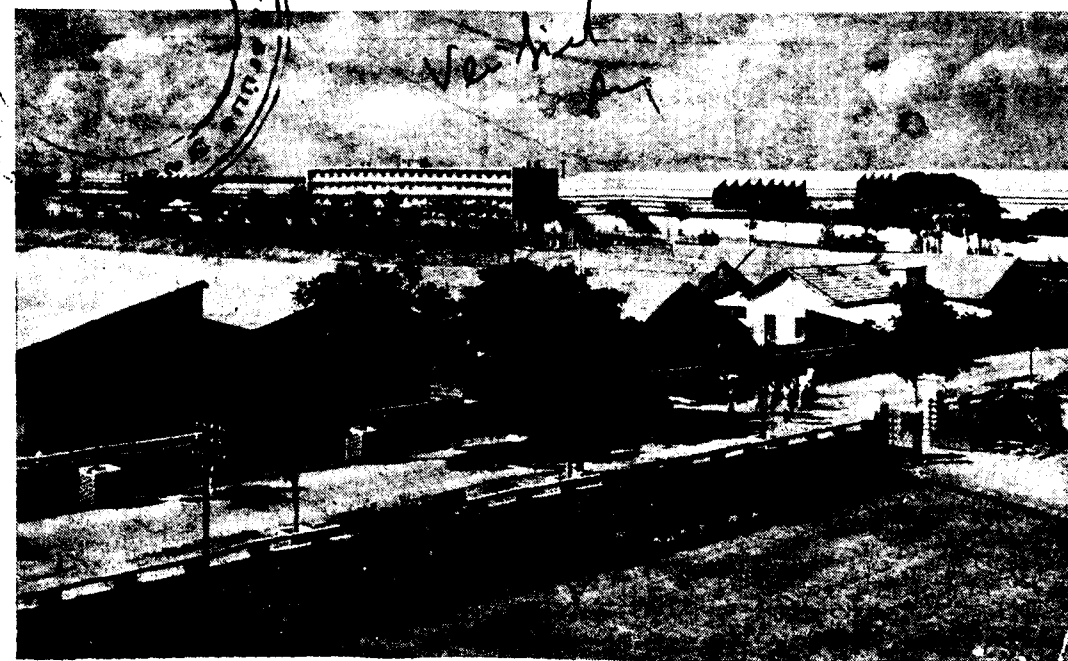
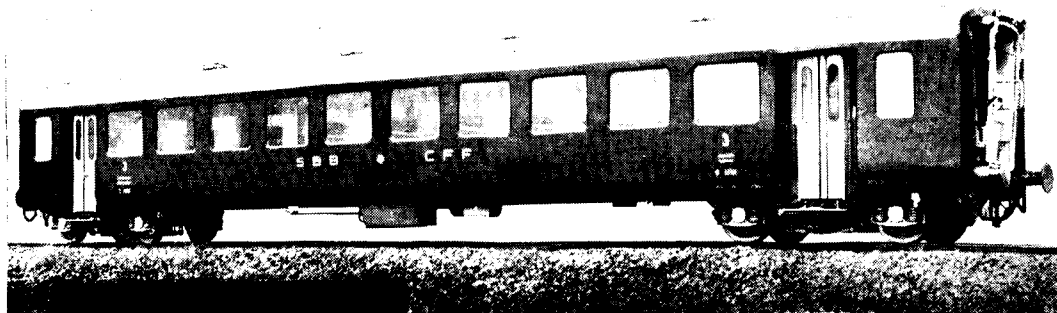


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RAILCOACH





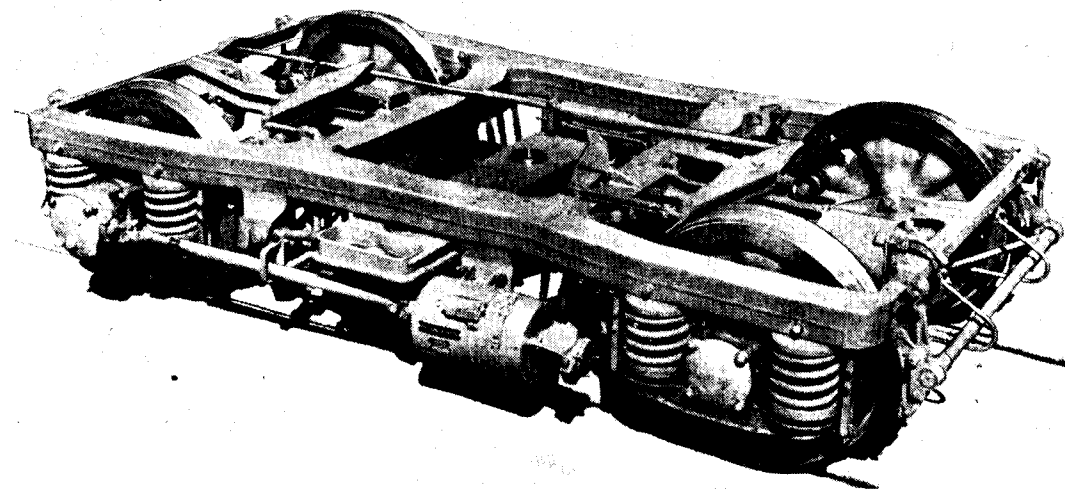
Schlieren

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(INTEGRAL COACH FACTORY MAGAZINE)

EDITORIAL NOTICE

All contributions must be clearly typed and doublespaced on one side of the paper only, and signed, not necessarily for publication, but as a guarantee of good faith.

Manuscripts and photographs, not accepted for publication, will not be returned unless the sender so requires. Intending contributors from outside our Factory, if they intend to get back unaccepted articles and photos, should send a suitably stamped and self-addressed envelope along with the material sent by them.

Contributions should be addressed to the Editor, not by name, and reach him not later than the 25th of every month for consideration for publication in the next month's issue.

The Editor does not assume any responsibility for the accuracy of the news supplied by correspondents or for opinions expressed by contributors. Opinions expressed in the "RAILCOACH" whether editorially or by contributors should be regarded as having no official authority.

Rs. nP.
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CONTENTS

OCTOBER 1957

	PAGE
Message from the Railway Minister	4
Message from CAO (R)	5
Editorial	7
Railways in the Parliament	9
The Home Minister on the role of Public Servants	13
ICF Forges Ahead	15
Furnishing of Integral Coaches	21
Accounting for Control in I.C.F.	25
Railway Buying Today	29
Preventive Maintenance Programme	33
May we help you	37
Let us do our bit	41
Class IV Staff Promotion Committee's visit to I.C.F.	43
Highlights of Second Production year	44
Man's Place	47
Shop Safety	49
March of Science	51
News from Switzerland	55
Care of hand tools—Bits and boring tools	57
Maladies or Melodies	63
Inter-Railway Foot-ball	67
Pleasure from Leisure	71
Eve's Page	73
Onam Celebrations	77
Grin and Bear it	79
Brain Teasers	81
Our Family	83
They were Married	85
News-makers	87



MINISTER FOR RAILWAYS
INDIA
New Delhi: 20.9.57

'Rail Coach' which originally started in Jan. 1956 as a house organ of the Integral Coach Factory was converted into a priced publication from October 1956. I have seen the issues of 'Rail Coach' since I took over as Minister of Railways and found its articles interesting and instructive.

The contributors of the magazine who come mostly from the staff of the Integral Coach Factory have shown a flair for writing and demonstrated that besides possessing technical ability they have journalistic aptitude also.

I am glad to know that it is proposed to bring out an Annual Number of 'Rail Coach' shortly to mark the completion of the first year of its publication and I wish the endeavour all success.

Signature

Message

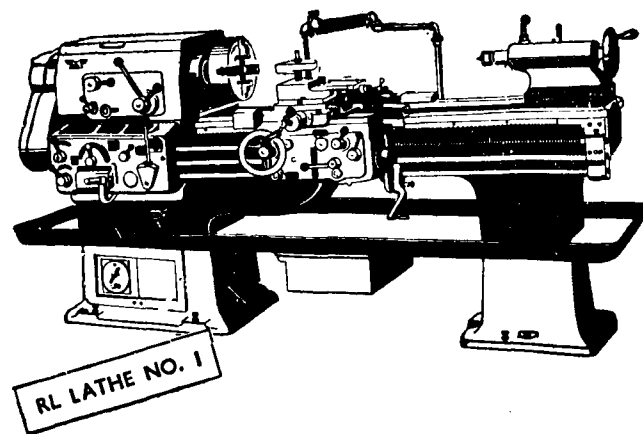
Our Newsletter Magazine " Rail Coach " which came out as a priced publication in October 1956 has now completed one year with such remarkable success, and on the occasion of this first anniversary, I wish to convey to the staff who have spontaneously given off their best in this venture, my warmest felicitations and good wishes.

The " Rail Coach " has endeavoured to portray in a most faithful manner the official and social activities of our I.C.F. family, besides serving to disseminate valuable technical information and knowledge amongst our members. It has helped to provide varied and interesting fare to the readers and has also provided a useful forum for bringing out the latent talent in our staff in the fields of art, literature, etc. The Magazine has been assiduously endeavouring to develop a spirit of esprit de corps amongst the members of the I.C.F. family and promote amongst them a spirit of mutual co-operation and devotion to duty in a common undertaking. The popularity of this Magazine has been steadily growing and the day is not far off, when this Magazine will be eagerly looked forward to month, after month, in every home in the I.C.F. family. I have no doubt that in the years to come, this Magazine will grow from strength to strength and be a source of education and entertainment to all those interested in the Indian Railways.

Madras
20-9-57

Signature

Chief Administrative Officer.



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EDITORIAL

FIRST BIRTH DAY

A little over a year ago a decision was taken to convert the popular news-letter magazine into a priced magazine with a view to widening its scope and also make it pay for itself.

The first issue of the priced magazine "Rail coach" appeared on the 2nd of October, 1956 pledging itself to the service of the I.C.F. family. The objectives were to disseminate technical information, bring out the latent talents in the staff in the fields of Culture, Art and Literature, cover official and social activities in the I.C.F. area, furnish news of interest to railwaymen in general and staff of the I.C.F. in particular and last but not least reach as many members of the I.C.F. family as possible. A year has gone by and with all humility we wish to record that the objectives have been more than achieved. Technical and useful articles are being regularly published. The belief that there is no dearth of talent in the I.C.F. has been, we are glad to say, well established, as the readers themselves would have noticed, from the number of articles regularly contributed by the staff. Our object of reaching practically everyone of the I.C.F. family has also been achieved to a very great extent, as the number of subscribers has steadily been going up, with the growth of the I.C.F. family and on date is well over 1,000. In fact this figure is flattering as the factory is only in the second year of production and considerable time will take before we have the full complement of men. We are also glad to record that the magazine has been able to pay for itself. This happy position is due in no small measure to the sustained encouragement we have received at the hands of our beloved Chief Administrative Officer and the good wishes of our contributors and the other members of the I.C.F. family. We offer our prayers to the Almighty for His kindly grace and our thanks to all our well-wishers for the prosperous year the "Rail Coach" had.

The "Rail Coach" is entering its second year of existence under very auspicious conditions coming out as it does on the Birthday of the Father of the Nation and the Anniversary Day of the inauguration of production. Fortified with the blessings of the Hon'ble Railway Minister and our Chief

Administrative Officer and with the continued support of the staff,

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Railway Buying To-day

BY

A. V. SUGAVANESWARAN,

Dy. C.O.S.

It will perhaps be a surprise to many Railway-men themselves that the Indian Railways purchased stores to the value of over Rupees 219 crores during the year 1955-56. As so many statistics of the Second Five-Year Plan are, this figure is also truly staggering and is even beyond the comprehension of many people whose annual budgets do not exceed four figures. The range of items covered by this astronomical figure is also very considerable. Rolling stock of various categories, Signal and Inter-locking materials, rails and other permanentway equipment, bridge work, machinery of various types and descriptions and Iron and Steel, naturally constitute the bulk of the purchases in value. Thousands of various articles, such as, tools, hardware, paints, chemicals, oils, stationery, instruments of various description, electrical stores, and a host of other things too numerous to mention are being purchased every day for use in the Railways. The saga of buying all these items within the time required and without transgressing the various rules and regulations is an achievement of which all Railway Buyers can well be proud.

The biggest and the most important buying machinery is the Central Purchase Organisation of the Government of India. The Directorate-General, Supplies and Disposals, New Delhi, is the most important wing of this Central Purchase Organisation. There are, Regional Directors functioning under the Director-General in Bombay, Calcutta and Madras. The Director-General, India Store Department, London, and the India Supply Mission, Washington, are responsible for India



Government's purchases in Sterling and Dollar areas respectively. The Controller of Printing and Stationery is in charge of all stationery, typewriters and allied requirements of the Government of India. All these major Organisations come under the Ministry of Works, Housing and Supply. The Iron and Steel Controller, who is the chief buyer of these materials on behalf of the Government of India, functions under the Ministry of Steel, Mines and Fuel. The Director of Textiles and the Superintendent of National Instruments Factory are other Government Officers who meet the needs in their respective categories of the various Government of India Offices. Indents are placed on these Organisations by other Government of India Offices including Railways for necessary procurement action. Complaints are sometimes heard of the delays in the D.G., S. & D. Organisation. In fairness to all concerned it is necessary to view the organisation of the D.G.

outlay of Rs. 4,800 crores in the Public Sector only. Even before the end of the first year of the Second Five-Year Plan it has become clear that the Second Plan is a mighty one, and calls for considerable effort. The vast capital outlay has generated an inflationary spiral. High speed steel tools, cables and aluminium sheets may be quoted as example. Though production has increased in these and other commodities, the supply position has worsened due to increasing demands. Thus we have today what is termed a "sellers' market"—a market in which the seller is at an advantage because he can dictate terms to the buyer.

The Railway Buyer has to function necessarily in this fluctuating and difficult market. Functioning within the framework of the rules he has to keep a grip over the market and prices and ensure that his prime responsibility of producing materials as and when required is duly fulfilled.

Perhaps one aspect of the Buyer's responsibilities has not been sufficiently high-lighted in the past. The Buyer has a certain responsibility towards the seller in the payment of the latter's bills whatever the organisational set-up may be. In present day conditions where credit is extremely tight and money is not readily available the importance of passing bills early needs no emphasis. Money should circulate

freely to accelerate development of the country and for this purpose it is essential that all liabilities are liquidated promptly. We have recently read in the newspapers that the bank rate in West Germany has gone down and the bank rate in England has moved up. It shows that money is easy in West Germany and that it is tight in England. The position in our country is more akin to that obtaining in Britain than that in West Germany. This is due to the fact that we have taken in hand a great number of development projects which do not bear fruit immediately. It is therefore a national duty to see that all firms' bills are passed with the utmost expedition.

It is my impression that the Buyer and his problems have not received proper attention and appreciation in Railway circles. Perhaps the Buyer himself is partly to blame if he has failed to keep Railway opinion adequately informed of his problems. It is only with a view to apprising Railwaymen of the role of the Buyer that I have ventured to jot down the limitations under which the Buyer has to function today. It is not my intention here to attempt to criticise any organisation but only present the case of the Buyer. In the forward march of the Railways the Buyer has to keep in step. A sympathetic appreciation of his point of view at all levels will fortify him in his resolve to keep in step.

Preventive Maintenance Programme

BY

H. BAENZIGER

Dy. C. T. M.

The essence of preventive maintenance is regular inspection at pre-determined intervals. Depending upon the type of equipment, frequency of inspection may be as often as one hour, to as far apart as one year.

sounds easy. Actually estimating failure as far ahead as one year is not so simple.

The necessity for reconditioning an equipment will in this case depend on the findings of regular inspections. Reconditioning will have to be so timed that there is the least disturbance to production.

In making routine inspections, all component parts should be examined carefully for signs of failure. Estimate how long the equipment can be run before failure takes place. This

Included in the periodic inspections is the lubrication service, which makes certain that each machine is properly lubricated.

INSPECTION SCHEDULE

For Lathe, Drilling, Milling, Shaping and Grinding machines

Inspection				By
Nature		Period		
Clean Machine		Daily (		

Inspection			
Nature	Period	By	
Wash down and recoil columns of radials. Check for any possible damage, polish off scratches and prevent scoring.	Monthly	Millwright	
Clean coolant tank and Strainer	Every two months	Operator/Millwright	
Clean Oil Filters	Every two months	Millwright	
Check Belts for proper tension (Never to be too tight)	Every two months	Millwright	
Check Motor starting equipment	Every six months	Electrical staff	
Check and Grease Motor Bearing	Every six months	Electrical staff	
Repaint machinery	Every six months	...	
Check alignment of machine and reset ...	Yearly	Millwright	
Inspect machine : Testing all speeds and feeds	Yearly	Millwright Foreman	
Check all slides, Tables, Rams, spindles for free movement without play.	Yearly	Millwright Foreman	
Check feed screws for back-lash	Yearly	Millwright Foreman	
Check all end stops and limit switches ...	Yearly	Electrical/Millwright Foreman	
Change oil in Gear boxes and Hydraulic systems	Yearly	Millwright	
Dismantle, clean and reassemble motors ...	Yearly	Electrical Foreman	
Decide if reconditioning necessary based on report from Millwright Foreman	Yearly	Asst. Mechanical Engineer/Plant, District Electrical Engineer.	

Lubrication service by Millwright

In accordance with the Inspection Schedule the lubrication service by the Millwright is to :—

1. Inspect, weekly, the Central lubricator and refill.
2. Inspect, monthly, the oil level in Gear Boxes, Hydraulic systems and refill.

3. Inspect every month and clean the oil filters.

In order to guarantee that these inspections are rigidly followed, it is suggested that on each machine a surface of 7" × 9" is to be selected and painted black so that the dates can be painted on it in white. If no such surface can be found a chart with particulars entered,

in transparent envelope, is to be hung on or near the machine.

The following inscription is to be painted on that surface or made on the chart in accordance with the requirement of each machine as the case may be :

Inspect weekly central lubricator :

Next inspection due :

Inspect monthly oil level in gear box in hydraulic system

Next Inspection due :

Be sure that a piece of wood or soft material is placed between two metal surfaces in case it is absolutely necessary to rest the work on the ways.

Do not overstrain Scroll-chuck, saws and leadscrews beyond repair.

Keep machine equipment, such as chucks, faceplates, centres, screws, dividing-head, wrenches, straps, studs in the tool cabinet or bench provided for them.

In mounting a chuck, faceplate, dividing-head, vise, vertical-head, wheel centre, centre-sleeve, jigs, fixture, etc., be quite sure that spindle nose, spindle taperhole, table, etc., are absolutely free from dirt and grit.

Never rough-cut and finish one portion of the work and then go on to rough-cut and finish another. Always do all roughing-cuts before making finishing cuts.

When hoisting heavy work, jigs, fixtures from a machine, be absolutely sure that the work is free and clear of clamps, hold-down devices, lathe centres, chucks, etc. Any upward pull on the machine will cause misalignment of ways, upset level and possibly break machine castings.

Conclusion

Freedom from breakdown and improper functioning of machines and equipment is in direct proportion to the thoroughness and effectiveness of the maintenance and care they receive.

Lack of an adequate maintenance programme, say preventive maintenance programme, is not only costly in the long run but injurious to the equipment, and sustained production.

May We Help You !

(Under this title the Technical Training School will present a series of articles dealing with the basic principles of the different trades followed in the Integral Coach Factory, designed to assist aspiring employees to learn the trade and improve their prospects—Ed.)

Basic Fitter

One who aspires to become a Basic Fitter should fulfil the following conditions. He should know :—

1. General safety precautions to be observed in the workshop.
2. The names of common tools and accessories pertaining to the trade.
3. The correct use of the tools.
4. Simple maintenance of tools.
5. Names of major terms of operation pertaining to the trade.
6. To read and take measurements from a steel rule.

He should also be able to work with his hands and complete a simple practical test in the trade.

General Safety Precautions

As the bread winner of his family, each worker should be safety-conscious and take special care to see that he does not expose himself to injury. An injury, besides personal discomfort, leads to considerable anxiety to near and dear ones and, in extreme cases, leads to disfigurement and loss of earning capacity.

The Administration is interested in the well being of each worker and arranges for the supply of protective clothing, goggles, etc. Warning notices are displayed prominently to serve as a sort of reminder. If a worker takes advantage of the facilities provided and adheres to the safety regulations he should be able to escape getting injured.

The following safety hints are intended to serve as a reminder.

1. Proper foot-wear, preferably with thick soles, protect feet from injury.
2. Loose garments, open cuffs, torn dress, etc., should be avoided as they are liable to be caught between revolving parts and cause injury.
3. Goggles protect eyes from injury while grinding tools, chipping, and such operations where there is a likelihood of foreign matter flying into the eyes.
4. Standing clear of machines reduces chances of injury by moving parts.
5. Tools by themselves do not cause injuries. Careless handling and improper use of tools lead to accidents.
6. Off-cuts, bolts, patches of oil, etc., on floor are likely to lead to a fall and serious injury.

Man's Place

BY

T. S. JAYARAMAN

D. C. O. S.

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From the time of recorded history of the world man has been lording over it. The laws were made by him and he took care to give a subordinate place to the woman. She was told to believe that the sole mission of her existence was to please the male. She bore him children and was the toiler at home. It is surprising how the mere male managed to keep the female under bondage for such a considerable time. It is only recently—less than a century—that the woman began to assert herself—particularly woman of the West. She is still far from ousting the man from the place he has assumed for himself. Our enlightened legislators and the wiseacres of the land seem to think that by women coming forward to compete with men in ordinary occupations, they are trying to get the better of the men. But this is not so.

Take the Army—a field where women are not coming forward to compete as front rank soldiers. Such a profession as the Army in which appearance, uniform, smart turnout and display are material elements the woman has special advantages.

Politics is another field where the woman's power of persuasion, contention, ingenuity and the apparently inexhaustible power of the lungs can be used to advantage. We have and had an infinitesimal number of women as politicians but more could be there, by choice. It is also a fact that a woman has more tact, better understanding of the suffering and is more religiously inclined. Is she not more suited to administer solace to the suffering souls than the male ?



Again the woman is known for her intuitive genius for striking bargains and haggling. She should, therefore, be in Trade and Commerce where her innate qualities will help her excel man. Being gentle, compassionate and sympathetic she is also eminently suited to take to the medical profession where she will shine better than the man. It is clear that the woman will make a better politician, a better banker or merchant, a better doctor and a better soldier than man. The natural step to be taken is for the men to give place to women. Men have had their days.

What shall the man do ? Naturally household duties. Is he fit for the change ? One should say that the natural place for the man is the home. He will make a better cook than the woman because in the culinary field all famous cooks are men—both in the West and in the East. Here is an immediate opening

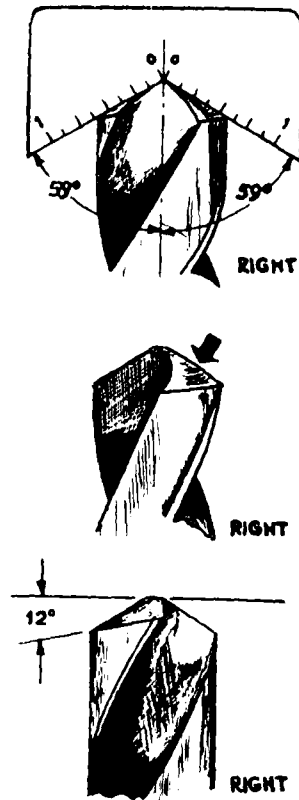
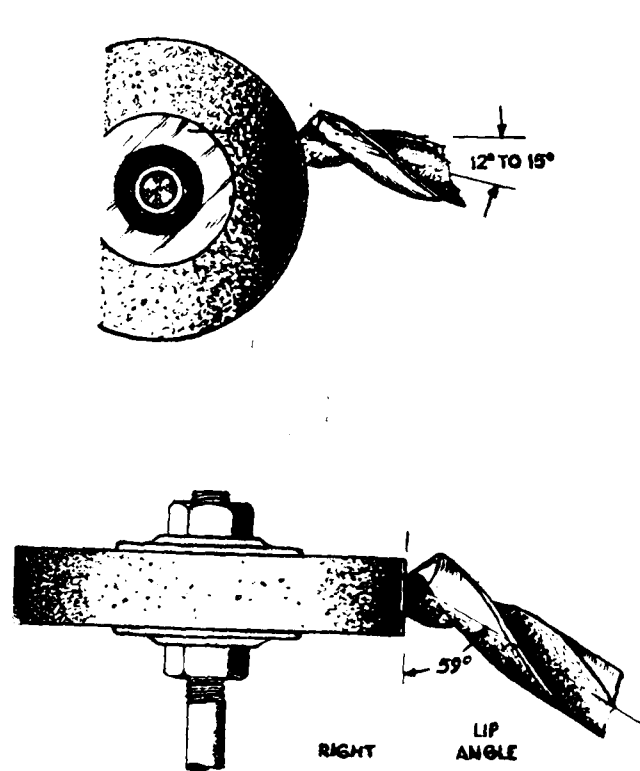
for the

Twist drills may be ground in a drill holder fixture or free hand. Use fixture if available. Both methods are described below.

Grind drill lips or cutting edges at an angle of 59 degrees, as illustrated (50 to 60 degrees for drilling brass or bronze, 68 degrees for extremely hard material). Both cutting edges

must make same angle with drill axis, and both cutting edges must be of same length.

Grind heel to an angle of 12 to 15 degrees (9 degrees for drilling extremely hard material). Failure to provide sufficient clearance is the principal cause of drills splitting up the web.

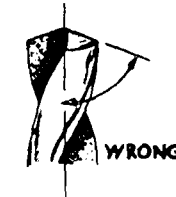


Some Common Grinding Faults to Guard Against

FAULT

RESULT

Lip Angle excessive



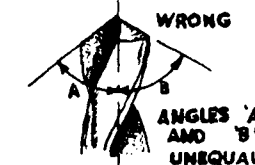
Drill will not centre properly because coneshaped point is too flat.

Lip angle too small



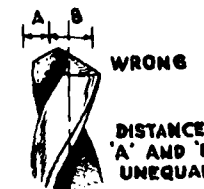
Drills slower and requires more power because of longer length of cutting edges, and requires frequent sharpening.

Point on centre but cutting edges ground to different angles.



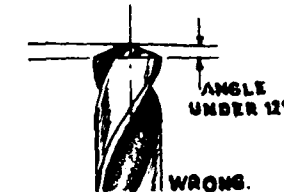
Only one cutting edge will do work. This results in rapid drill wear and causes hole to be larger than drill.

Cutting edge angles are equal but lips are of different lengths.



This throws point and lip off centre, causing strain on drill, machine and work and causing hole to be much larger than drill.

Insufficient heel angle or clearance.



Cutting edges lose effectiveness. Drill won't drill and may split up centre when pressure is applied.

<



Shri H. Baenziger

Our best wishes to

1. Shri E. Gruendler, Chief Draftsman, returned to Schlieren on 5-9-57 on completion of his contract period.
2. Shri H. Baenziger, Deputy Chief Technical Manager, returned to Schlieren on 21-9-57 on completion of his contract period.

*All the blocks appearing in this Annual Number
have been made by Messrs G. K. Vale & Co.—
our block-makers*

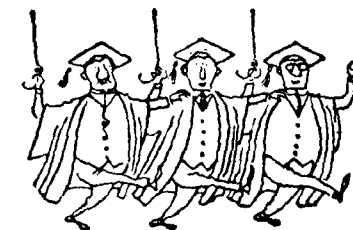


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