sootvetstvuyuschaya method for determining parameters at ratsyonalnыh Application for work in the field podkatnыh vozkov.

Keywords:*Transportation of grain kombaynы, poluchelnokovoe motion, Tipper semitrailer, podkatnoj vozok, proyzvodytelnost*

Annotation.*It is proved developments of technological process of conveyance of grain from combines by semi-trailers dump trucks and the matching technique of determination of rational parametres is specified at application for work in the field of roll sleigh.*

Key words: *transportation of grain, harvesters, semi-shuttle movement, dump semi-trailer, roll sleigh, productivity*

UDC 631: 372

Self-propelled chassis layout SCHEME - REALITY AND CONSTRUCTION AREAS OF IMPROVEMENT

GV Shkarivskyy, Ph.D.

Abstract.*The results of the analysis of structural and circuit layout carrier chassis agricultural purposes.*

Keywords:*mobile power unit, layout, self-propelled chassis design, development*

Formulation of the problem. Mobile power unit (MEW) is the basis for creating machine-tractor units (AIT). The volume of manufacturing operations that can be performed using

this power means and efficiency of its use in determining the composition of the unit tractor fleet management, and hence the cost of the final product. It is the ability to create units for various purposes and layout essentially depends on the design-layout scheme MEW. Recently, the company specialized in manufacturing self-propelled machines put emphasis on the creation of such units at the self-propelled chassis. Under such conditions the relevant question is aimed at studying the trends of structurally-layout circuits MEW and with the provisions of state program realization of technical policy in agriculture.

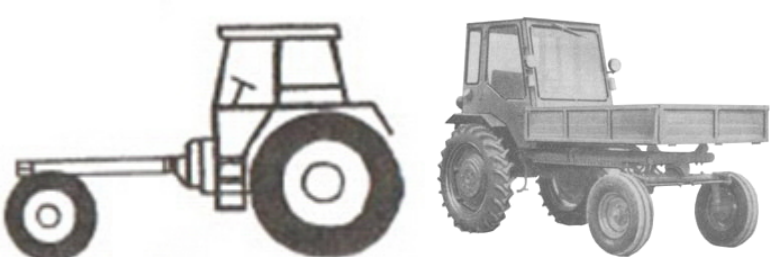
Analysis of recent research. Operating MEW design-layout circuit carrier chassis connected both advantages and challenges that accompany it. One of the main problems of self-propelled chassis layout, at this stage, there are imperfections in the overall design of the traction

maximize the potential performance and poor conditions-block with cars and tools provided use of regular block devices. The latter explains that today unabated research and development work designed to eliminate the disadvantages called design-layout scheme. This requires changing the overall design of machines and tools for the creation of such units. In this regard, scientists and engineering industry are focusing their efforts on two fronts, namely the development of machines and tools for aggregation of the self-propelled chassis; improving conditions block. The works that were carried out in these areas rarely included the improvement of the general layout of power means, but, in most cases, reduced to improve the technological development of modules and devices to improve conditions block. Specific technical solutions and the results of individual studies of these areas are set out in [1-9].

The purpose of research. Identify the real state of use and directions of design-layout scheme MEW such as "self-propelled chassis."

Results. Structurally-layout scheme MEW is subject to a functional purpose power means and is characterized by individual design characteristics, namely size and type of engines; arrangement of components and systems; the availability of space for mounting machines, tools and installation of technological capacity; base; largest road and crop lumen; coordinates of the center of mass. [10]

Tractor-propelled chassis (often used the phrase "self-propelled chassis" or "chassis") - motorized transport means, serially produced and performed mainly on the basis of units and units of tractors. Self-propelled chassis (Fig. 1, a) layout a special place among universal tractors.



and) b)

in) d)

d) is)

Fig. 1. Tractor propelled chassis domestic and foreign production: a - schematic diagram; B - Self-propelled chassis of T-16 mg (Ukraine); - samohidne chassis in such school-28 (Ukraine); g - Self-propelled chassis type VTZ-30SSH (Russia); E - self-propelled chassis type Fendt F 231 GT (Germany); e - self-propelled chassis type Fendt F 255 GT (Germany).

This chassis is characterized by the engine, transmission, cab post controls form a single unit, located above the rear axle chassis, front frame is free to set the body or attaching machines and tools. In the self-propelled chassis of T-16 mg (Fig. 1a, b), produced by Kharkov factory propelled chassis (Ukraine) and Vladimir tractor plant (Fig. 1 c) implemented rear-engine cabin, making it difficult to block machines and tools behind MEW, as is typical for power means classic and integrated configurations. Named flaw in the construction of self-propelled chassis manufactured by Fendt (Germany) removed by placing the engine in the front cabin mizhbazovomu space (Fig. 1 d, e). Analysis of the design and use of self-propelled chassis experience shows that they can be used in the composition of units for different purposes and construction. Fig. 2 shows the possible areas aggregation process modules with self-propelled chassis that dozvolyalyi build on their base units for various purposes and layout, due to the presence of additional sites for aggregation compared to the classical and power means and integrated configurations.

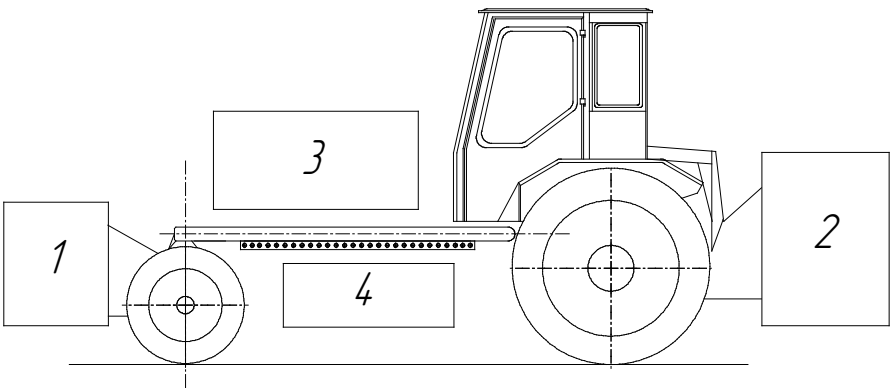
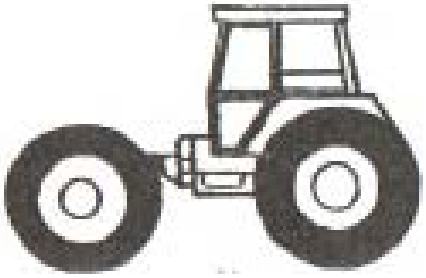


Fig. 2. Possible areas block carrier chassis: 1 - front nachipka process module; 2 - back nachipka process module; 3 - nachipka (installation) process module on the carrier frame chassis; 4 - mizhbazova nachipka process module /

Special attention deserve tractors with a free survey (Fig. 3) proposed by Fendt in the early 90s as an intermediate arrangement between the self-propelled chassis and integral tractor, aimed at increasing the role of the front driving axle in the implementation traction and weight of tools that are designed for mounting the front.

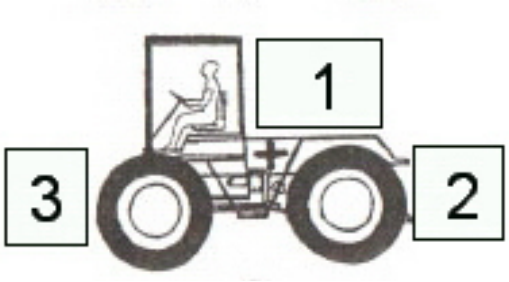
Scope of tractors with a free inspection practically covers the scope of classic cars and integrated configurations and capabilities has advantages in location and power means to the frame under the frame work of machines and tools, technological capacities so without compromising the requirements of ergonomics. So-block area of the power means of technological modules similar to those shown in Fig. 2, but appear more opportunities to create combined units.



and)

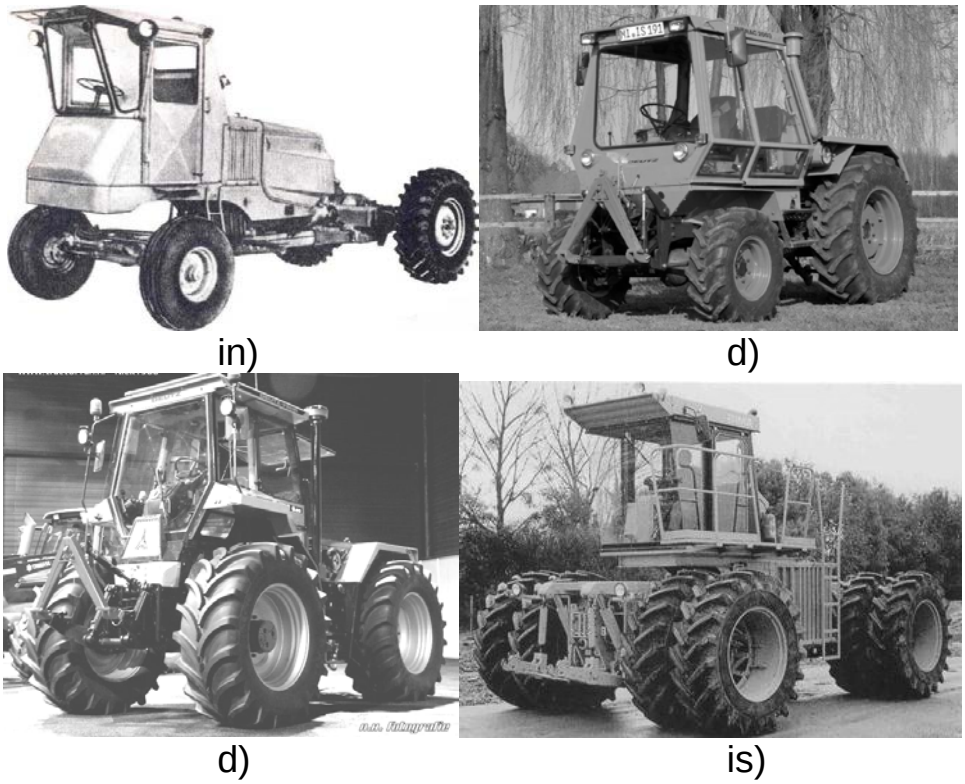
b)

Fig. 3. Tractor with a free survey: a - schematic diagram; b - type tractor Fendt 380 GT.



and)

b)



in) d)

d) is)

Fig. 4. Bearing Multi-propelled chassis: a - schematic diagram; b - samohidne chassis Claas Huckepack; -samohidne chassis in school-75 (school-like arrangement 65, School 100, School-150); g - enerhozasib Deutz Intrac 2003; d - enerhozasib Deutz-Fahr Intrac 6.60; e - Bima enerhozasib 300; 1, 2, 3 - zone location technology modules.

Bearing multi-propelled chassis (Fig. 4. a) designed to block out harvesting machine (forage and beet harvesters and others.) And general purpose tools (peredno- zadnonachipni and plows, cultivators), increasing its annual load. Chassis frame may be intact (Fig. 4 b, c) or folded (Fig. 4 d) two pivram connected pivotally. To improve handling chassis front pivrama can be made slightly shorter than the back. Cab can move along the longitudinal axis, which improves visibility and facilitates nachipku tools and machines from tillage to harvest. Under its multi-purpose bearing propelled chassis significantly expanded the scope of use toward the creation on their base combine units and units of general purpose and peredno- zadnonachipnymy tools and machines, including combined. It should also be noted that recently the market of agricultural equipment producers, new self-propelled multi-bearing chassis.

So the world famous propelled harvesters company specialized Holmer. Several years ago, the firm presented a multi-bearing self-propelled chassis (which is sometimes called the system vehicle) was established using assemblies and units specialized power module self-propelled machines. Machines and similar structures are known under

the brand Vredo (manufacturer of the Netherlands Vredo Dodewaard B.V.) - Fig. 5.

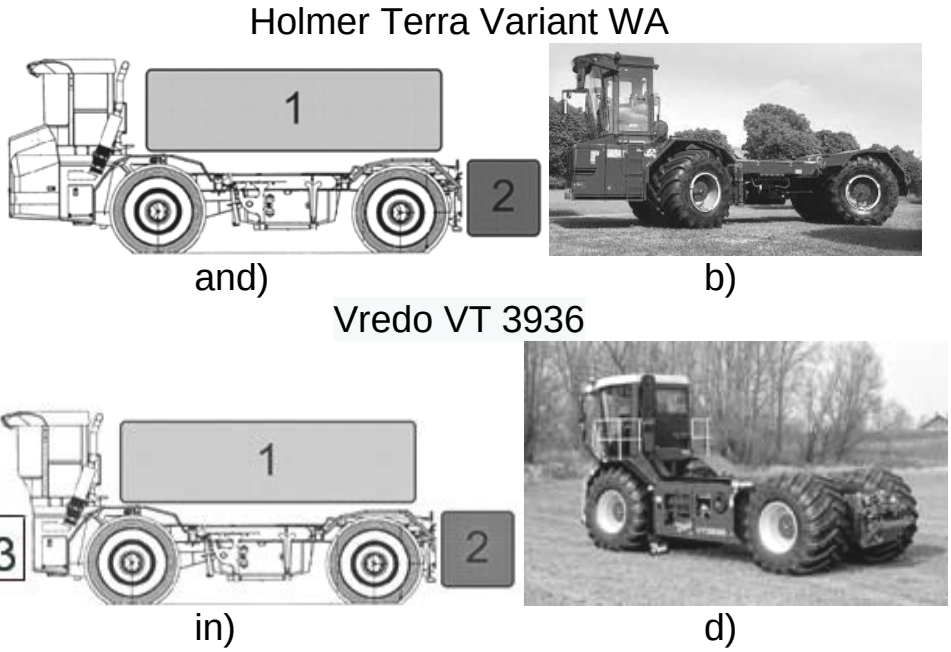


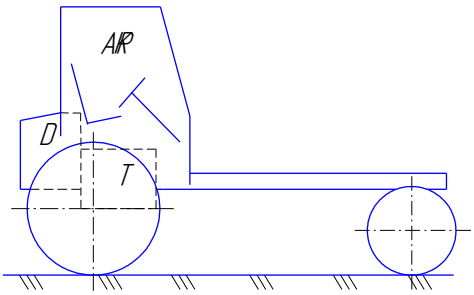
Fig. 5. Multi-propelled chassis bearing: a - schematic diagram; B - general view; 1, 2, 3 - zone location technology modules.

All mentioned above relate to car MEW design-layout scheme of "self-propelled chassis" when that can perform a completely different list of technological operations (subject to ensuring the technological modules) with different levels of quality. Such opportunities MEW taken into account in the study of their levels of universality. As a result of [11] found that the self-propelled chassis of T-16 mg level characterized by versatility Cook = 0.38. The maximum value for the parameter called design-layout scheme of "self-propelled chassis" on the basis of modern technologies tractors and agricultural production could potentially reach 0.95, but with increases maximum speed and 1.00, that is to achieve the highest value. In the modern technological processes adopted for implementation in Ukraine power means created by design-layout scheme "self-propelled chassis" are not used. [12] However, given the rather intensive introduction in agricultural production propelled chassis in the leading countries of the world, is to anticipate these changes and in Ukraine as a state where weighty share of national GDP is produced in the agricultural sector. You should also take into account the fact that, according to [11] the maximum values of universality reaches only when all indicators that affect its value will reach the maximum possible, for a given level of technology values.

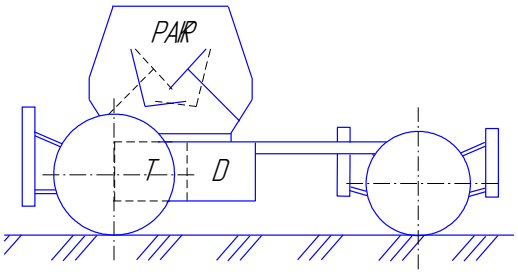
Structurally-layout scheme of power means affect the values of "the existence of the cargo area" [11] and block determines whether the frame power means the process module with ram process (combine

harvester, etc.). Of the above structures propelled chassis such characteristics have only power means such Claas Huckepack and school-75, which provides permanent (as in the construction Claas Huckepack) lateral location of the office of management, or the opportunity to reshuffle the latter on the side of power means using appropriate equipment (such as in the construction of school -75). Under such circumstances, in order to obtain the maximum values of universal design, it is useful to identify the main directions of development of design-propelled chassis layout scheme - Fig. 6.

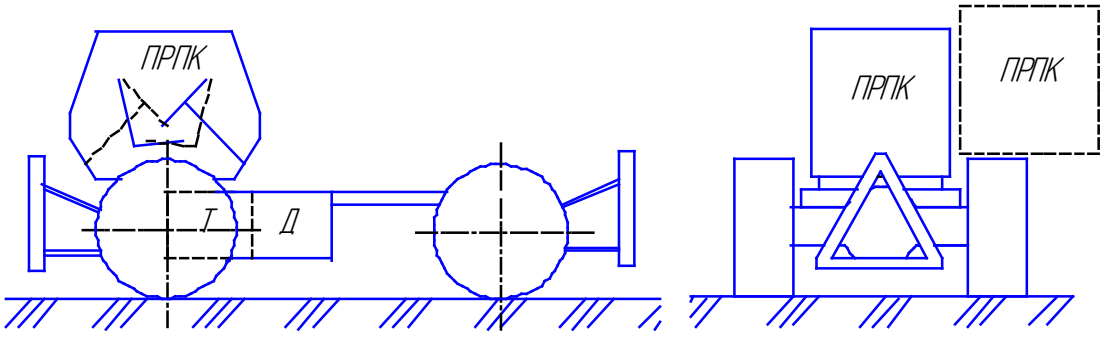
So one could argue that power means, which are self-propelled chassis configuration, according to customer requirements can be a wide range of characteristics change their consumer as to achieve the maximum level of universal design Cook = 1.00 by implementing schemes of the three options, namely: 1 - office location control over the rear axle and rear-engine, not reversing the control post without reversing transmission and all other signs must conform to those set forth in [10] for self-propelled chassis layout (similar to the T-16 mg); 2 - reversing position control, a reversing transmission mizhbazove engine-power unit, and all other signs must conform to those set forth in [10] for a tractor with a free layout inspection (Fig. 4 analog Fendt 380 GT); 3 - resettable reversing a transverse vertical plane post control, a reversing transmission mizhbazove engine-power unit, and all other signs must conform to those set forth in [10] for multi-carrier carrying chassis.



and)



b)



in)

Fig. 6. Structurally-layout scheme of self-propelled chassis and forecast of its development: a - scheme of power means of T-16 mg; b - circuit power means such Fendt 380GHA; in - perspective diagram of a self-propelled chassis; D - engine; T - transmission; PC - post controls; PKK - reversing position control; PRPK - resettable reversing position control.

Conclusion. As a result of studies found that in order to ensure customer requirements design-layout scheme of self-propelled chassis advisable to implement compliance with its basic features inherent in its own self-propelled chassis, tractor free inspection and multi-carrier chassis, which are concentrated in three circuit design, including: 1 - office location control over the rear axle and rear-engine, not reversing the control post without reversing transmission; 2 - reversing position control mizhbazove engine-power transmission unit reversible; 3 - resettable reversing a transverse vertical plane post control, a reversing transmission mizhbazove engine-power unit.

List of references

1. *Yzakson I. H.* Unyvesalnoe samohodnoe with chassis set navesnыh machines / J. H. Yzakson // Traktorы and selskohozyaystvennые machine. - 1962. - №10. - P. 16-18.
2. *Evtenko VG* The development of modular fashion creation mobylnыh power machinery funds / VG Evtenko, AN Lysenko // Technique in the agricultural sector. - 1991. - №2. - P. 13-14.
3. *Pogorily L.* Mobile agricultural energy / LV Pogorily, VG Yevtenko. - K .: Phoenix. 2005. - 184 p.
4. *E. Reinhart WITH.* SUSPENSION mechanization selhozmashyn on samohodnoe chassis / E. C. Reinhart, V. Khvostov, SE Selyfanov // Traktorы and selskohozyaystvennые machine. - 2009. - №3. - P. 12-13.
5. *Petrov GD* Creating samohodnыh selhozmashyn to power machinery bazeilles vыsvobozhdaemoho module / GD Petrov, VA Hvorostov, JH Serebryakov, *V. Dudka, VS Glukhovskaya, AK Sarapulov AA pocus, VG Kuzmynov, MG Dalnychenko, GN Smakouz* // Traktorы and selskohozyaystvennые machine. - 1987. - №12. - P. 12-17.
6. *Pisarenko AE* Creating maloэnerhoemkoy resource-saving equipment for the agroindustrial complex of Ukraine / AE // Pisarenko Traktorы and selskohozyaystvennые machine. - 2005. - № 6. - P. 18-19.
7. *Shkarivskyy G.* More efficient use of self-propelled chassis / GV Shkarivskyy, SP Pogorily, A. Kohno // Proceedings Taurian State Agro-Technical Academy. - Melitopol: Tavricheskiy State Agrotechnology University, 2005. - Vol. 27. - P. 35-43.
8. *Shkarivskyy G.* On the issue rationale for implementing block-modular construction of agricultural machines / GV Shkarivskyy, SP Pogorily // Bulletin of Agricultural Science Black Sea. - 2006 - Vol. 4 (38). - S. 286-295.
9. *Shkarivskyy G.* Prospects block carrier chassis / *GV Shkarivskyy, SP Pogorily* // Motrol: Motoryzacja i energetyka polnictwa. - Lublin, 2007. - Tom 9A. - P. 194-201.

10. *Assembly* tractors [electronic resource] / Access: http://vostok-agro.info/dokumentaciya/komponovka-traktorov.html.
11. *Shkarivskyy G.* The influence of general construction MEW on the performance of his versatility in the creation of machine and tractor units / *GV Shkarivskyy* // Mechanization and electrification of agriculture. - Glevaha: NSC "IMESH", 2004. - Vol. 88. - P. 70-77.
12. *Shkarivskyy G.* Research performance versatility tractors engaged in the performance of core processes / GV Shkarivskyy, *SP Pogorily, A. Kohno* // Mechanization and electrification of agriculture. - Glevaha: NSC "IMESH", 2004. - Vol. 88. - P. 78-85.

Abstract.*Yzlozhenы results analysis development komponovochnoy scheme design-propelled chassis selskohozyaystvennoho purposes.*
Keywords:*mobylnoe эnerhetycheskoe funds, configuration, samohodnoe chassis, Constructions, development*

Annotation.*The results of the analysis of design-layout scheme of self-propelled chassis for agricultural purposes.*
Key words: *mobile power tool, layout, self-propelled chassis, design, development*

UDC 697.921.4: 514,174: 001.8

EXPERIMENTAL STUDY OF RATIONAL GEOMETRY POSITION holes in the heat recovery units Air

VM Yaropud, applicant *
Vinnitsa National Agrarian University

Abstract. *As a result of experimental studies of rational geometry of the arrangement of openings in air-heat utilizers found that the location of the holes version (obtained by theoretical research) is the most effective because it provides even distribution of air flow along the length of heat utilizers.*
Keywords: microclimate vent, air duct, heat recovery units

Formulation of the problem. For maximum performance animals microclimate in livestock buildings (air and temperature) should ensure that, from the energy point of view, regenerative heat utilizers, the use of which saves the energy needed to heat the indoor air. Given the technological conditions

***Supervisor - Ph.D. VM Pryshlyak**