

The Bull Sheet

Official Bulletin — Midwest Association of Golf Course Superintendents

VOL. 2

1949

JUNE ISSUE - GLEN ELLYN, ILL.

NO. 5

" I'LL BE LOOKING FOR YOU AT —

**NORTHMOOR
COUNTRY
CLUB - JUNE 6th**



FRANK DIWELLI

U.S.G.A. NATIONAL OPEN AT MEDINAH C.C. JUNE 9th 10th 11th -

THE MARSHALL HONOR ROLL

Herman Woehrle	William Oates	George Roloff
Walter Hoyt	Albert Rauch	Andy Gillett
Leonard DeBruyn	John Coghill	M.L. Baker
Stanley Arendt	Frank Mastroleo	Edward Tilges
William Smith	Norm Johnson	Herman Drafke
Pete Stewart	Joseph Canale	Bill Stuppel
Melvin Warnecke	Roy Chaplin	Paul Popp
Carl Bretzlaff	Fred Plahm	
Ray Gerber		
Jerry Spotswood		
Paul Burdett		
Harold Reed		
Robert Williams		
James Service		
George Davis		
Ben Gee		
Roy Robinson		
Don Strand		
Warren Roseman		
Edward Muzik		
Edward Dearie		



"COME ON PAL, LETS
GET OUR NAMES ON
THE MARSHALL LIST"

FACTS *about* TRACTION

Correct Air Pressure

Since the development of the first pneumatic tractor tire, correct air pressure has been a contributing factor to the successful performance of the tire. Rear tractor tires are designed to operate at low pressure. They give best performance when operating at only 12 pounds pressure. Improper inflation has caused many complaints. In many cases the tires have been over-inflated to the point where they do not give satisfactory performance.

When a tractor tire is over-inflated it does not have sufficient area of contact with the ground. This condition causes slippage with eventual loss of traction. The slippage is also a contributing factor to fast wear on the tread surface.

An over-inflated condition is easily recognized as the tire is hard and in a full rounded condition. When the tractor is sitting on a hard surface, the outer edges of the traction bars do not contact the ground and in some cases, it is possible to slip the toe of your shoe under the traction bar edge. This over-inflated condition is apparent on most new tractors.

The tires on new tractors are purposely over-inflated at the factory for better handling during transportation. Over-inflation reduces the bounce and assures safe mooring of the tractor to the flat car or transport. In most cases the tires are inflated to 35 pounds pressure. This pressure should be reduced before the tractor is unloaded from the flat car or transport.

Rear tractor tires should never be inflated beyond 12 pounds pressure for normal operation. This 12 pounds of pressure, when the tire is properly weighted will permit a full tread contact. This large tread area contact enables the tire to take a bigger traction bite assuring increased drawbar pull. The properly inflated tractor tire has a certain amount of deflection or bulge of the sidewall where the tire contacts the ground. This bulge is normal and should not be considered as injurious to the tire body. This deflection

of a tire properly inflated has been of much concern to its users. Many of them feel that this is an indication of under-inflation and proceed to increase the air pressure which results in unsatisfactory performance as explained in the second paragraph concerning the over-inflated tire.

Added Weight.

The use of added weight to increase the traction is not new in the agriculture tire business. It has been successfully used ever since the pneumatic tractor tire was developed. During the early stages of the tractor tire business, concrete weights were used extensively. Later, cast iron was found to be more convenient. In 1935, adding liquid weight by inserting the liquid through the valve into the inner tube of the tire was found to be more economical and very practical. The use of liquid weight is now universally accepted in the agricultural field.

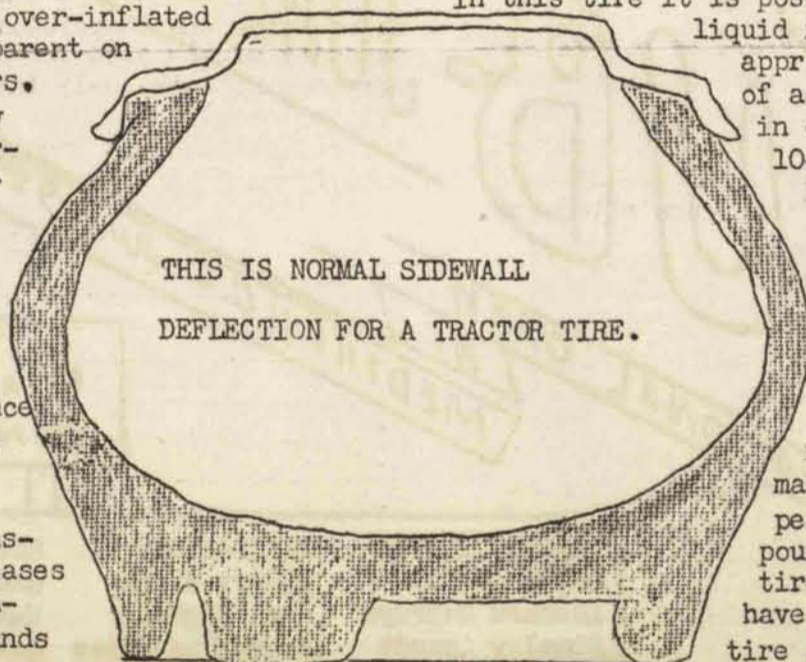
Many of our light-weight tractors use as standard equipment the 10-28 size tire. In this tire it is possible, using a 90% liquid fill, to add

approximately 310 pounds of additional weight in each rear tire. The 10-28 tire has a rated load capacity of 1575 pounds when inflated to 12 pounds pressure. The delivery weight of a Ford tractor without mounted equipment, is approximately 750 pounds per tire. When 310 pounds of liquid per tire is added, you have a total weight per tire of 1060 lbs. This

1060 pounds weight per tire is 515 lbs. below the rated load capacity of the tire.

When increased drawbar pull is required additional weight may be provided by the use of cast-ironed weights. Cast-ironed weights are designed to fit into the wheel assembly. Maximum traction is obtained when a rear tractor tire is properly inflated and weighted to its load capacity. The importance of added weight to secure maximum drawbar pull is best illustrated in a summary of recent tractor tests conducted by the University of Nebraska. The following is a summary of 10 recent tests at the university:

(continued on page 3)



Tractor	Rear Tire Size	Added Liquid	Added Cast Iron	Total Added Weight	Type of Wheel
A	8-24	116	200	316	Pressed Steel Disc.
B	9-36	222	560	782	Cast Spoke
C	10-28	226	528	754	Pressed Steel Disc.
D	9-24	148	450	598	Cast Disc
E	10-28	- -	670	670	Pressed Steel Disc.
F	11-38	242	435	677	Cast Disc
G	11-38	417	560	977	Pressed Steel Disc.
H	12-38	544	701	1245	Pressed Steel Disc.
I	14-26	696	775	1471	Cast Disc
J	13-38	710	891	1601	Cast Disc

The method of adding liquid weight in tires to obtain 90% fill is accomplished by using a special valve adapter having a vent tube which is inserted into the tire through the valve opening. When adding liquid weight, it is recommended that 5 pounds of calcium chloride be added to the gallon of water. Calcium chloride is an effective anti-freeze and also increases the weight of the solution. Water weighs 8.3 pounds per gallon, but when 5 pounds of calcium chloride per gallon are added, the resulting solution weighs 10.75 pounds per gallon. Thus, when adding this amount of calcium chloride to a gallon of water, you increase the weight of the solution approximately 30%.

When testing the pressure of a tire containing calcium chloride, it is necessary to use a Schrader Air-Water Gauge, no. 9350. This gauge is especially designed so that the calcium chloride solution may be cleaned from the gauge after use.

When a regular air gauge is used, it is possible that it will be ruined by the calcium chloride upon testing only one tire. It is also important when checking the pressure of tires containing liquid weight that the valve be placed at the bottom of the wheel, as the added liquid increases the pressure at that point. A variance of as much as two pounds can be obtained by checking the pressure when the valve is at the bottom of the tire, as compared to the pressure when the valve is at the top of the tire. Also, the full weight of the tractor should be on the tire at the time of testing. Tire manufacturers recommend that users add sufficient weight so that they may obtain the maximum performance that is built into the tractor.

SELECTION OF ALTERNATE TIRES.

On many occasions, tractors are purchased to operate in industrial plants, on highways, or golf courses. Standard rear tire equipment is the 10-28 agricultural type tire. When the tractor is to be used for other than agricultural purposes, the All Non-Skid Tire is more desirable. The All Non-Skid Tire or button type tire is available from your tire supply point. As this type tire is not used as original

equipment, it is necessary for the dealers to make the changeover in their service department.

There is another tire changeover which is becoming very popular when front end loading equipment is used. The 4-19 front tire and disc wheel are removed and a 16" disc wheel placed on the tractor. On the 16" wheel you may mount a 5.50 or 6.00-16 size. These sizes are available in 4, 6, and 8-ply construction. When the 8-ply rating tire is needed, because of its higher load carrying capacity, it is necessary to use a 16" wheel equipped with a 4.25 heavy-duty rim. Due to the head construction of the 8-ply tire, a heavy-duty rim is necessary. The following chart illustrates the comparative carrying capacity of the 5.50 and 6.00-16 tires as compared with the 4-19 tire which is original equipment. This chart also shows the recommended air pressure for the various front tires.

Size	Ply	Inflation Pressure Lbs.	Max. Load
4-19	4	28	575
5.50-16	4	28	780
5.50-16	6	36	900
5.50-16	8	64	1265
6.00-16	4	28	915
6.00-16	6	36	1065
6.00-16	8	60	1430

The Firestone Tire & Rubber Company

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CONTROL OF ANTS IN TURF AND SOIL

A new insecticide, Chlordane, has shown considerable promise in experiments conducted for the control of ants in turf and soil. It is a chlorinated hydrocarbon, having the empirical formula C₁₀H₆Cl₈, that is highly toxic to a wide range of insects, including several common agricultural pests. It kills in three ways, by fumigation, by direct contact and by ingestion. Toxicity to man and other warm-blooded animals is similar to that of DDT 3, 4, rather mild, when compared on an equal weight basis. The insecticide was sprayed on pasture forage at the rate of four pounds actual Chlordane per acre and mature sheep were immediately allowed to graze until all available forage was eaten. No ill effect on the animals was noted.

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WINDBURN INJURY ON GREENS AND FAIRWAYS

"LET'S NOT ARGUE ABOUT IT"

O. J. Noer

By: Robert Williams

This is another dry spring like 1948, with windy days, but temperatures have been higher than a year ago. Windburn damage was bad last spring. This year the creeping bent on many fairways and in patches on some greens, is brown from windburn. The grass started to turn green, then withered and died for want of moisture. There are no roots of any consequence under the damaged bent. Injury is confined to places and spots where the turf is heavily matted.

The fairways on one watered course were injured last season, but not this year. They were cross-disced in the spring of 1948, aerified then and again last fall. The grass has a better and deeper root system. That is the reason for no damage this spring. There are enough roots in the deeper moist soil to carry the grass through the dry spell.

At another course the greens were badly windburned in 1947. The turf had almost no roots that year. The injury this spring was confined to a few spots of matted grass. These greens were aerified twice last year, once in the spring and again in October. Examination with the profile sampler shows a vastly improved root system.

Most of the windburn spots can be brought back. New growth is starting from nodes. Light watering by hand several times a day is a must on dry hot days and is imperative until the new young plants become well established. Many of them will die unless the soil at the surface is kept moist - but not saturated.

Deep forking by hand of windburned spots in greens, or with the turferator or aerifier should be done promptly this spring in order to develop deep roots. Greens should get the same kind of treatment next fall.

Localized dry spots and wilting may occur on these greens this summer. When that happens, grass will die and turn brown unless watched constantly - seven days a week. A little water must be applied by hand whenever the grass starts to turn blue which is a sign of wilting. Greens must have attention on Saturdays and Sundays as well as the other five days in the week during bad weather.

Windburn fairways should be aerified, cross-disced, or spiked deeply this spring to open the matted turf and permit the entrance of water. They should get the same treatment next fall.

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N. G. S. A. COMMITTEE CHAIRMAN 1949

- Ray Gerber - Educational Committee
- Frank Ermer - Show Committee
- Leo Feser - Editorial Committee
- Malcom McLaren - Golf Committee

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"Don't worry" is a better motto if you add the word, "others."

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Weather facts concerning the Chicago Area:

Average precipitation:

April thru September - 20 inches
Average date of last frost in Spring:
April 15th to 30th.

Average date of first frost in Fall:
October 10 to 20th.

Number of growing days in the season:

La Grange	167 days.
Chicago University	196 days.
Waukegan	158 days.

Average annual precipitation:

32 to 34 inches.

28% of annual rainfall is in the spring.
32% of annual rainfall is in the summer.
26% of annual rainfall in in the fall.

For the State of Illinois - Weather Averages.

CLEAR on 160 days
PARTLY CLOUDY on 94 days
CLOUDY on 111 days

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Thought and learning are of small value unless translated into action.

--- Wang Yang-Ming

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LETTERS TO THE EDITOR

Dear Norm:

Just a line to say what a grand job you fellows are doing with the Bull Sheet. I get a real bang out of it each time and, for the first time, we are able to keep up with your thinking and your developments. The Bull Sheet, and other periodicals like it are significant factors in the educational phase of the broad turf program. They fill in the more intimate details of turf management which the national publications never will be able to do. More power to you.

I'm looking forward to my visit in June at Medinah.

Sincerely,
Yours for better Turf.
Fred V. Grau, Director
United States Golf Assn.
Greens Section

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- Associate Editors -Robert Williams
- John R. Coghill
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