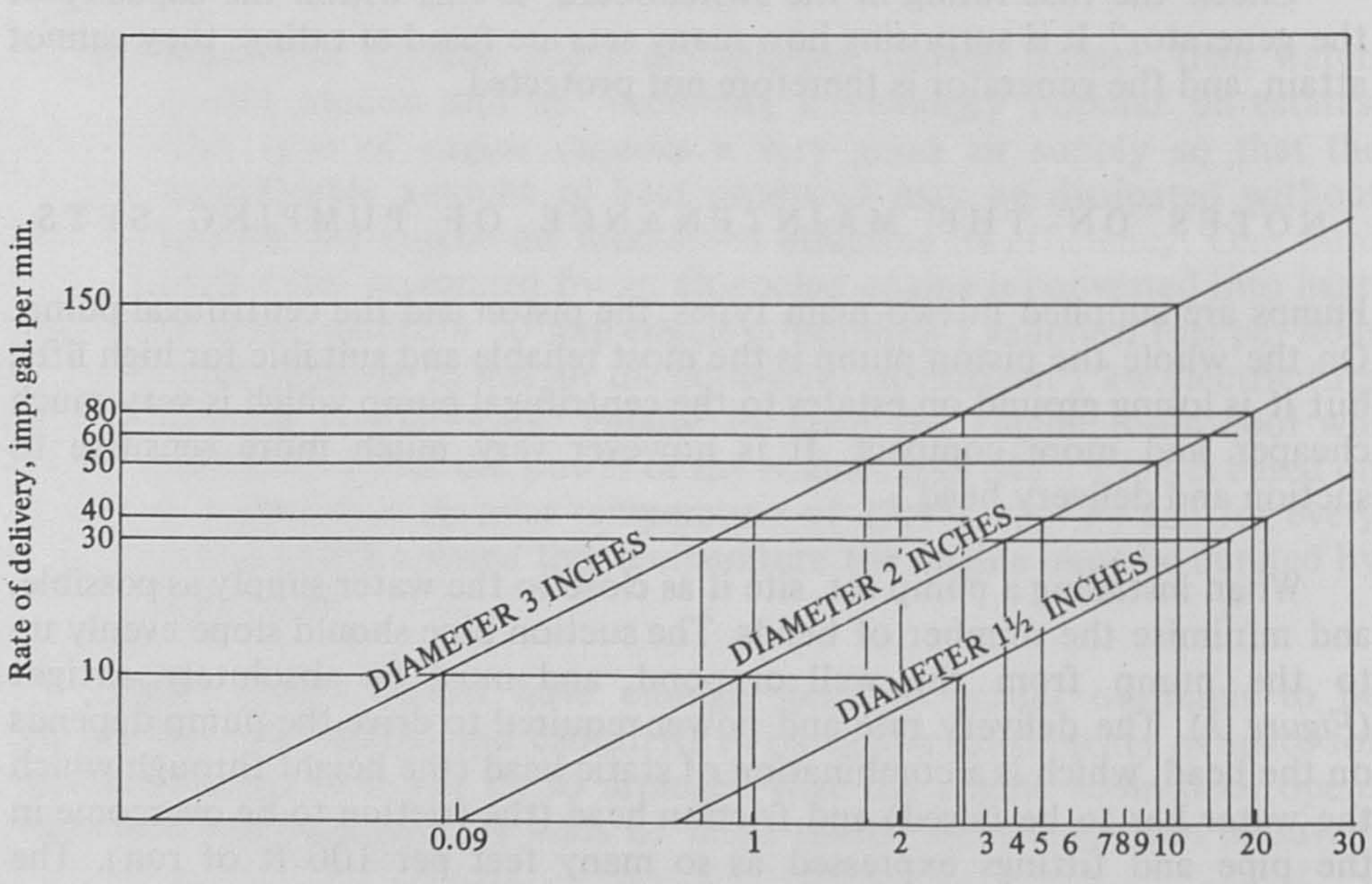


Figure 2. Relationship between velocity of pumped water and effective diameter of galvanised pipes. As pipes corrode and become partially blocked by silt and slime, so friction head increases.

If a pump appears to lose efficiency or the engine appears more heavily loaded than when the pump was originally fitted you should check the pipes for corrosion and silting as this reduces the effective bore, and increases friction. Pumps are severely damaged if run dry and should be supervized when water levels are inadequate.

NOTES ON THE MAINTENANCE OF SMALL ENGINES

These engines power such equipment as lawn-mowers, knapsack type motorized sickles and motorcycles. They are air-cooled and 2- or 4-stroke. Dirt is probably the main cause of failure and air cleaner elements should be checked and cleaned very frequently, daily in many applications, because when these elements are blocked they reduce the air intake and make the fuel mixture too rich, and if they are faulty they allow grit into the engine resulting in serious wear. The cooling fins too must be kept clean to permit them to function properly. Small 4-stroke engines need frequent oil changes (*Appendix 2*) and some method has to be devised for keeping track of their use with this in mind. Two-stroke engines must have the oil and petrol mixed in the correct proportion and this is best done by a responsible person in 4 or 5 gal./lots. Always remember to shake the can before decanting or the dregs will be nearly all oil!

It is advisable to insist that all small machines are brought in monthly for a check-up, and that motorcycles are serviced every 500 miles or monthly as estate use is far more severe than normal.

NOTES ON TRACTOR MAINTENANCE

With the exception of some planting procedures like rotavation and ploughing and perhaps the haulage of ffb, tractors are generally amply powered, their main function on estates being to haul agricultural trailers. With regular maintenance they can do this work for over 10 years without becoming unreliable. All tractors are fitted with hour-counters and most of these are adjusted to 1 500 rpm under-reading for slower engine speeds and over-reading for hard work. This enables you to match the maintenance to the work. A service sticker fixed near the counter will remind the driver when to call in for service (see *Appendix*).

The driver's attitude to his tractor and equipment is of great importance and he should be made responsible for its well-being and proud of its appearance. No one will look after a dirty shabby tractor. Regular washing and periodic repainting is of great value.

The operator's instruction book should form the basis of daily use and periodic maintenance. This is usually well-illustrated and covers every point clearly in language that can be understood by the planter. If planters take

the time to read this with care and translate the more important points into the driver's vernacular and give him a copy with explanation, a good basis for work will have been obtained. However, tractor drivers are likely to be new to machinery, and regular attention should be paid to keeping them up to standard. Probably the most neglected items are greasing, batteries and tyre pressures.

The significance of daily greasing is the flushing action applied to grease points, which expels dirt and moisture from the bearing surfaces. Grease should therefore be pumped until the overflow comes clean and all excessive grease should be wiped off as this will accumulate dust.

Good quality distilled water should be used to top up batteries which should be wiped clean before unscrewing the filler plugs. A pollen puffer is suitable for adding water which should just cover the plates. Do not overfill as the battery gives off oxygen when under charge and this will force the electrolyte out of the vent holes.

Tyre pressures must be adjusted when cold and should be varied according to the work being done. In the case of most medium-sized farm tractors the following rules apply:

Front tyres: 26 lb per sq. in. (1.83 kg per sq. cm)
40 lb per sq. in. (2.81 kg per sq. cm) if front end loader or weight frame is fitted.

Rear tyres: 16 lb per sq. in. (1.12 kg per sq. cm) for road work when towing trailers.
12 lb per sq. in. (0.84 kg per sq. cm) for general field works.

There is a variety of tyre pressures for special conditions and tyres can be filled with water, by the use of a special valve, if ballast is required for extra grip. Handbooks give full details.

NOTES ON THE MAINTENANCE OF LORRIES

Most estate lorries are operated to some extent over laterite roads and the maintenance schedule must take this into consideration. Probably the hardest worked lorries are those fitted with cranes and used with the Kulim system of ffb loading, and transportation systems such as this will not be successful if the vehicles are unreliable. The following procedure has been adopted and appears to have been quite suitable over 6 years use.

Lorries work day and night for 6 days of the week and the rest day is set aside for thorough servicing. Oil change intervals have to be tailored to the particular estate and are arrived at by analysis of oils used over varying

periods. The driver is reminded by a sticker when the next engine oil change is due. Other oils are changed on the weekly maintenance day.

The first job on maintenance day is to thoroughly clean the lorry, and a suitable area of concrete with a pressure water jet must be available for this. Oily patches around gear-boxes, cranes, grease nipples, and engines should be steam-cleaned or treated with a powerful detergent such as Castrol "Solvex" so that they can be worked on, and cracks and leaks identified. Mechanics will then carry out routine servicing with reference to a check list and the vehicle's service log which indicates when gear box oil etc. require changing. The driver's report will also be noted and any faults complained of will be rectified.

Overhaul intervals will depend on the time spent on the loading cycle, extended for lorries operating long distances from the mill.

In the case of lorries operating about 18 miles from the mill it has been found that a decarbonizing is necessary every 40 000 miles (64 000 km) and complete engine overhaul every 80 000 miles (128 000 km). Rear axle gear clearances are adjusted every 40 000 miles and gear boxes left undisturbed, except for oil changes, until they show signs of wear.

Oil change intervals are engine: 1 500 miles (2 400 km) gear box: 10 000 miles (16 000 km), rear axle: 10 000 miles (16 000 km), but should be confirmed by analysis for each operator's conditions.

Other general transport lorries should be called in for servicing every month or 2 000 miles, whichever is reached first, but the driver and attendant must carry out daily checks of engine and tyres and wash the lorry daily if carrying fertilizer or latex. Ready access to the grease gun must be assured and the driver encouraged to grease chassis nipples frequently.

All licensed lorries in Malaysia are subject to a 6-monthly Road Transport Department test, and lorries can normally be thoroughly checked over and painted in 10 days, stretching to 2 weeks if major engine overhauls are required. It is worth being thorough at this time as it will save unscheduled down time later. It is recommended that a similar routine is introduced for heavily-utilized lorries even if they are not subject to such regulations. Less heavily utilized lorries could perhaps go 9 months to a year between such overhauls.

NOTES ON THE MAINTENANCE OF CARS, LAND-ROVERS, ETC.

Under estate conditions these vehicles should be called in for a check every month or 1 500 miles whichever is reached sooner.

Chassis lubrication and a check-over would be done at this time and reference would be made to the lubrication log book to ascertain if any major items are due.

Front wheel alignment requires regular attention due to rough roads.

THE WORKSHOP

Satisfactory results cannot be obtained without the necessary facilities and staff.

Building

This should be airy and light with a good concrete floor and a concrete yard in front. There is no need to be 'fancy', but it is surprising how few estates provide this basic requirement (see *Figure 3*).

Staff

A great deal of money is spent on maintaining and fuelling machinery and vehicles and an executive must have particular responsibility for it and have trained subordinate staff to carry out the routine supervision and clerical work. It is not satisfactory for them to rely on mechanics for technical know-how and decisions. The executive would be a planter who has a mechanical bent and has acquired some technical knowledge by study and attendance at courses for service department personnel organized by tractor and engine manufacturers or their agents. Alternatively the workshop can be attached to an oil palm mill and run by the engineer who would assign an assistant engineer to run it as a department. The subordinate staff similarly must have an understanding of machinery and would preferably have qualified from a technical college and had some years experience of estate conditions. The number of staff must depend upon the size of the workshop, but there are obvious advantages in having more than one man because the workshop must continue to function through his absence for any reason, annual leave being the most obvious.

Mechanics

The number and grading of mechanics will depend on the workload. They will probably comprise the intelligent self-taught or apprenticed older type and some younger mechanics either from trade school or trained up in your own workshop by senior mechanics and staff. Likely youths with an urge to learn can be given work as greasers, and time taken to teach the more promising good practice so that they may in time become useful mechanics.

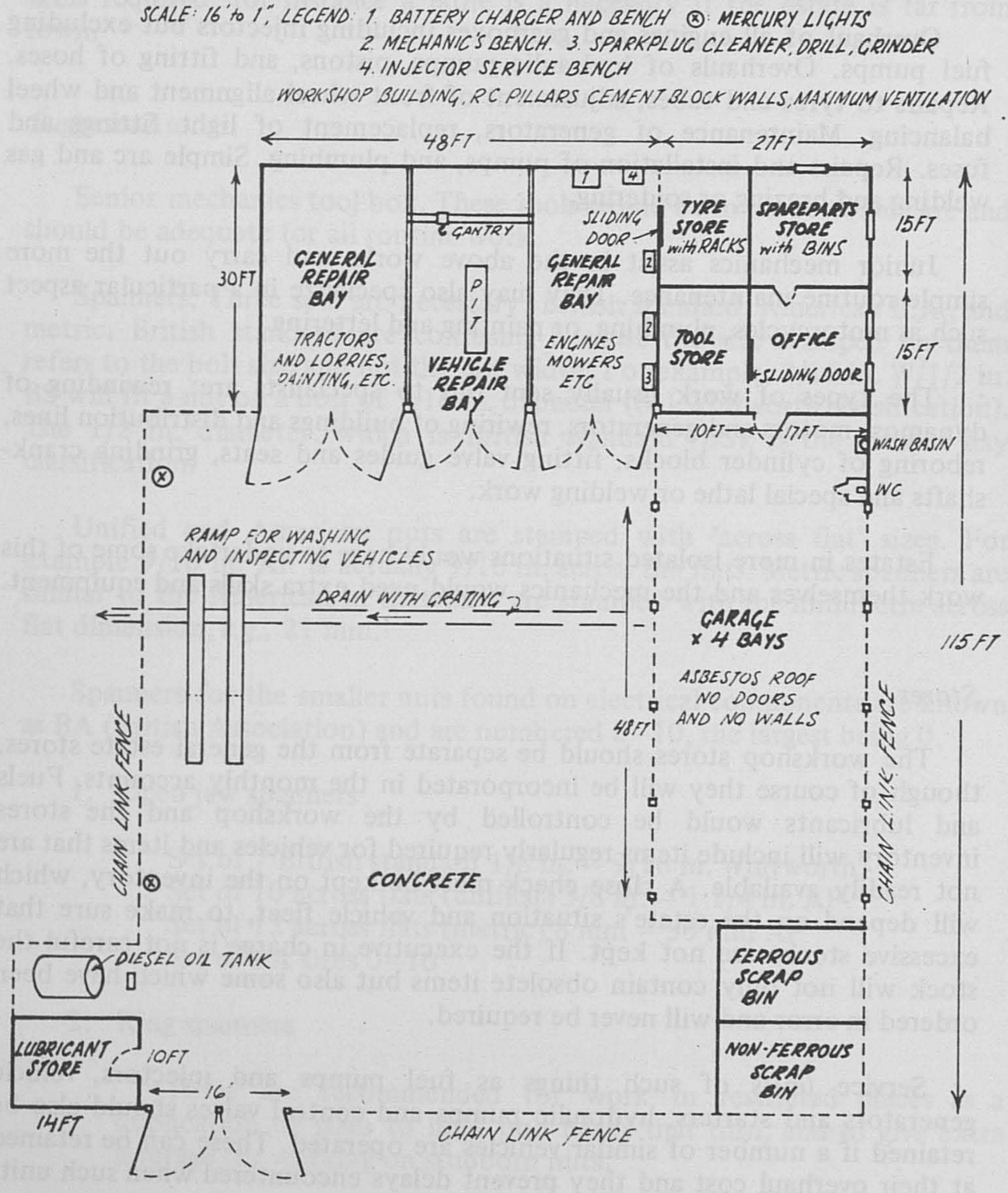


Figure 3. Layout for estate workshop serving 7 000 acres.

The senior mechanic must be versatile and have the ability and training to repair and maintain a wide range of equipment. He would be expected to undertake the following operations on the whole range of equipment under his care:

Overhaul of all engines and gearboxes including injectors but excluding fuel pumps. Overhauls of hydraulic pumps, pistons, and fitting of hoses. Repairs to tyres and tubes, adjustment of front wheel alignment and wheel balancing. Maintenance of generators, replacement of light fittings and fuses. Repairs and installation of pumps, and plumbing. Simple arc and gas welding and brazing or soldering.

Junior mechanics assist in the above works and carry out the more simple routine maintenance. They may also specialize in a particular aspect such as motorcycles, plumbing, or painting and lettering.

The types of work usually sent out to specialists are: rewinding of dynamos, motors and generators, rewiring of buildings and distribution lines, reboring of cylinder blocks, fitting valve guides and seats, grinding crankshafts and special lathe or welding work.

Estates in more isolated situations would have to undertake some of this work themselves and the mechanics would need extra skills and equipment.

Stores

The workshop stores should be separate from the general estate stores, though of course they will be incorporated in the monthly accounts. Fuels and lubricants would be controlled by the workshop and the stores inventory will include items regularly required for vehicles and items that are not readily available. A close check must be kept on the inventory, which will depend on the estate's situation and vehicle fleet, to make sure that excessive stocks are not kept. If the executive in charge is not careful the stock will not only contain obsolete items but also some which have been ordered in error and will never be required.

Service units of such things as fuel pumps and injectors, vehicle generators and starters, hydraulic pumps and control valves should also be retained if a number of similar vehicles are operated. These can be retained at their overhaul cost and they prevent delays encountered when such units have to be sent away for overhaul by specialists.

Tools and equipment

Although a sufficient number and variety of tools is necessary, care should be taken not to get carried away with gadgetry and sophisticated

equipment which the mechanics are insufficiently trained to use. An independent electricity supply is desirable if mains current is not available, so that drills, spark plug cleaners, grinders and welding equipment can be used. The more isolated the property the more extensive the equipment and skills required; for instance a lathe is a necessity if the estate is far from town.

Suggested tools

Senior mechanics tool box. These tools would be in his personal care and should be adequate for all routine work.

Spanners. Three sets are necessary; British standard, American B.A., and metric. British standard are confusing because the size stamped on them refers to the bolt size and not the jaw width. For example, 7/16 in. W/1/2 in. BS will fit a nut on a bolt of 7/16 in. diameter (old Whitworth classification). The 1/2 in. diameter, which is British standard (BS), is the present day classification.

Unified and American nuts are stamped with 'across flat' sizes. For example 9/16 in. AF is actually 9/16 in. across the flats. Metric spanners are similar to the American in that they are stamped with the millimetre across flat dimension, *e.g.*, 21 mm.

Spanners for the smaller nuts found on electrical components are known as BA (British Association) and are numbered 0–10, the largest being 0.

1. Open jaw spanners

   Set of 7 British standard 1/8 in. – 9/16 in. Whitworth.
   Set of 10 across flats (unified) 3/8 in. – 1 1/4 in. AF.
   Set of 12 across flats (metric) 8 mm – 30 mm AF
   Set of BA sizes 0–10

2. Ring spanners

   These are recommended for work in restricted places as a duplication of sizes to hold bolt heads that turn, and to give extra leverage for working on stubborn nuts.

   Set of 9 British standard 1/8 in. – 3/4 in.
   Set of 11 across flats (unified) 5/16 in. – 1 in.
   Set of 10 across flats (metric) 6 mm – 26 mm

3. Sockets

   For general use 1/2 in. square drive are suitable. Sockets in

conjunction with ratchet handles and universal joints enable mechanics to get at the most awkwardly placed nuts. Comprehensive sets are available and one of about thirty-three sockets, British unified and metric sizes is suitable.

4. Adjustable wrenches

Though strictly speaking these are undesirable because they do not fit exactly and rounded corners will result, one with 1 1/2 in. jaw opening is useful when an unusual size of nut is encountered. The self-locking vice grip or mole wrench is a useful tool and a 10 in. size is suitable.

5. Pliers

Three types are needed. One pair of engineers combination pliers for holding small objects and cutting/stripping electrical wire. One pair of snipe nosed pliers for holding objects in confined spaces, and one pair of circlip pliers for a given size of circlip most usually found on vehicles.

6. Hammers

A 2 lb engineers' ball peen and 1/2 lb ball peen are suitable.

7. Chisels

A flat cold chisel 6 in. long 1/2 in. cut, and cross cut 1/4 in. cut.

8. Punches

One or two taper punches are necessary.

9. Files

One general purpose flat file can be kept by the mechanic and a full set with the general tools. Files require replacement when they are blunt.

10. Screwdrivers

Engineers screwdrivers, one with 1/4 in. blade, one with 3/8 in. blade, one medium size chubby (short).

Cross head screwdrivers, 1 small, 1 medium

Electricians screwdrivers 1 medium size

When using screwdrivers, the blade should be the same width as the slot in the screwhead.

Allen keys; 1 set

11. Sundries

1 pair scissors
1 pair tin snips
1 set feeler guages, metric, and 1 set British
1 air pressure gauge 120 lb/sq. in.
1 wire brush

Junior mechanics tool box

1 pair engineers pliers, 2 screwdrivers.

Spanners should include a set of open jaw and a set of ring spanners of the most common nut and bolt size found in your fleet. Other sizes to be drawn from (and returned to) the supervisor.

1 Schrader valve extractor for tyres
1 air pressure guage 120 lb/sq. in.
1 paint scraper
1 wire brush

Tools held by the supervisor and available when required.

Torque wrench adjustable to 140 ft lb with 1/2 in. square drive.
Wheel braces and tubeless tyre inflation tool.
Set of taps and dies, UNC, UNF and perhaps metric sizes.
Hacksaws.
Set of water pipe dies, 1/2 in. to 2 in.
Portable vice with stand for pipe work.
Set of stud extractors, to be used to remove the broken remains of studs.
Pullers for removing steering wheels and gears as needed.
Piston ring fitting tool and expander.
Valve spring clamp.
Battery tester, to check the charge in each cell.
Battery hydrometer, to check the specific gravity in each cell.
Diesel engine compression gauge.
Tachometer, particularly necessary for generating sets.
Micrometer.
Dial gauge, for checking rear axle crown wheel and pinion backlash, cylinder bore wear etc.
Spirit level.

Electric milliameter.
Linen tape (100 ft).
Calipers.
Sets of open-ended and ring spanners for use by junior mechanics when necessary.
Set of 3/4 in. square drive sockets if there are some items of heavy machinery needing these.
Wheel alignment gauge.

WORKSHOP EQUIPMENT

(1) *Plug cleaner and tester:* It is possible to extend the life of sparking plugs and keep them in good order with this equipment. Particularly useful if you have many 2-stroke engines.

(2) *Battery charger:* This is most necessary and one of sufficiently high capacity to simultaneously charge at 10 amps the two 12-volt batteries fitted to larger lorries is desirable.

(3) *Electric grindstone*

(4) *Hydraulic jacks:* One of 10 tons capacity and one of 5 tons.

(5) *Grease guns:* One that fits a 35lb pail and two smaller ones. Pressure required is 10 000 lb/sq. in.

(6) *Oil injectors:* Capacity of 1–2 pints and used to fill gearboxes etc.

(7) *Fuel injectors testing and adjusting pump and tools:* Vital for the satisfactory maintenance of diesel engines.

(8) *Air compressor:* This may be mobile and plugged in to an electric socket near the work, or a static set with piped air to various parts of the workshop may be installed. The latter is certainly neater.

(9) *Steam cleaner:* Vehicles and machinery must be free of dirt before servicing and this machine is necessary if there are a number of vehicles to be serviced on a particular day.

DISCUSSION

This paper gives only the bare outline of the organization and procedure necessary for the satisfactory maintenance of estate machinery and vehicles. Further and more detailed information is available from vehicle manufacturers in the form of user's handbooks and workshop manuals and from magazines such as *Power Farming.*

Estates vary in their location and managers will need to adopt the organization to suit their requirements.

ACKNOWLEDGEMENT

The author wishes to thank The Kulim Group Limited for permission to publish this paper. Messrs Castrol (M) Sdn Bhd and Harrisons Lister Engineering are thanked for permission to extract information from their publications and Mr J.G.M. Price for his encouragement and reading of the proofs.

VEHICLE SERVICE CHECKLIST

(For use when lorries undergo their weekly maintenance)

Vehicle No. . . . . . *Date* . . . . . .

Engine

Function . . . . . .

Exhaust . . . . . .

Lub. oil leaks . . . . . .

Fuel oil leaks . . . . . .

Fuel filters . . . . . .

Air filters . . . . . .

Radiator . . . . . .

Transmission

Clutch . . . . . .

Prop. shaft . . . . . .

Gear box . . . . . .

Rear axle . . . . . .

Suspension

Springs & shackles . . . . . .

Shock absorbers . . . . . .

Lights

Head & rear . . . . . .

Flashers . . . . . .

Loading . . . . . .

Wheels

Steering . . . . . .

Tie rods . . . . . .

Tyres . . . . . .

Tyre pressure . . . . . .

Brakes . . . . . .

Bearings . . . . . .

Leaks . . . . . .

Body

Tipper pins . . . . . .

Tipper function & leaks . . . . . .

Cab . . . . . .

Chassis . . . . . .

Crane

Pump . . . . . .

Body . . . . . .

Control valves . . . . . .

Function . . . . . .

Leaks . . . . . .

. . . . . .

Appendix 1

USEFUL TABLES AND INFORMATION

(1) *Pumps and water*

1 imperial gallon of water weighs 10 lb
1 imperial gallon equals 1.201 US gal.
1 cubic foot of water weighs 62.425 lb
1 cubic foot of water equals 6.24 imperial gal.
Atmospheric pressure is about 14.7 lb per square inch at sea level and this will sustain a column of water 33.95 ft high with a perfect vacuum (which no water pump attains). In practice, few pumps can exceed a 25 ft suction lift.

Belt drives

$$\text{Speed of driven pulley} = \frac{\text{diam. of driving pulley x speed of driving pulley}}{\text{diam. of driven pulley}}$$

$$\text{Diam. of driven pulley} = \frac{\text{diam. of driving pulley x speed of driving pulley}}{\text{diam. of driving pulley}}$$

$$\text{Diam. of driving pulley} = \frac{\text{diam. of driven pulley x speed of driven pulley}}{\text{speed of driving pulley}}$$

$$\text{To drive a pump bhp} = \frac{G \times H \times 100}{3\,300 \times E}$$

where
G = gal./min
H = total head in ft
E = efficiency

(2) *Generators*

For converting from	to	multiply by
Brake horsepower	watts	746
Kilowatts	metric horsepower	1.359
Kilowatts	horsepower	1.3406

$$\text{To drive a generator bhp} = \frac{\text{kva x power factor x 1 000}}{746 \text{ efficiency}}$$

Where efficiency is the amount of energy output divided by the energy input, usually between 0.9 and 0.95. The loss taking place is in bearing friction etc. and dissipated as heat.

(3) *General*

For converting from	to	multiply by
Atmospheres	psi	14.7
psi	atmospheres	0.0680
Cubic centimetres	cubic inches	0.061
Cubic inches	cubic centimetres	16.39
Cubic inches	gallons	0.0036
Cubic inches	litres	0.0164
Cubic metres	cubic feet	35.31
Cubic feet	cubic metres	0.0283
Feet	metres	0.305
Metres	feet	3.28
Inches	metres	0.0254
Metres	inches	39.37
Kilograms	pounds	2.2046
Pounds	kilograms	0.4536
Kg/sq. cm	psi	14.22
psi	kg/sq. cm	0.0703
Metric horsepower	horsepower	0.986
Horsepower	metric horsepower	1.014
Pints	litres	0.5689
Pounds/sq. ft	kg/sq. metre	4.88

Appendix 2

SPECIMEN SERVICE SCHEDULES – SMALL ENGINES

(1) *Briggs & Stratton*

A 4-stroke single cylinder aircooled petrol engine which comes in a number of models and powers such equipment as portable water pumps and mowers.

Series 80300 to 80492

Daily: At least after each 5 hours of operation. Wipe dirt off filler plug and top up with SAE 30 engine oil to overflowing, with engine level.

Every 25 hours of operation: Remove drain plug and drain off oil while engine is warm. Replace drain plug and refill to overflowing. Replace filler cap.

Clean and re-oil air cleaner element. If this is found to be very dirty, clean every 5 hours of operation in future.

Every 50 hours of operation: Clean the cooling fins and governor. Prolonged operation with a clogged cooling system causes severe overheating and is likely to result in damage to the engine.

(2) *Villiers*

A 4-stroke single cylinder, aircooled petrol engine marketed in various sizes and used to power many agricultural machines.

Service schedule for MK 12/2 and MK 25 engines

	Regularly every (approximate)			
	8 h	**100 h**	**250 h**	**500 h**
a. Check the level of oil in base. Top up.	x			
b. Change oil in base.		x		
c. Change oil in air cleaner. (More frequently if found dirty).		x		
d. Fill oil in R.G. casing with specified oil in the case of reduction gear engines only.			x	
e. Oil (light machine oil) governor linkage check for damage.			x	
f. Check screws, nuts and bolts, tighten if necessary.		x		
g. Clean fuel tank and line.			x	
h. Clean breaker points with emery and re-set to .012 – .015 in.		x		
i. Clean spark plug and re-set the gap to .020 in.		x		
j. Decarbonize.			x	
k. Check valve tappet clearance and set to .006 – .010 in.			x	
l. Clean carburettor and jets			x	

	Regularly every (approximate)			
	8 h	**100 h**	**250 h**	**500 h**
m. Remove engine base and clean with kerosene or petrol			x	
n. Check wear on piston rings; change if necessary				x
o. Check for wear on liners and small end bush.				x
p. Check for play and main bearings. Replace if necessary.				x
q. Check for excessive play on gear teeth and undue wear on gov. weight tip. Change if necessary.				x
r. Check valve seating. Relap if found leaky.				x
s. Check ignition timing and re-set if necessary.				x

MAINTENANCE ROUTINE

FOR LISTER 6/1, 8/1, and 12/2 DIESEL ENGINES

When engine is in regular use:

Daily:

Check supply of fuel oil
Check leaks of oil, water, fuel
Check level and state of lubricating oil
Check oil around valve stems
Check oil in push rod cups
Turn grease cups
Check water circulation
Check water temperature
Check exhaust smoke
Check lubricating oil circulation

100 hours:

Clean air filters
Check tightness of all nuts

250 hours:

Apply drop of oil to governor linkage and fuel pump side window
Lubricate auxiliary machinery

Check driving belt, fan, water pump (if fitted)
Drain moisture trap in exhaust pipe (if fitted)

Change engine oil

Change engine oil
Remove fuel injectors and check fuel spray, reset to 90 atmospheres

500 hours: carry out 250 hours service, and in addition:

Clean and renew oil in oil bath air cleaner
Feel water hoses
Adjust valve clearance 6/1 and 12/2 inlet 0.017 in. (0.43 mm); exhaust, 0.032 in.(0.82 mm)
8/1 inlet 0.008 in. (0.20 mm); exhaust, 0.008 in.(0.20 mm)

Clean radiator fins
Clean lubricating oil strainer

1 000 hours: carry out 250 and 500 hours service, and in addition:

Decarbonize engine
Grind in valves
Check piston clearance if gasket is changed
Clean out inlet manifold and exhaust pipe
Check water jacket for scale
Check free working of governor linkage
Repack fan bearings with grease (radiator cooling)

Drain sediment from main fuel tank
Drain and clean water tanks

Renew fuel filter element
Check injector nozzles for obstruction or wear in orifice

Check big end and main bearings

A reasonable amount of time spent in checking over the details as described in the foregoing is the user's best insurance against loss of valuable time and costly repairs.

MAINTENANCE ROUTINE
FOR LISTER HRW 4 – HRW 6 AND HRWS 6 WATER COOLED DIESEL ENGINES

When the engine is in regular use:

Daily:

Check supply of fuel oil
Check level and condition of lubricating oil (also in gearbox if fitted) with the engine stopped

Clean air cleaner if operating under very dusty conditions
Drain condensate trap in exhaust pipe, if applicable
Check water level in radiator, cooling tanks or heat exchanger header tank.

Every 100 hours:

Clean air cleaner if operating under moderately dusty conditions
Check for fuel and lubricating oil leaks. Tighten nuts and fittings as necessary
Wipe engine and baseplate clean
Check level of battery electrolyte.

Every 250 hours:

Drain lubricating oil, flush out system, renew filter element and refill with correct grade and type of oil
Clean fuel injector nozzles if exhaust is dirty
Lubricate dynamo bearing. Check carbon brushes for wear
Check water pump belt tension (also after 25 h when new belts are fitted). Do not reset unless belts are slack. Do not overtighten.

Every 500 hours:

Decarbonize if engine shows loss of compression or blow-by past the piston, but do not disturb otherwise
Adjust tappet clearances if necessary
Wash engine down with paraffin or fuel oil
Check injector sprays, clean and reset pressure if necessary.

Every 1 000 hours:

Clean air filter (oil bath type). Renew paper type elements.

Every 1 500 hours:

Decarbonize if engine shows signs of loss of compression or piston blow-by
Clean inlet manifold and exhaust system (if decarbonized)
Check water space in cylinder blocks for sludge, etc. Remove doors and clean if necessary
Examine fan blades and clean; radiator-cooled engines only
Check free working of governor linkage
Drain and clean fuel tank
Renew fuel filter element

Vehicles

The basis for working out lubrication intervals has been explained earlier in the text. Reproduced below is the check list from the Castrol Lubrication

log book which forms a useful record and enables the mechanic to carry out oil changes when due. The appropriate interval should be entered under the headings 'Engine' 'Gearbox' and 'Rear axle'. Similar log books are produced by other oil companies.

Date								
Speedometer mileage								
Chassis: nipples lubricated								
Brake control linkage								
ENGINE	Topped up							
	Drained & refilled							
GEARBOX	Topped up							
	Drained & refilled							
REAR AXLE	Topped up							
	Drained & refilled							
Steering Box: Topped up								
Clutch withdrawal bearing								
Universal joints: lubricated								
Springs: sprayed								
Distributor, dynamo, water pump								
Oil filter: clean or renew								
Wheel bearings: lubricated								
Shock absorbers: topped up								
Water pump: grease								
Air cleaner: clean, (re-oil if necessary)								
Battery: topped up/charged								
Hydraulic brakes : topped up								
Official stamp								

PEMELIHARAN DAN SERVIS UNTUK TREKTER2

Peringatan: Jam yang dinyatakan itu adalah mengikut miter trekter

A SERVIS TIAP-TIAP HARI

(1) Grease semua puting puting grease di bahagian berikut:

(a) *Front hubs* (pusat roda depan)
(b) *Steering pedestal* dan *power steering ram arms*
(c) *Main steering shaft*
(d) *Front axle centre pivot pin*
(e) *Levelling lever* dan *box*
(f) *Brake pedal bearing*
(g) *Clutch pedal bearing*

(2) Periksa minyak enjin dan tambah jika kurang

(3) Periksa *primary fuel filter glass bowl* (penapis minyak utama mangkok kaca) dan keringkan air serta keladak jika ada

(4) Periksa *radiator* dan tambah air jika kurang

(5) Periksa bateri dan tambah air bateri jika kurang.

B SERVIS 50 JAM

Drebar-drebar mestilah membawa trekter masing-masing kabengkel untuk diservis oleh pekerja-pekerja bengkel.

Kerja yang patut dibuat seperti berikut:

(a) Periksa ketegangan tali kipas dan dikendoratan diketatkan mengikut yang mana perlu

(b) Periksa paras minyak di *power steering reservoir* dan tambah jika kurang

(c) Periksa paras minyak *transmission* dan tambah jika kurang

(d) Periksa nut roda dan ketatkan jika perlu

Depan	=	60ft – lb (8.3 kg – m)
Belakang	=	200ft – lb (27.7 kg – m)

SERVIS TIAP-TIAP HARI KALI INI MESTI DIBUAT OLEH DREBAR

C SERVIS 150 JAM

Kerja yang patut dibuat seperti berikut:

(a) Bersihkan kepala bateri dan sapu dengan *petrolium jelly* atau *grease*

(b) Tukar minyak di *rear axle epicyclic hubs*

(c) Periksa *brakes* dan *adjust* jika perlu

(d) Periksa *clutch pedal face travel* dan *adjust* jika perlu

(e) *Grease steering column top bearing* (sedikit sahaja, jangan berlebihan)

(f) *Grease pressure control coupler boom pivot*

(g) *Lubricate dynamo rear bearing* dengan sedikit minyak enjin

(h) *Lubricate hydraulic lift shaft* dengan Castrol ST 90.

Untuk puting puting *grease*, satu tekanan sahaja.

(i) Periksa dua lubang dibawah *clutch housing* dan buang semua keladak dan minyak yang lebih dengan dawai.

SERVIS 50 JAM MESTI DIBUAT PADA KALI INI

D SERVIS 300 JAM

(a) Tukar minyak enjin
(b) Tukar *oil filter element*

SERVIS 150 JAM MESTI DIBUAT PADA KALI INI

E SERVIS 600 JAM

(a) Tukar minyak *transmission*

(b) Periksa paras minyak *steering box* dan tambah jika kurang

(c) Tukar *primary fuel filter element (CAV filter)*

(d) Keringkan air radiator, cuci dengan *Speedflush radiator cleanser*, dan tambah air.

SERVIS 300 JAM MESTI DIBUAT PADA KALI INI

EXAMPLES OF FORMS USED BY AN ESTATE WORKSHOP

(1) Fault advice note

These are printed in triplicate and issued to divisions as well as available in the workshop. It is the duty of the engine or vehicle driver to inform the workshop of any faults and this report can be made direct or through a conductor or assistant. The first two copies are sent and these form the workshop job sheet as a record of work pending and carried out. On completion, the duplicate is returned to the assistant for information. In the case of damage caused by neglect or in connection with an accident the duplicate can be passed through the manager for his information.

.....ESTATE

No .....

To: THE ESTATE WORKSHOP FROM: Division .....
Driver .....
Date .....

FAULT ADVICE

Vehicle/installation .....

Name of faulty item .....

Nature of fault .....

Signature .....

FOR WORKSHOP USE

Date of receipt .....

Vehicle/installation inspected .....

Priority .....

Action taken:

Spares/repairs order no ..... Date ..... Parts received .....

Repair completed ..... Signature .....

(2) Spare parts order book

It is preferable to print order books specifically for the workshop because the suppliers will require information about the engine to which the order refers. Rather more lines are required than for estate stores and room for about 23 items should be provided.

Order No. . . . . .

Tel: . . . . . .

. . . . . COMPANY

. . . . . ESTATE

. . . . . .

. . . . . .

Date . . . . . .

To: . . . . . .

. . . . . .

Please supply/repair parts as under:-

Make/Type: Lister 6/1 Engine: 352-6/1-42
Chassis: No:

---

1 set 657–10380 Decarbonizing gaskets . . . . . .

1 off 574–10320 Connecting rod bearing . . . . . .

1 off 008–04007/001 Connecting rod bush . . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

Management training for plantation industry managers

M.J. GREAVES

Malaysian Institute of Management, Kuala Lumpur

The first Plantation Management Course for estate managers in Malaysia was held in June 1977 at Whittington Bungalow, Fraser's Hill. The course had been planned by a Steering Committee comprising members of the Rubber Growers Association (RGA) and the Malaysian Institute of Management (MIM), and was devised with the intention of providing a local management programme specifically for members of the Malaysian planting industry. From the various evaluations received at the end of the two-week programme it seems that the experiment was well worthwhile, and plans have already been drawn up to provide two more courses in 1978.

The first meeting of the Steering Committee had been held on August 23, 1976, following correspondence between the RGA and the MIM. In this correspondence, attention had been drawn to the fact that there was a need in Malaysia for some kind of management course for estate staff of that level of seniority where they were either just about to be promoted to Manager, or had recently reached that level. In other words, they were identified as being at that very important stage in their career development where they were required to know more about management and business concepts.

It is the writer's personal contention that the methods of training currently employed by the plantation industry have a number of merits. The emphasis has always been upon practical experience and on the job training, often supplemented by ISP examinations, and this plays a valuable role in teaching assistants the technical aspectes of their job as well as enabling them to become familiar with details of estate routine and the nature of emergencies. The practice of many companies in moving assistants around different areas and crops, and to different estates from time to time also helps them to develop an in-depth knowledge of crops and labour. In addition, because there´is a healthy degree of staff mobility between companies, many assistants learn something of the different ways in which various companies control and manage their operations.

However, in all industries there is a need for managers to develop managerial skills. These include the knowledge of, and skill to use, various planning and controlling techniques, a knowledge of organisational relationships, and the human attributes required to lead and motivate staff as well as to communicate effectively with them. Although some of these can be learned on the job, it has been the experience of many companies in different industries that a certain degree of coursework training, carried out

away from the place of work, will often be a good method in the right environment to impart something of these aspects of management.

The idea of providing this particular management course for the whole of the plantation industry was also considered to be advantageous. Although MIM and other similar management training institutions often find that course participants gain positive benefits from exchanging details of their problems in different industries and functional areas, it was thought that the plantation industry represented too much of a special case for its managers to be sent on the normal type of mixed course. The Centre of Management Studies at Wye College in England had previously run a course for plantation executives in 1973, but the feeling was that a course located in Malaysia itself, where tropical agriculture is such an integral part of the economy, would be much more valuable. Such a course could be oriented to the needs of the local industry and to the political ethos of Malaysia. By selecting participants exclusively from within the industry and encouraging an atmosphere in which they could freely discuss aspects of management in relation to their problems, the chances of a valuable learning experience were thought to be much improved. To assist this purpose, it was felt that besides the formal lecture-discussion sessions which would form the basis of the programme, a selected number of prestigious outside speakers should be invited to contribute their experience to the course in the form of evening lectures.

It was further agreed that the programme should be oriented to provide a basic appreciation of management without going into too much depth, and that the objective should be to develop potential rather than remedy weakness. For the first programme, the Steering Committee thought there were definite advantages in making it available to planting advisors or senior estate managers only. Firstly, they would be familiarised with the content of the course by their attendance on it and, subject to it being considered a useful experience, would be able to recommend it with confidence to their companies; secondly, their assessment would be extremely valuable in eliminating any weaknesses which might show up. In this way, they would contribute to the future effectiveness and relevance of the programme.

The conceptual framework adopted for the programme was designed with the purpose of providing answers to the following questions;

(i) *What is management?*

This is the concept of the functions of management in terms of planning, organising, staffing, directing and controlling.

(ii) *Why is management important?*

This is the concept of specialisation, and includes the need for co-ordination and co-operation.

(iii) *How does a manager behave?*

This is the concept relating to the bahavioural and quantitative tools used by managers as they carry out the functions identified in (i) above.

It was with this framework in mind that the preliminary and later the final timetables were drawn up, and the dates for the course set. The administrative responsibility for the programme, as well as the responsibility for much of the actual instructional leadership was given to Mr. Michael Greaves a Colombo Plan Expert from Britain recently attached to MIM for a two-year period. Mr. Greaves was no stranger to Malaysia having previously served at the Faculty of Economics and Administration at the University of Malaya on a three-year secondment from the University of Edinburgh.

Although the Plantation Management Course timetable and curriculum were designed around the course basis used by MIM for other courses of a similar nature, it was clear that the material to be used in this instance should be oriented as far as possible to the needs of the plantation industry. In order to gather some of this material, the Steering Committee decided that Mr. Michael Greaves should spend more time on various estates, and thanks to the co-operation of Dunlop Estates, Socfin and Unipamol, he was able to spend a few days in Johore in late March talking to some estate managers and obtaining a first hand picture of the estates and their organisation. Admittedly, it was not possible in three days to gain a detailed picture of all aspects of organisation, labour problems, reporting systems, financial and control statements, management development and so forth, but a reasonable outline was obtained and was later used to advantage during the course.

Participants for the programme were nominated by RGA members. The desired attendance was 18, and in fact 16 participants were accepted, although owing to individual last-minute difficulties in two cases, 14 personnel eventually assembled at Fraser's Hill on Sunday afternoon, June 5. They came from 11 companies and comprised 6 Plantation Advisors, Regional Controllers and Visiting Agents, 2 General Managers, 3 Senior Estate Managers, a Junior Estate Manager and an Agency office Executive. Two managers were from Sabah.

Although it would have been desirable to have had all the course participants under the same roof for purposes of accommodation, Whittington Bungalow was not large enough to house the entire group, so 6 members were lodged outside at the Hotel Merlin. The distinction into 'commuters' and 'non-commuters' did pose a slight problem, and efforts would be made to avoid this in future. For purposes of project work and case study discussions, the 14 were divided into working groups of 4, 5 and 5 participants.

Would you think the No.1 lalang killer could actually improve legume purity?

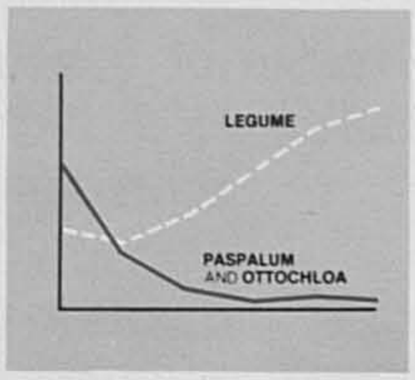


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The timetable for the course is shown below;

	Week I	*June 6 Monday*	*June 7 Tuesday*	*June 8 Wednesday*	*June 9 Thursday*	*June 10 Friday*	*June 11 Saturday*
I.	7.30 – 9.15am	Introduc-tion	Behaviour	Statistics	Production Control	Exercises Discussion	Talk
II.	9.20 – 11.00 am	Concept of Manage-ment	Leader-ship	Statistics	Production Control	Performance Appraisal	Discussion
III.	11.15 – 1.00 pm	Planning and Control	Motivation	Statistics	Stock Control	Management Development	Group Work
IV.	2.30 – 4.15pm	Organising Staffing and Directing	Performance Standards	Decision-Making	Stock Control	Week I Review	–
V.	7.00 – 8.30pm	Talk	Film	Exercises	Talk	Film	–

	Week II	*June 13 Monday*	*June 14 Tuesday*	*June 15 Wednesday*	*June 16 Thursday*	*June 17 Friday*	*June 18 Saturday*
I.	7.30 – 9.15am	Group Work Discussion	Exercises Discussion	Marginal Costs	Exercises Discussion	Interview-ing	Course Review
II.	9.20 – 11.00am	Network Analysis	Budgetary Control	Cost Benefit	Communica-tion	Chairman-ship	Group Plan
III.	11.15 – 1.00 pm	Network Analysis	Tax and Capital Allowances	Cash Flow	Verbal Communica-tions	Talk	–
IV.	2.30 – 4.15 pm	Financial Analysis	Standard Costs	Project Appraisal	Written Communica-tions	Talk	–
V.	7.00 – 8.30 pm	Exercises	Film	Exercises	Talk	Talk	–

It is not necessary in an article of this nature to give an over-detailed diary of events, but it is perhaps useful to summarise some of the main course topics and activities.

On the first working day the course commenced with an introduction to its objectives and methods. This was followed by a general discussion on the concept of management, its functions, tools, techniques and objectives. As with all subsequent discussions, the viewpoint taken was that of the estate. Qualities of an estate manager were talked about at length, during which honesty and integrity figured prominently. For the remainder of the first day and for the whole of the second the emphasis was on the functions of management and an introduction to its behevioural aspects. The session on Behaviour was largely devoted to an exercise on individual and group decision making which was designed to prove that group decisions are often of a higher quality than those made by individuals. The exercise was the

first time that the course members worked in their groups and it proved to be helpful in drawing them together, giving them something of a group identity and sense of team spirit.

In another behavioural session, this time on Motivation, the class worked on a motivation questionnaire, which when analysed showed the members' motivational priorities in their jobs. It was interesting to note that the results obtained corresponded closely with those of 'theoretical research' carried out by managerial experts who maintain that the psychological satisfactions of achievement and job interest usually rank much higher than material satisfactions. One participant commented later that this session should have been longer since the course instructor had thrown the ball into the participants' court and 'we were enjoying kicking it around so much that we were quite disappointed when teacher took it away'.

For two days during the first week and three during the second, the emphasis of the course was changed away from the human aspects of management to the quantitative areas. In these, there was an emphasis on statistical and financial material, practical exercises had to be worked out by the groups, and the whole objective was to introduce some of the managerial quantitative techniques which would be of use to an estate manager. It was felt that if he was not likely to use the techniques immediately, an appreciation would be useful and might lead to more confidence in facing up to certain presentations from head office. Dr. A.K. Chakravarty led the sessions on Statistics and Decision Analysis, and covered new ground for many of the course members in areas such as probability, distribution, sampling and decision trees.

Later in the first week, the course returned to the non-quantitative side of management with Mr. Greaves illustrating the Management by Objectives theme with films followed by discussion. There was some stimulating comment on the relevance of MBO to estates, and although the topic was agreed to be out of the control of the individual manager until it was instituted throughout a company as a whole, the course members agreed that production standards, key results areas and objective performance appraisal could be useful to their system of management. As a weekend project, the groups worked on a re-design of confidential reports using MBO principles.

During the week, a variety of evening activities had taken place. Encik Shahruddin, Secretary of the Foreign Investment Committee of the Economic Planning Unit, presented a useful summary of the present and future Malaysian economy and answered a number of questions relating to investment in the estates sector. On another occasion, the pre-dinner talk was given by Dr. P.P. Narayanan on the topic of Unionism, with Mr. Phil Zeid in the chair. He spoke on the democratisation of work at the grass roots level and the need for more management-union consultation before changes were introduced. Effective informal as well as formal communication should be facilitated, he said. His talk, which was witty as well as informative, was delivered to an appreciative audience who asked many questions.

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The 'other side' of the Labour Relations theme was covered by Mr. V.T. Nathan who was most knowledgeable in the area of Industrial Court cases and procedures, and was familiar with the employers' side of the problems. Again, a useful question and answer session ensued.

Other evenings were devoted either to group exercises or discussion of the points raised by management training films. The first week was considered by the participants to have proceeded very satisfactorily, and the course had been visited by several members of the Steering Committee. These included, apart from Michael Greaves who was there anyway, Tan Sri Sir Claude Fenner, Mr. Doug Gold, Mr. Bernard Lewis and Mr. Joe Walton.

The second week was again divided between quantitative and qualitative work. The first half was quantitative, apart from the presentation and discussion of the newly designed confidential reports, and was led by Mr. Geoff Keow Hock Sneah of the Institut Teknoloji Mara. He covered management planning and control techniques and the financial and accounting areas. One of the topics was Network Analysis and Critical Path Method which, though not used extensively on the estates themselves, is a management tool gaining increasing acceptance at head office level. It was therefore thought desirable to expose the course members to it and give them some practice with an exercise. Another session, this time on Financial Analysis, was designed to explain the rudiments of the balance sheet and some of the more important financial ratios, again with the intention of broadening existing knowledge. Some time was also devoted to group exercises in this area.

Budgets are key areas of interest for estate managers, and sessions were run on Budgetary Control and Standard Costs. Inputs to budgets were considered, as were the budget's value as a performance measurement and yardstick of managerial achievement. As a result of the interest in this area, it will be further developed and extended in future courses. Other topics of significant relevance to estate managers as they develop their expertise and rise in seniority are those of Cash Flow and Project Appraisal. Again, these will be developed in future courses.

The end of the quantitative sessions on the Thursday morning of the second week brought a sense of relief to many of the participants who were breaking new ground almost by the minute. However, this is an important aspect of modern management, and could not be ignored. As the intention was not to teach people what they already knew, it was thought that all the mental effort would be justified later. Extensive notes on all topics were handed out to the participants so that they would have thorough records for future reference.

There were three course sessions on various aspects of Managerial Communications. This is a vital aspect of management, and it was pointed out to the course members that a manager spends some three-quarters of his

time in reading, writing, speaking and listening. Case studies, class exercises and training films were used to show barriers to good communicating, how to overcome them, and how to be more effective in listening, writing and speaking. Further sessions on Interviewing and the Chairmanship of Meetings followed.

As in the first week, the evenings were varied. When the afternoon tea break was over, usually at 4.30 pm, the participants had time for a quick game of golf, a walk, a rest or a drink before they presented themselves again at around 7 pm for exercises, talks or film discussions. Encik K. Pathmanaban, the Deputy Minister of Labour, spoke on Government Institutions, during the course of which he raised the topic of home ownership for estate workers. A number of questions on this subject were answered, and although it was widely agreed to be a 'knotty problem' to work out in practice, most participants thought that the Deputy Minister was setting a high ideal and had presented his point well.

Mr. Ray Hart of Kumpulan Guthrie spoke on the intricacies of commodity product marketing, an area in which all estate managers have an indirect but highly vested interest, and Mr. James Mattinson followed with a talk on shipping. Neither of these areas concern the manager in his normal day to day operations, but since so many factors are dependent upon prices and delivery it was felt to be desirable to give the course members a summary of what is involved. The number of questions asked, and the quality of the subsequent discussions bore adequate testimony to the notion of including the subjects.

In order to allow the participants to leave early on the final Saturday, the course review and evaluation sessions were brought forward from Saturday morning to Friday afternoon. This denied the golfing fraternity the chance of their final round, but they agreed it was worth it since many of them had long distances to travel. The speaker on the final evening was the Inspector-General of Police, Tan Sri Haniff Omar. This session was chaired by another member of the Steering Committee, Mr. Martin Collier. The IGP's subject was Security on the Estates, and this was of great interest to all the participants who responded to his excellent presentation by asking many questions.

On the final morning the groups worked on their production of plans for future course structuring, taking into account the evaluations they had already made. Their reports were later typed and distributed to all concerned. After the discussions, the members said their farewells and departed to their various destinations.

The overall opinion of the course was that it had been a success. In the sense that its objective had been to instruct senior estate management staff in the concepts and tools of management the whole exercise was thought to have been extremely useful. The inclusion of the various practical exercises

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and case studies was commented upon favourably, although it was noted that MIM should retain close contact with the industry and gather more material for use on future courses.

In general, the balance of the course topics was thought to have been good, although certain areas were recommended for exclusion in future (Stock Control, Tax and Capital Allowances), or reduction (Communications, Interviewing and Chairmanship), while others were thought to be worthy of expansion (Decision Making, Budgetary Control, Cash Flow, Project Appraisal, Motivation and Leadership). It was thought that Work Study and Operational Research may be usefully incorporated in the 1978 courses, and also some coverage of the statutory and legal responsibilities of an estate manager. These ideas have all been included in the planning for the next course. The selection of the outside speakers and their topics was thought to have been very good, and they contributed in no small way to the success of the project.

The Steering Committee, meeting again after the course, noted the evaluations and comments and decided that the course should continue; subsequent planning sessions have been held to implement the decision, and the 1978 courses will be held in Fraser's Hill in February and June.

A final comment should be made on the excellent social atmosphere that pervaded the whole proceedings. Strong group cohesion and co-operation was developed from the very beginning, and the participants, by virtue of their seniority and experience, contributed much useful knowledge to the course. Several discussion sessions were tape recorded so that some of the material could incorporated in the future.

The quality of the humour was very high, and several members acquired reputations as raconteurs. The golfers were satisfied with the number of rounds they managed to get in, although the same could not always be said for the quality of their performances. The late-night liar-dice group took a sense of pride and achievement from the fact that for once they had been able to teach their Finance Instructor something, instead of it all being the other way round.

Certainly, all the participants felt that they had gained something from the experience, and they appreciated that there had been a balance between the quantitative and qualitative subjects. Many agreed with the man who remarked after two days of quantitative work that they were among the most shattering of his life. However, the important point was that they all agreed that they had learnt something now, and to this extent it is hoped that future Plantation Management Courses will continue to contribute towards the development of estate management in Malaysia.

Executive for tomorrow*

Y.B.M. TENGKU RAZALEIGH HAMZAH
Minister of Finance

Saudara-saudari yang mulia,

Berbanyak terima kasih saya ucapkan di atas kesudian saudara-saudari menjemput saya supaya meresmikan pembukaan seminar 'Executive For Tomorrow' anjuran School of Business Studies, Institut Teknoloji MARA ini. Saya sungguh berasa bangga dapat hadzir bersama saudara-saudari di majlis penting ini. Buat ucapan saya selanjutnya, saya meminta supaya saudara-saudari mengizinkan saya meneruskannya dalam bahasa Inggeris.

Ladies & Gentlemen,

Thank you for your invitation to be with you this morning. It is always a pleasure to come down to this campus and to be surrounded by young people. Young people make me conscious of the future. The future of this country, I am confident, is promising, exciting, and offers a guarantee of a better life for all our people and for educated people like yourselves a much higher opportunity level.

Because you are all so young, I cannot resist the temptation to begin with a little story about the fat lady – the very fat lady – who was very proud of the results of her diet. She went triumphantly to her doctor, patted her stomach and said. 'Where has all the fat gone, doctor?' Look behind, lady, look behind,' said the doctor.

We are not here today to look behind but to look forward. People of your age have no need to view life through the rear view mirror but should be contemplating the future. The future is yours to inherit. Tomorrow will be your world. The well-known German philosopher, Goethe said, 'The destiny of any nation at any time depends on the nature of its youth, who are under 5 and 20 years of age.' In particular, this morning, we have to consider the role of those of you who will become the executives of tomorrow. The executive, I would define quite simply, as a person who gets things done. It will be the task of the executive of tomorrow to complete the Third Malaysia Plan; to plan and implement the Fourth Malaysia Plan; to inherit responsibility for the traditional resources of this country and to manage in an orderly way, for the benefit of the nation, the exciting new resources like oil and gas which can transform our society. But the rich resources with which our country has been blessed are only potential. Prudent management is needed to exploit these resources in accordance with a national strategy that will optimise the benefit to the nation. Management,

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*Paper delivered at a Seminar organised by the School of Business and Management, Mara Institute of Technology, Shah Alam on March 22, 1977.

I am claiming, is the strategic determinant of growth and prosperity. In the Malaysian context, what we need is not just professional managers but development-oriented managers in sufficient numbers and quality to carry out the tasks of the National Economic Policy. Our greatest resources is not rubber, it is not tin, palm oil, petroleum or gas; it is people.

Your generation, ladies and gentlemen, is a historic generation. There is, in our society, great pressure for change and the tangible hope of a better life. You, as educated manpower and future leaders, are expected to be the instruments of that change. Before we consider your role in society, let me just sketch for you a scenario – a management scenario of what our future Malaysian society will be like. I have no pretensions of being the Herman Khan of Malaysia. For one thing, I could never equal his size. But I will indulge, if I may, in a little futureorology. First of all, the executive profile will be different from today since the prescribed targets that Government has set for Malaysianisation, for racial balance and for *bumiputra* participation should have been met by then. There will, therefore, be a national management in the private sector, not an expatriate one. This means that there will be many more Malaysians in positions of the highest responsibility. Not all executives will be high powered managers in large organisations. Many of you, I hope, will have the dedication to serve in the rural areas, particularly as these become more developed and more opened up to industry. Not all of you will be organisational men in the Western sense. There is a great deal of room in this country for the entrepreneur for the small and medium sized businessmen and again I think the rural areas will offer a new ceiling of opportunity here. I see the Malaysian management community of the future as a single profession spanning both the public and private sectors. To me, it has always been an artificial distinction to equate managers only with the business world. To me, a manager is any one responsible for the conduct of an enterprise and it is necessary to close the present gap that divides the public service from commerce and industry. This will be mutually beneficial. Government can surely benefit from some of the dynamics of business and business needs to be imbued with the purposes of Government. In particular, the private sector will then be more policy directed and accept a greater dimension of social responsibility. The executives themselves will be more educated, more professional and more technically oriented. A more technically competent generation will be born out of change and technology. As we industrialise, we shall need more specialists – more knowledge men – more people with know-how. We must learn the new technologies that are relevant to this country and to the resources we have been given to develop. We need to study agricultural management, for example. There is a whole new and very complex industry, the oil industry in which, at the moment, we have very little national expertise. There must be a transfer of technology in all these areas to the Malaysian executives of tomorrow. At the same time, our future executives will not all be technocrats. We have in this country a strong traditional commercial base built up on the vigour and the dynamism of our local entrepreneurs. We must not lose this entreprenial talent especially in the

smaller business sector where we will need creative executives able to identify business opportunities and with ideas and ingenuity for developing them. We shall also need good administrators which we have always had in our public service. For every creative executive, with ideas for new ventures, we need about six good administrators to back him up. Above all, we shall need executives who can respond to the new realities of Malaysia. The managerial environment is going to get more complex with many more diverse strains and stresses. We shall become computerised. Our executives will have to learn to handle sophisticated tools and powerful methods. But they will not necessarily all have to be products of Western business schools. What is more important is that their training and their outlook should be relevant in terms of our own social needs, our national aspirations and our own value systems. I look to the executives of tomorrow to bring to bear a specifically Malaysian outlook and Malaysian values upon specific Malaysian problems. Our executives will all be working towards the larger goals of national policy. It is imperative not only that we share a common purpose but that we work together. My very favourite story is of a small boy who needed to have his long trousers shortened for school the next morning. Unfortunately, his mother had gone to the Women's Institute that night. It was the amah's day off. His grandmother had a headache and retired to bed. His sister had a boyfriend with her. It seemed as if no one could help him. Later that night, the granny felt better, got up and shortened the trousers. Then, the mother came home and she too shortened the trousers. The amah got back and she had a go at them. Finally, the sister came home very late but in a good mood and she shortened the trousers. The result, as you can well imagine, was an excellent example of co-operation without co-ordination. When you young people assume executive responsibilities, the guidelines and the framework of national policy will be clearly spelt out so that you are all given proper directions to move forward together in a co-ordinated national effort which is what we mean by the word 'Development'.

And finally, what of the individual part that we call upon you all to play? What sort of an executive should you aspire to be? How can you today prepare yourselves for a useful contribution to society tomorrow? You will need, of course, to be competent in your jobs – for that you are already studying and will later on have training. But this is not enough. The executive of tomorrow is going to face unprecedented expansion and change. He must be ready for change – must be able to respond to it and to manage change. This means confronting the future – being prepared to be flexible and adaptable and above all not to be afraid of innovation. Only through innovation do we progress.

The third dimension that will be required is to work within a proper social, ethical and human perspective. In other words, to accept a commitment to society. My advice is always to have a desire to learn, long after you leave this Institution. You must be achievement oriented and ready to seek improvement. When you go out into the world, you will be facing real life situations and practical realities which will require you to apply the

knowledge you have gained in a practical way. It is not always the person who heads the examination list who succeeds in this sphere. You will need to exercise common-sense, to have courage and a very positive approach to your jobs. It is like riding a bicycle – once you stop, you fall off. For our Malays, there are often difficult adjustments to make once they leave the sheltered world of the kampong or the College campus and have to face up to the pace and the competition of life in both the public or the private sectors. You must take up these challenges with energy. Above all, you belong to the privileged section of our society and you must accept the responsibility of leadership. Leadership is the ability to motivate your people, to get the best out of them, to influence others; to get work done through others. The strong leader attracts good talent – he has strong people around him. He does not feel threatened by competition. He is results oriented. At the same time, he is people oriented and does a good job of listening. He will use discretion when necessary and will innovate; he will go beyond just carrying out the company manuals or general orders. He will be interested in more than simply avoiding mistakes. He will want to make a contribution. The finest contribution he can probably make is in the area of social justice. The executive of tomorrow will scorn to have anything to do with either fraud or waste. He will not pursue the status symbol or seek to be a new elite. The Malaysian executive of tomorrow will achieve *stature* first before he claims status. His conduct will be imbued with the higher principles, I believe, of honesty and integrity. On this note, I feel it relevant to remind ourselves of the Islamic value of justice. In a translation of the Qur'an. it says:

> 'Justice is an unassailable fortress built on the brow of a mountain which cannot be overturned by the violence of terror or demolished by the force of arms.'

This will be your best safeguard both as an individual and as a social responsible member of society against the threat of Communism or against any other subversive or anti-social elements in our nation. This will make you the executives of tomorrow, free liberated and worthy leaders.

I would also like to add that this nation needs executives that are dedicated to the corporate organizations they serve and also to the nation. For this sense of dedication, I cannot think of better examples than that shown by the Japanese executives who go on serving the companies they work for until the age of retirement, never thinking of leaping from one employer to another for the sake of personal gains. It is accumulated experience that they believe in. This will be the kind of breed that we need for the future. The season of leaping from one company to another for a gain in salaries must end soon. It has gone for too long, often causing dislocations in management of many companies. I refer especially to some *bumiputra* executives who jump from one company to another seeking better salary offers. They chase the dollar up the ladder and may eventually break their own necks, facing responsibilities they cannot carry. They

disregard all other considerations, thinking only of taking the next step upwards when the opportunity arises. Such persons may rise speedily to high executive offices but can only display their *bumiputra* names, having accumulated hardly any worthwhile experiences. These 'bounty-hunters' usually fail in management and thereby lend a bad name to all other *bumiputra* executives. They are psuedo-executives. Fortunately, there are only a few of them. This nation cannot afford such 'executives'. We need people of talent, dedication and accumulated experiences who can be entrusted with the grand function of management, both economically and socially. Your generation of executives must think in terms of dedicated service, of learning and equipping yourselves with the necessary qualities to play the active and dynamic executive role.

At the time of my Budget Speech on October 29, 1976, Malaysia's GNP at market prices was estimated at about 8%. However, the latest data now indicate that the economy grew by about 11% in 1976. This was largely due to the better than anticipated performance in our balance of trade.

The 1976 budgetary outturn has also proved to be more favourable than anticipated earlier. Although the final 1976 budgetary accounts have not been finalised, it is now anticipated that *the surplus of about $55 million that was anticipated earlier, will now reach over $200 million on the 1976 Budget's Current Account.* This better budgetary performance has been due to:-

(a) the continuing high level of export commodity prices which helped to increase the budget revenue; and

(b) the additional collection of about $200 million in income taxes in late December 1976 resulting from the announcement of the 10% surcharge on late tax payments.

This surplus of course would have been considerably less if the salary revisions, that have not been agreed to were paid in 1976. As it is, the salary revisions for 1976 will now be provided as backpay and charged to the 1977 budgetary accounts. Thus the 1977 Budget will have to bear the brunt of the wage revisions and to this extent, the 1977 Budget could face additional strain. Our revised estimates for economic growth 1977 however, are still very favourable. As you know, we monitor the international and domestic economic developments very closely in the Ministry of Finance, and we are satisfied at this time, that the 1977 Budget estimates of an economic growth of about 9% for Malaysia, still hold good. I am aware that when I announced this high growth rate in the 1977 Budget Speech, there was some scepticism, mainly because of the uncertain international economic climate at that time. However, the picture is now clearer and the latest estimates indicate that the economic growth for our major trading partners will continue at a reasonably high level. For instance, it is estimated by various official international

sources, including the International Monetary Fund, that the U.S. economy will grow by about 5% for the whole of 1977, while the Japanese economy is estimated to grow by 6½% for the whole year. Our expectation of a growth of about 9% for 1977 is, therefore, still reasonable, although it should be realised that this estimate is subject to revision, depending on the *actual* performance of our major industrial and trading partners, during the course of this year.

I am sure, therefore, that this latest assessment, which indicates a very favourable economic outlook for our country will generate even more confidence and inspire more purposeful direction and dedication, towards the achievement of our socio-economic goals.

For the 1 400 students who are in the School of Business Studies, MARA Institute of Technology, I can only say that you have ample opportunities for self-fulfillment before you. I understand you have qualms about being mislocated, that is, being placed in areas of services other than what you are trained in. This you must expect. Modern techniques like critical path analysis or system analysis are all very well, but a little bit of good old fashion common sense and adaptability go a long way in the executive fold. You must not feel averse to begin anywhere on the executive heirarchy or in any place your employers deem fit for you to start your career. The demands of the executive role are great and you must stand ready to meet the challenges.

Ladies and Gentlemen, I now wish to extend my appreciation to the organisers of this two-day seminar. It is the kind of thing needed to provide an area of interaction between potential executives and employers. As a member of the Institute's Council once before, I take a keen interest in your development. As a person who has been a banker and a man of commerce, I am certainly drawn closer to the students and graduates of the School of Business Studies. Now as a member of the Cabinet, you can be assured that you will find me ready to extend any assistance I can should you need it. Lastly, I wish to thank all of you again for kindly inviting me to be with you and giving me this pleasure and honour of declaring the seminar officially open. Thank you.

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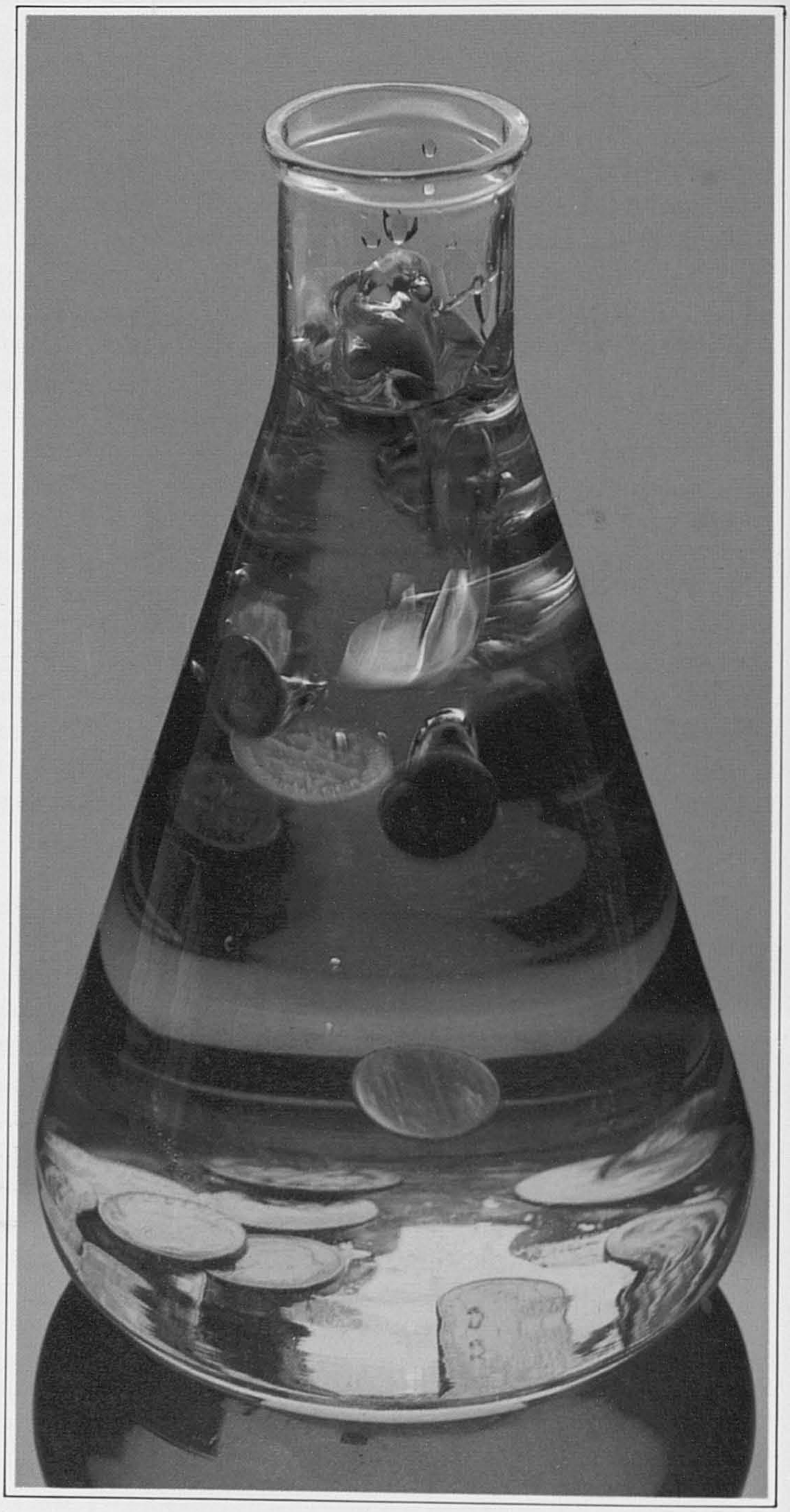
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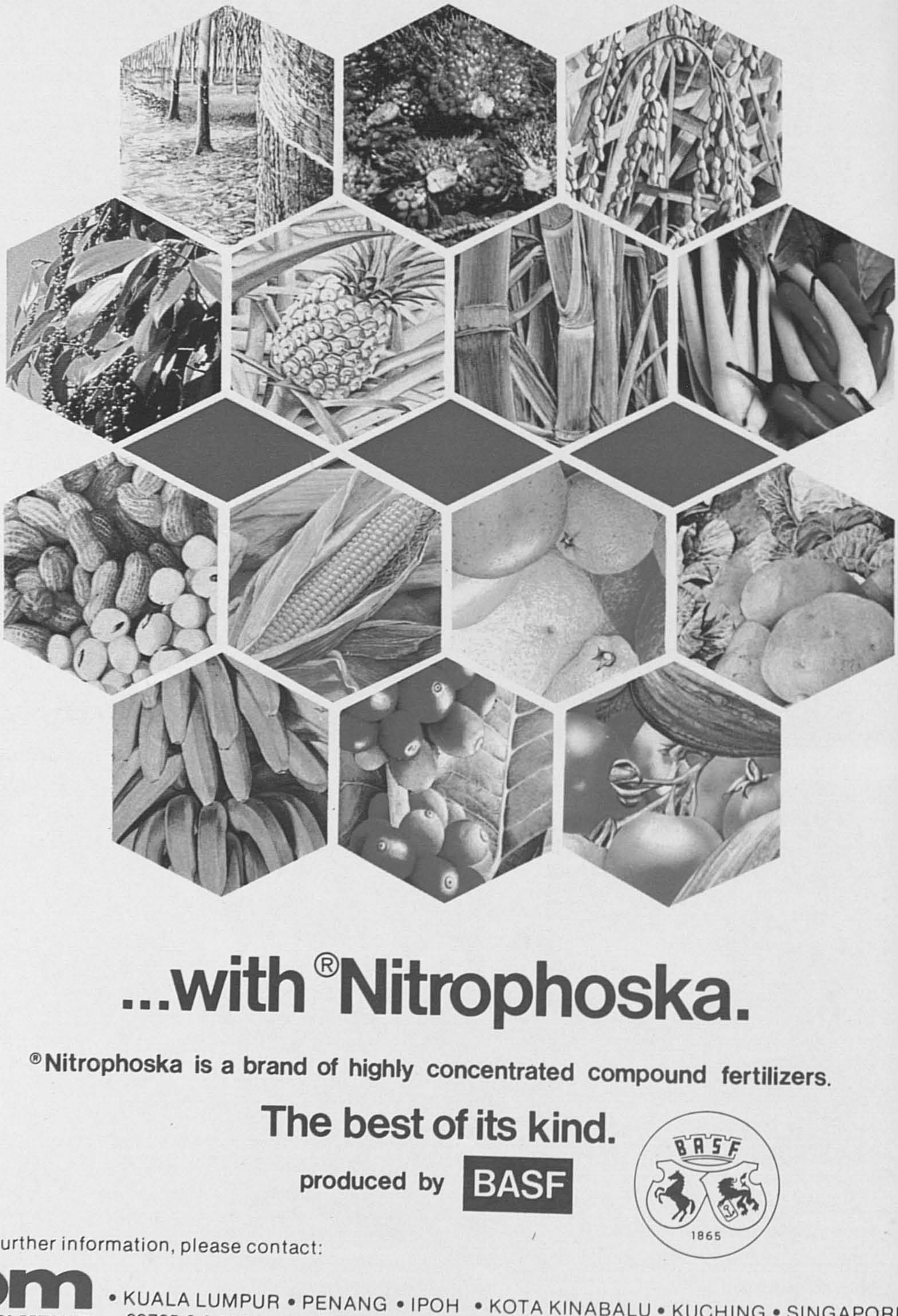
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U. K. taxation*

Domicile

Understandably perhaps some people confuse domicile with residence, often believing the terms suggest the same status. In relation to U.K. taxation nothing could be further from the truth. It is not easy to find a precise definition of the word, but put briefly and simply it means the persons natural homeland to which he intends ultimately to return, however long he has been away.

There are two types of domicile, one of origin and one of choice. No one can be without a domicile – even a homeless or stateless person has a domicile – but none of us can have more than one domicile at any one time. Domicile of origin is undoubtedly the most important concept and is determined at birth by operation of law. A legitimate child takes as his domicile of origin his parents' domicile (normally the father) at birth. Having established the domicile of origin it may be that a person will choose to abandon that domicile and adopt some other country as his homeland thus substituting a domicile of choice. However, it is not normally very easy to establish a domicile of choice; there must be both the intention to abandon the old country and to make a permanent home in the new country supported by physical presence there. In the event that a domicile of choice may be abandoned without acquiring another domicile of choice elsewhere, the domicile of origin – which never changes – will revive.

The domicile of a married woman is determined according to the same factors as any other individual capable of having an independent domicile, and a domicile of a husband and wife may therefore differ. Prior to legislation which became effective from January 1, 1974, a woman acquired her husband's domicile on marriage, and indeed a woman already married on the January 1, 1974 retains her husband's domicile, but as a domicile of choice, until such time as she chooses to alter it. Nevertheless, in the vast majority of cases husband and wife share a common domicile status.

Having tried to explain the meaning of the term, it is important to consider the significance of domicile so far as U.K. taxation is concerned. In general, persons of foreign domicile, who are resident in the U.K., are chargeable to Income Tax (including higher rate tax and investment income surcharge) only on the amount of foreign investment income remitted to or received in the U.K. Likewise, overseas capital gains are only liable to Capital Gains Tax if transferred to the U.K. The non-domiciled U.K. taxpayer is therefore at an advantage since he only pays tax on what he brings in, whereas the individual who is resident, ordinarily resident and domiciled in the

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*Submitted for publication by Wilfred T. Fry Ltd.

U.K. pays tax on the whole overseas investment income, whether or not it is brought to the U.K.

The position as regards foreign earnings is rather different. An employee of an overseas organisation who is ordinarily resident in the U.K. and working there, will be assessed on his earnings without reference to the amounts received in the U.K. but part of the earnings will be relieved of all tax. Only where all the duties of the employment are performed outside the U.K. is any liability to tax based on the amounts received in the U.K.

The Capital Transfer Tax provisions follow broadly similar lines, to those which regulate the taxation of income. Anyone with a U.K. domicile is chargeable on his worldwide assets whereas a person not domiciled in the U.K. is liable only on those assets situated in the U.K.. It follows that someone not living in the U.K., who is nevertheless domiciled there, is, with few exceptions, chargeable to Capital Transfer Tax on his total assets including those situated outside the U.K. This will include gifts made with funds and assets in the country of residence.

When Capital Transfer Tax was introduced in 1974, special provisions were included in the legislation enabling the Inland Revenue to deem the individual domiciled in the U.K. for the purpose of Capital Transfer Tax even though his true country of domicile is outside the U.K. These rules are basically designed to stop the immediate avoidance of Capital Transfer Tax by persons leaving the U.K. for the Channel Islands, the Isle of Man, and to a lesser degree other foreign countries, but they also deem the foreigner domiciled in the U.K. if he has been resident there for many years. It must be stressed that these special rules do not change a persons real domicile but simply make his assets chargeable to Capital Transfer Tax on the same basis as someone domiciled in the U.K.

In general an allowance is granted by the U.K. authorities where overseas income, gains, gifts or assets are assessable to Income Tax, Capital Gains Tax or Capital Transfer Tax, for taxes of a similar nature already borne abroad. The basis of this relief is normally set out in the Double Taxation relief agreement between the two countries concerned, but where no such agreement exists, unilateral relief is usually available in the U.K.

In a brief article such as this, one can really do no more than outline the main issues involved. U.K. taxation is a complex subject and indeed many diverse factors can influence the domicile status itself. It is therefore strongly recommended that anyone wishing to clarify his own position should obtain professional advice.

Finally it must be remembered that domicile is important in many other aspects of law, but in this article we have only concerned ourselves with U.K. taxation.

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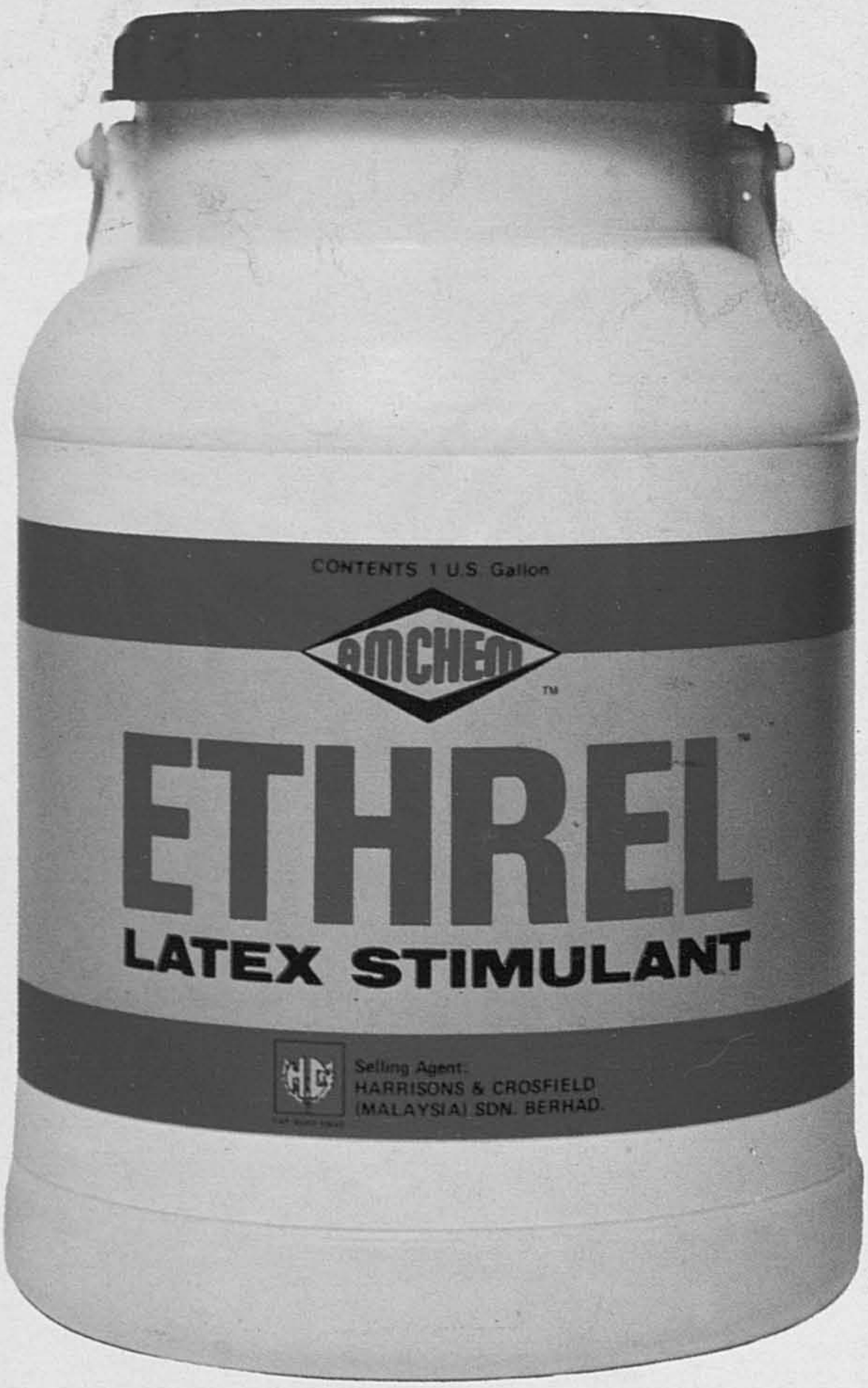
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Hotel concession rates for ISP members

We give below a list of hotels offering discounts on room rates to ISP members presenting their current membership cards.

Several hotels have imposed the condition that these discounts will not operate if bookings are made through travel agencies. Credit cards are likewise not favoured.

HOTEL	DISCOUNT	SERVICE CHARGE	GOVT. TAX
KUALA LUMPUR			
Equatorial	15%	10%	5%
Federal	30%	10%	5%
Grand Central	25%	10%	5%
Hilton	20%	10%	5%
Holiday Inn	20%	10%	5%
Majestic	10%	Nil	5%
Malaya	20%	Nil	5%
Merlin	20%	10%	5%
Regent	20%	10%	5%
SINGAPORE			
Cockpit	20%	10%	3%
Goodwood Park	10%	Nil	3%
Hilton	15%	10%	3%
Merlin	20%	10%	3%
Mirama	20%	10%	3%
New Hongkong	15% (Standard) 20% (Moderate) 25% (De Luxe)	10%	3%
Phoenix	20%	Nil	3%
PENANG			
Ambassador	20%	10%	5%
Central	20%	10%	5%
E & O	15%	10%	5%
Merlin	15%	10%	5%
Rasa Sayang	10%	10%	5%
United	40% (except December & Chinese New Year Season)	Nil	5%
KUANTAN			
Samudra	15%	10%	5%
Merlin	15%	10%	5%
IPOH			
Eastern	10%	10%	5%
KOTA BARU			
Kesina	15%	Nil	5%
KUCHING			
Holiday Inn	15%	Nil	5%
CAMERON HIGHLANDS			
Merlin	10%	10%	5%

Arirang Korean Restaurant & Bar, Jalan Bukit Bintang, offers 10% discount to members who patronise their restaurant and bar on a cash basis.

"Sandy's Spice"

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ALL ROTARIANS EQUAL

In Rotary, all professions, businesses and trades are represented. All are equal as Rotarians but some like to think they are more equal than others. It seems three Rotarians were arguing as to whose classification was the most important. The doctor said to them that his profession was the oldest and most important. In support of his claim he said, "If not for the surgical operation of resection of rib performed by God after administering general anaesthesia and putting Adam to deep sleep there would have been no Eve. If there had been no Eve where would we all be today?" The architect said his was the oldest profession. "In Genesis in the Bible it says, 'In the beginning there was chaos'. I put it to you there must have been an architect amongst them, otherwise no order would have emerged from the chaos." The politician butted in, "Who do you think was responsible for the chaos in the first instance? The politicians, of course".

DOCTORS IN ROTARY

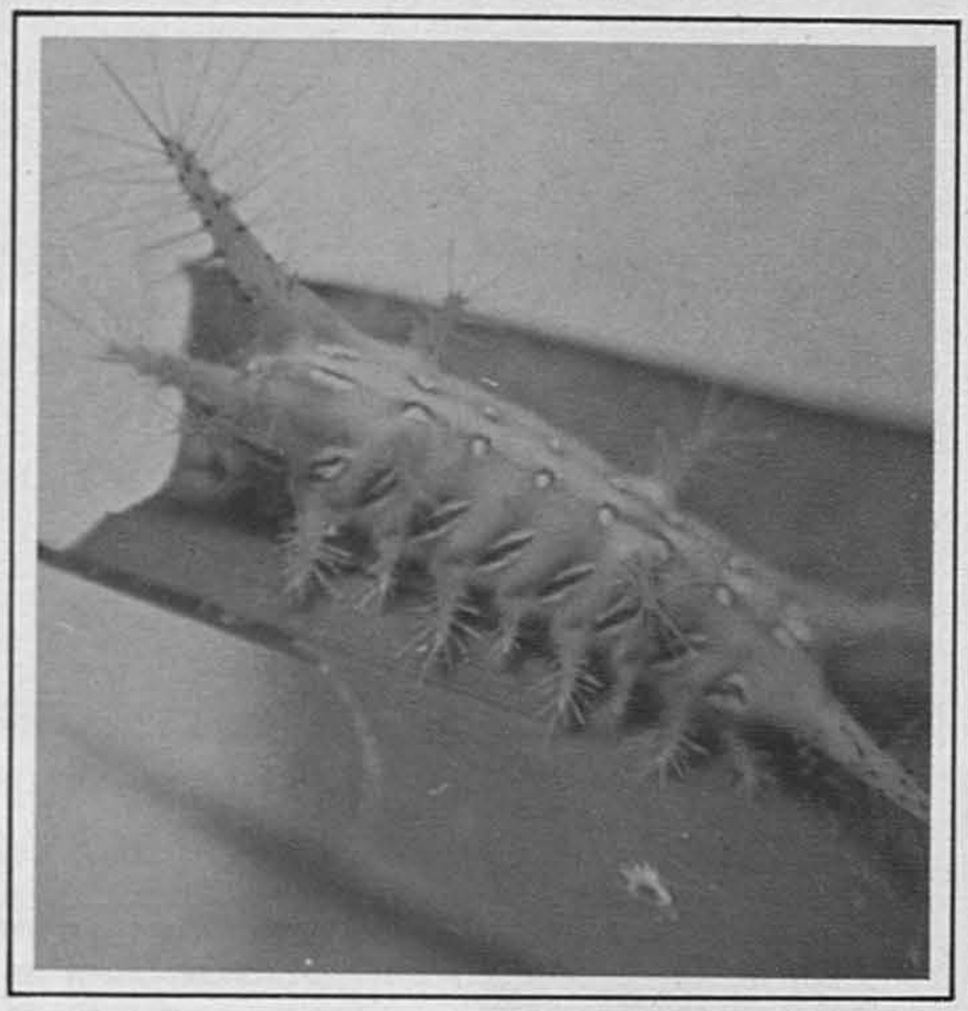
Glancing through my Rotary Club Directory of Members someone said to me, "You have too many doctors in your Club". I pointed out that they were not all medicos; some were dentists, others veterinarians and still others hold University doctorates like Ph. D., etc. However the use of the title of doctor by a variety of professions creates problems. There was it seems on board an ocean liner a very attractive young woman who was the cynosure of all eyes. Early one morning the announcement was made through the public address system that she had strained her knee and called on the nearest doctor to call at Cabin C22 and give her first aid. The orthopaedic surgeon, realising that it was his province and glad of the opportunity to get acquainted with her, quickly put on a dressing gown over his pyjamas and rushed out in his bedroom slippers only to find that the dentist, a Doctor of Dental Surgery, was rushing ahead of him. He managed to catch up with him and on opening the door they found the Bishop, a Doctor of Divinity, massaging her knees!

VIEWPOINTS OF MEDICAL SPECIALISTS

The Rotary classification permits of several doctors to become members because among the Medicos there is a big gulf in their viewpoints depending on their particular fields of specialisation. It seems three doctors attending a Medical Seminar were seated outside the conference hall when a rather attractive girl passed by. When she was out of earshot the orthopaedic surgeon turned to the others and said, "Don't you think she had very pretty ankles?" "I don't know about that", said the obstetrician, "looking at the

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outline of her pelvis I should say she will have little difficulty with her confinement". They turned to the third Medico for arbitration and he said, "Don't ask me, I am just a chest specialist!" These specialists have their own narrow view points; only you and I can view a girl as a whole.

SERVICE CLUB

The Rotary Club is a service club trying to help the less fortunate members of the community around. It seems a Club visited the local prison and tried to entertain the prisoners and assure them of assistance when they come out to help rehabilitate them as good citizens. The oldest prisoner thanked the Rotarians for their interest in them and invited the Rotarians to come again and added, "The next time you come don't stay with us for just a couple of hours but stay with us a little longer, say a couple of weeks".

It seems a Rotary Club in Africa 'adopted' a nearby native village, notorious for its canibalistic tendencies. The club improved the water supply and sanitary facilities of the village, built a school for their children, etc. The Club was therefore pleased to receive an invitation from the African Chief inviting the Rotarians to visit their village and partake of a meal with them. The Rotarians were pleased with this gesture of the villagers and went there on the appointed day in full force and were entertained to some native dances and music. There were then given each a bowl of soup which had a peculiar flavour and taste which they did not relish but which they nevertheless ate up out of politeness. Then the Chief made a speech thanking the Rotarians for what they had done for them. He said, "We, Africans, have much in common with you Rotarians. As you have just shared our meal with us you must have realised that we also believe in serving our fellow men!"

That reminds me of an occasion when an American girl found herself invited to sit at the Captain's table on board an ocean liner. She felt flattered when she got there she was thrilled to find herself seated next to the Prince of Suva. She tried to recollect what she knew of the Fiji Islands from her school books like Cooke's Travels in the South Seas and asked the Prince if they still practised canibalism in his country. The Prince glared at her and did not reply, instead, he beckoned to the butler and asked for the Menu card. After studying it carefully he threw it away in disgust and told the butler to go to the Pursor's office and bring the passenger list instead. She got alarmed and quickly picked up her name card and hid it.

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The monthly crop

Some thoughts on dismissals. *The following are some cogent thoughts on dismissals and the reference of dismissal cases to the Industrial Court. The remarks were made by Haji Abdullah Ghazali, Industrial Court Chairman, and are extracted from Industrial Court Award No. 103/77.*

It is well settled that the dismissal or the termination of the services of an employee is a managerial function and therefore no Court or Tribunal will interfere with the *bona fide* exercise by an employer of his managerial rights unless there has been a colourable exercise of that function as a cloak for victimisation, unfair labour practice or other *mala fide* action.

The Court's primary function is to examine whether the dismissal or the termination was fair or otherwise, whether it has been capricious, arbitrary or unnecessarily harsh, not commensurate with the wrong committed by the employer.

Without any fear of contradiction I venture to state here that no employer in his right mind, except under certain unavoidable or unexpected circumstances, would want to dismiss or terminate the services of an employee who is a good worker and has given little or no problem at all to the employer.

An employee who is dismissed or whose service has been terminated should first ask himself: have I given unsatisfactory service, or have I caused a problem to my employer that merits my dismissal or termination? If he can sincerely and honestly answer 'No' to these questions then this Court will always sympathise with him and will extend its fullest sympathy to him; but if he for one moment hesitates to answer 'No' to either question then I would advise him to stay away from this Court and not waste his time and everybody else's time here.

The Union that espouses a worker's cause in this Court must always make it a duty to get the full facts of the case and then try to answer the two questions posed above. It must make an effort to think rationally, objectively and with a certain amount of maturity. It would do the Union well to try to put itself in the shoes of the employer once in a while and then weigh the merits of the case from the employer's angle.

Merely to insist that the claim should go to the Industrial Court no matter whether its worker-member has a good case or not certainly indicates lack of rational thinking on the part of the Union.

I appreciate the fact that the Union has a duty to perform whenever the members require help, but it also owes a duty to the Court and to itself to see that there are merits in each member's claim and that it is worthy of being pursued in the Industrial Court.

I can quite understand the Union's anxiety in seeing to it that its member is not being victimised and thereby gets thrown out of job due to the caprice of an unreasonable and tight-fisted employer but, to my mind, no right thinking employer would want to get rid of an employee for a whimsical and capricious cause and then suffer the indignity of being hauled up before the Industrial Court and wasting his time and money trying to defend his whimsical and capricious act.

Fair to dismiss a worker not conducive to discipline. *Industrial Court Award No. 92/77. Before Haji Abdullah Ghazali, Chairman. Parties to the dispute: Senegal Rayan Mandere s/o Kanni Mandere and Kamunting Industries Berhad, Perak.*

The issue is whether the Company was justified in terminating Claimant's service for being absent from work without permission and was thus in breach of his terms and conditions of service and also for being indifferent and irresponsible in his work.

The Company carries on a textile manufacturing industry and is based in the Kamunting Industrial Estate, Taiping. The Claimant started working with the Company as a gardener on 21st May, 1974. Amongst the terms of his employment and one that is relevant to this case is that whenever an employee went on sick leave a sick certificate would only be acceptable by the Company if it was issued by the Company's doctor, and in an emergency, by a Government doctor.

On 23rd June, 1975 and 24th June, 1975 the Claimant was granted two days' leave. He was expected to return to work on 25th June, 1975 but he did not do so. Instead, he returned to work on 27th June, 1975 bringing with him a sick certificate for 25th and 26th June, 1975 issued by a private medical clinic. He was warned not to repeat this otherwise stern disciplinary action would be taken against him.

On 8th June, 1976 the Claimant applied for four days leave from 18th to 21st June, 1976 to go to Kuala Lumpur. Approval was given for two days only – for 18th and 19th June as the 20th June was a Sunday being the Weekly Holiday. He was supposed to return to work on 21st June, 1976 but he did not do so and nor did he return to work on 22nd June, 1976. He reported for duty on 23rd June, 1976 and produced a medical certificate issued by Far Eastern Dispensary, Kuala Lumpur dated 21st June, 1976 which certified that he was sick on 21st and 22nd June, 1976. The Company rejected the medical certificate as it was not issued by a Government doctor. Since this was the second occasion he practised this and coupled with several other breaches of discipline which he had committed earlier, the Company terminated his service with effect from 23rd June, 1976.

The following were the breaches of discipline committed by the Claimant:-

- On 11.9.74 he was found by the Managing Director to have gathered together with several other workers outside the canteen during working hours. He was given a written warning not to do so again.

- On 30.5.75 he was found sitting and smoking during working hours in the Spinning Workshop where spinning yarns and other inflammable materials were kept in spite of warnings to employees not to smoke there for fear of fire. As a gardener he had no business to be in the Workshop. A written warning was issued to him.

- Some time in February, 1976 he was found gambling in Company premises. He was given a verbal warning not to do so.

- On five different occasions he reported sick and asked for a sick certificate from the Company's doctor. However, on physical checks the doctor found nothing wrong with him on each of those five occasions and he was asked to report for work each time.

The Claimant in his evidence stated that he did not go to see a Government doctor on 21st June, 1976 whilst in Kuala Lumpur because he did not know of any Government doctor there. He had been to Kuala Lumpur three times previously visiting his sister at Brickfields. It was his sister who took him to see a private doctor at the Far Eastern Dispensary. He admitted he was found smoking in the Workshop but according to him there was no inflammable materials kept there and the Company did not put up a No Smoking sign there as a warning. He denied all the other allegations of indiscipline against him, and although he acknowledged receipt of the warning letters issued to him the contents were never explained to him. He was merely told to put down his signature on the warning letters handed to him and if he did not do so he was told he could not get his wages.

Having heard the Claimant and seeing his demeanour in Court it was obvious that the Claimant was lying. I cannot imagine anyone in Kuala Lumpur not knowing how to get to a Government dispensary or hospital to see a Government doctor. It was also obvious that as a worker he was a malingerer feigning sickness when he was not sick. Since he was not conducive to discipline, the Company has the right to terminate his service when he committed several breaches of discipline imposed by the Company on its employees despite several warnings. The Court has no alternative but to uphold the termination of the Claimant's service by the Company. However, in view of the fact that the Claimant has been out of employment for almost one year the Company's representative in a spirit of goodwill offered to pay the Claimant on compassionate grounds an ex-gratia payment, a sum equivalent to seven months' wages based on a 26-day month at $4.80 per day. The Claimant's claim for reinstatement is dismissed.

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Technical Education Scheme

Estate Book - keeping Examination

November 16, 1977

(Examiner's comments on answers)

9.00 a.m. *Time: 2 hours*

Candidates are required to answer all questions.

Question 1 (15 marks)

On your appointment as Manager of an estate you wish to satisfy yourself that the cash book and bank statement are in agreement as at October 31. You call for both but find that the bank statement records a balance of $3 789.24 whereas the cash book shows a balance of $2 742.27 on the same date. You decide to carry out a reconciliation and your investigations reveal the following:

1. The estate medical suppliers, Munusamy & Associates, returned a cheque for $629.40 made out by the estate in September, saying that it has been dishonoured as the words and figures disagree.

2. A cheque for $5 630.00 was received from the Fragnant Soap Co. in respect of palm oil supplies. You find, however, that although the chief clerk has entered it in the cash book he has failed to lodge it with the bank.

3. A cheque for $3 428.42 to Encik Nordin for weeding contract work although entered in the cash book has not been sent to him.

4. Bank charges of $5.75 have been incurred but were not notified to the estate.

5. A cheque to Contractor Lim Sit Fong for $4 624.90 remains unpresented.

6. A remittance of $2 000 was advised by the Head Office and taken into the cash book but does not appear on the bank statement.

You are required to set out your reconciliation. Marks will be awarded for neatness and clarity.

This required a straightforward reconciliation between the bank balances as disclosed by the bank statement and the cash book. A proper reconciliation should begin with one of the figures being reconciled, work through the adjustments and end with the other figure.

Question 2 (25 marks)

The Chief Clerk on your estate falls ill on September 17 and you are left to keep the cash book up-to-date in his absence. You note that the cash book has columns for both "Petty Cash" and "Bank" transactions whose debit balances are $24.00 and $1 620.50 respectively.

During the Chief Clerk's absence the following transactions occur:

Sept. 18 Cheque for $1 530.60 paid to lorry Contractor.

19 Assistant's travelling expenses of $15.00 reimbursed out of petty cash.

20 Remittance from Head Office of $5 000 was advised as having been received by the bank.

30 The sum of $4 765.90 was drawn for checkroll payments.

30 The petty cash is kept on an imprest of $50.00 and an amount was drawn from the bank to bring the cash balance up to this amount.

Oct. 2 The Manager drew cash for $40 and gave his personal cheque to the estate for this sum.

15 A cheque for $3 620 received from a purchaser of the estate's rubber logs in August was returned by the bank as it had been dishonoured.

The Chief Clerk resumes his duties on October 16.

You are required to:

(1) Write-up the above transactions in the cash book.

(2) Show the balances carried forward and brought forward at the end of September **and** on the date the Chief Clerk returned.

The following transactions presented the greatest difficulties:-

(1) Sept. 30. The opening petty cash balance was $24 of which $15 had been paid to the assistant. To bring the cash in hand up to the imprest of $50, a sum of $41 had therefore to be drawn.

The entries were a credit in the bank column and a debit in the petty cash column.

(2) Oct. 15. Since the chēque would not be honoured by the bank it must be cancelled by entering it on the credit side of the cash book so that it contras the debit entry that was made in August.

Question 3 (15 marks)

In year 1 your estate purchased a tractor (MF 105) for $32 759, details on the Supplier's invoice reading as follows:

One New MF 105	$30 100
Registration plates	200
Full tank of diesel	49
1 year's road tax	410
Backhoe attachment	2 000
	$32 759

The Company's policy is to depreciate tractors (with their attachments) at 10% per annum on a straight line basis each year, but not in the year the vehicle is sold.

The above vehicle was sold in year 3 for $15 000.

You are required to write-up the relevant Fixed Asset account for the equipment, including depreciation, for the three years in question and show how the account would be closed off upon sale of the tractor.

The first question to ascertain was, how much of the supplier's invoice for $32 759 related to capital and how much to revenue. The fuel and road tax are revenue items and therefore only the balance had to be depreciated at 10% straight line. The account should have been as follows:-

	DR.		*CR.*
Cost	*$ 32 300*	*Year 1 depreciation*	*$ 3 230*
		2 depreciation	*3 230*
		3 sale proceeds	*15 000*
		loss on sale	*10 840*
	$ 32 300		*$ 32 300*

Question 4 (30 marks)

The following transactions occur during the month in a herbicide known as "Weedrot":

Sept. 2 10 gallons purchased at $15.00 per gallon.

10 30 gallons issued to Field 45.

17 70 gallons delivered free by Suppliers as a promotion exercise.

19 20 gallons accidentally lost.

22 30 gallons delivered to store but invoice not rendered by supplier.

24 60 gallons issued to Immature areas.

27 Invoice from Supplier in respect of delivery on 22nd arrives which shows a cost of $6.00 per gallon.

30 During month-end stores check, 10 gallons is found to be useless and it is decided to write this amount off.

At the beginning of the month there were 90 gallons in stock valued at $450.

The company's policy is to value issues and stock balances at the "todate average" cost. It also uses the "todate average" cost to value deliveries for which no invoices have been issued, adjusting the cost to "actual" when the invoices are received from the Supplier.

You are required to write-up the stores ledger account for "Weedrot" showing the balance after each transaction in both quantity and value. Marks will be awarded for the proper format of a stores ledger account.

The question specifically stated that the company uses "the todate average cost to value deliveries for which no invoices have been issued, adjusting the cost to actual when the invoices are received from the supplier." The question also called for "the balance after each transaction in both quantity and value." These two instructions had to be strictly followed if the answer was to work out properly.

Thus, the delivery on the 22nd had to be valued at the todate average cost of $3 per gallon. When the invoice was received it showed a value of $6 per gallon requiring an adjustment of $90 in the value column only. This adjustment should not have affected the issue on the 24th which should have been made at $3 per gallon.

Question 5 (15 marks)

You have a new inexperienced Chief Clerk on your estate and before finalising the accounts for the month of October 1977 he asks your advice on the following:

1. 1 000 gallons of fuel have been delivered to the estate but no invoice has been received from the supplier.

2. An invoice for $2 400 in respect of the insurance premium for the year to September 30, 1978 has been received but not paid.

3. Payment of $3 600 in respect of Godown rent for the year ended September 30, 1978 was made during the month.

You are required to state what concise book-keeping instructions you would give your Chief Clerk to enable him to prepare the October accounts, explaining where necessary what accounts he has to open.

1. *The value of the delivery had to be estimated, debited to Fuel Account and credited to a Suspense Account. When the invoice arrived the Suspense Account would be debited and the supplier credited. Any difference on the Suspense Account being cleared to the Fuel Account.*

2 and 3. *Both involved setting up prepayment accounts. The difference was that in 2 the Insurance Company had to be credited since it had issued its invoice but had not been paid.*

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6017 Abdul Rozan K Saundarajan (Haji), BK ADK MSc (Agric Extn), Korporasi Pembangunan Desa, Peti Surat 218, Keningau, Sabah.

4685 Bamford, B P, Bukit Kledek Estate, Jasin, Malacca.

5072 Bugatt, A C, BAL Estates Sdn Bhd, P O Box 135, Tawau, Sabah.

6229 Balakrishnan, D, Jabor Valley Palm Oil Mill, c/o Jabor Valley Estate, Kuantan, Pahang.

5732 Cheong Sian Oon, Layang Estate, P O Box 105, Layang Layang, Johore.

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6635 Ee Ah Chai, Sungei Wangi Estate, Sitiawan, Perak.

6104 Fung Sui Kiong, P O Box 286, Tawau, Sabah.

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5794 Khoo Khoon Long AISP, Flemington Estate, Teluk Anson, Perak.

6333 Krishnan, M V, Ladang Bahru Estate, Bahau, Negri Sembilan.

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6362 Lian Chin Hoe, c/o Marwood Co Sdn Bhd, 12th Floor, Wisma Angkasa Raya, Jalan Ampang, Kuala Lumpur.

5246 Lee Khik Tiong, Kuala Gris Estate, Bukit Abu, Kuala Krai, Kelantan.

6668 Lim Sun Heng, No 37-A Penang Street, 1st Floor, Room A, Penang.

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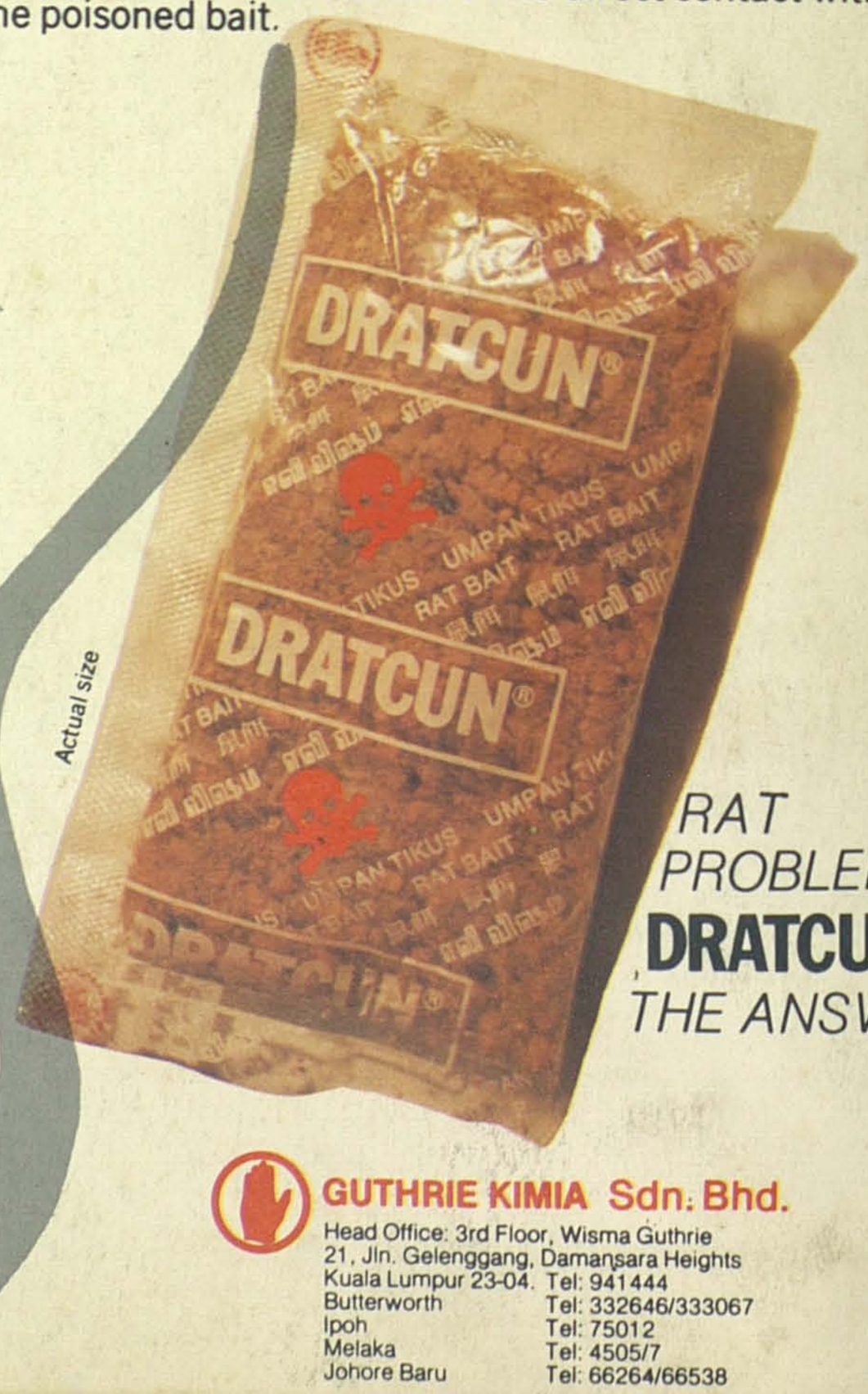
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