

# SU-76 & SU-76M

*Soviet Light Self-Propelled Artillery*

*1943-1953*

*Their History & How to Model Them*

# Agenda – What We Will Cover

- SU-76 and SU-76M
  - Development
  - Specifications
  - Production history
  - Deployment and operations
- How to model them
  - Where to start
  - Hints and tips

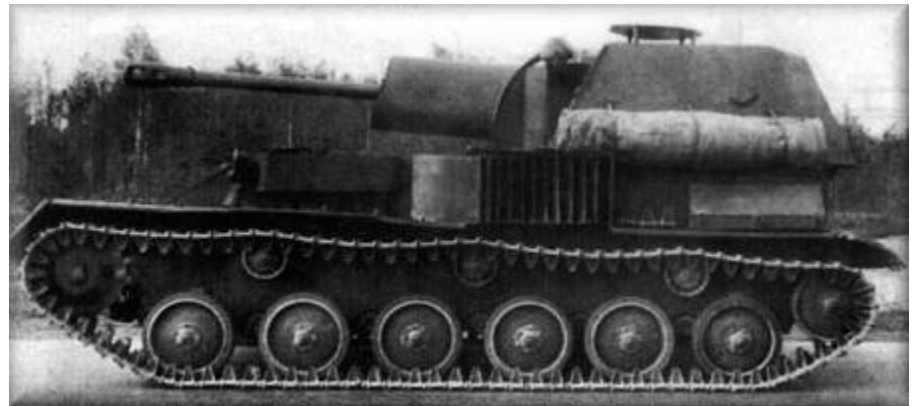
# SU-76 Development

- Initial proposal by People's Commissariat for the Tank Industry in March 1942
- Development work by Zavod #37, UZTM, Zavod #38 and GAZ
- First prototypes completed in June
- Comparative trials in November between Zavod #38 (SU-12) and GAZ (SU-71) designs
- GAZ design chosen for immediate production beginning in December
- First production vehicles delivered at the end of December by Zavod #38

# SU-76



# SU-76



# SU-76

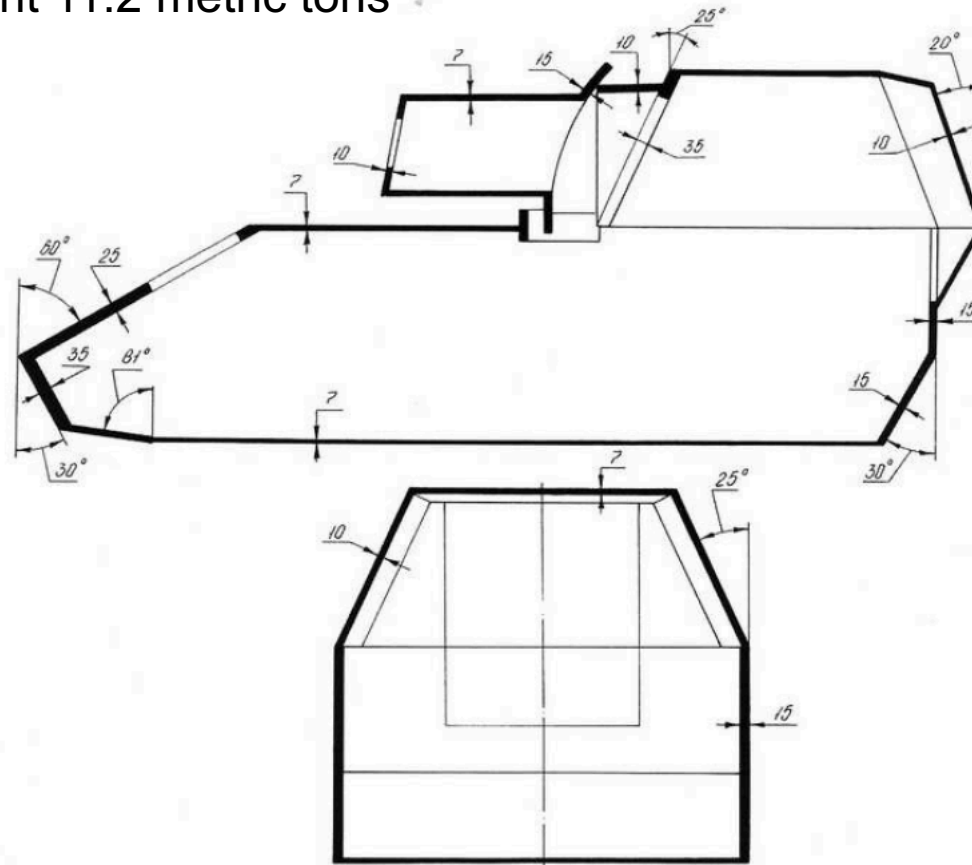


# SU-76 Armament

- 1 x 76.2mm ZIS-5 main armament
  - Maximum direct fire range 4000m
  - Maximum indirect fire range 9170m
  - Armor penetration 70mm at 500m range (BR-350A)
  - Armor penetration 90mm at 500m range (BR-354P)
- 2 x 7.62mm PPSH submachine guns
- 30 F-1 hand grenades
- 60 rounds for main armament
- 1050 rounds (15 drum magazines) for SMGs

# SU-76 Armor

- Six-sided, enclosed superstructure
- Combat weight 11.2 metric tons

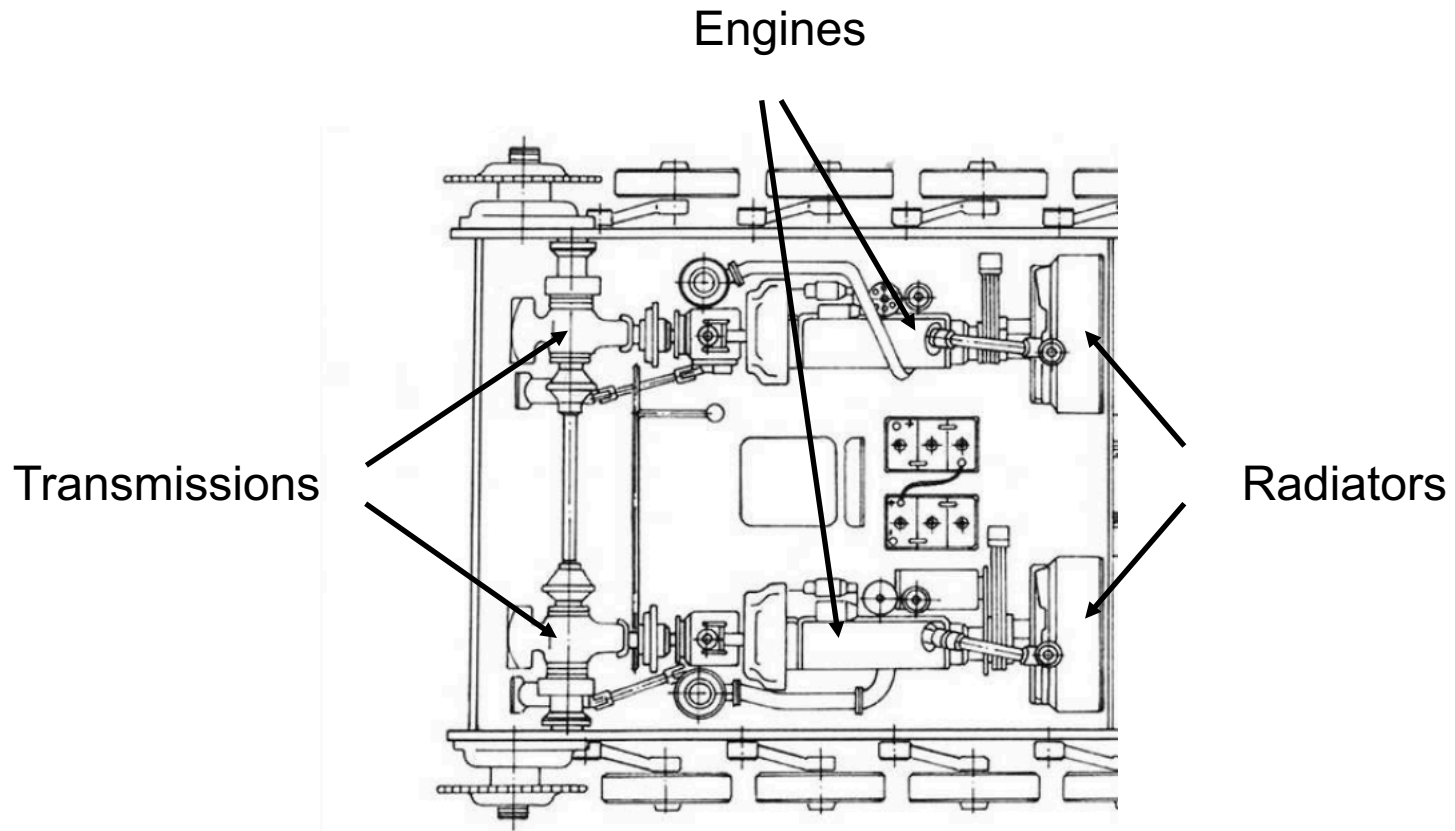




# SU-76 Power Plant

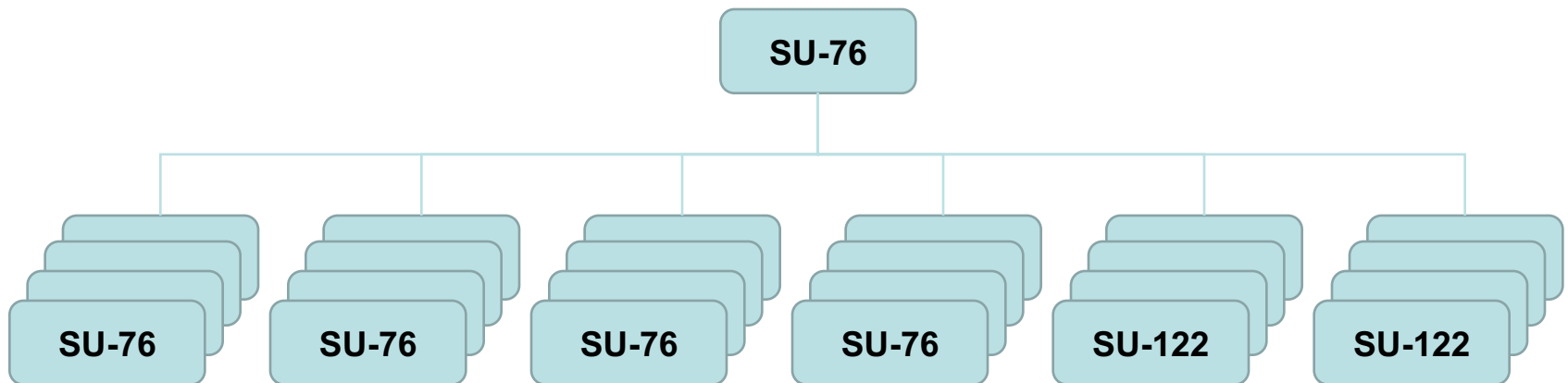
- 2 x GAZ-202 70hp gasoline engines
  - Front mounted, one engine on either side of the driver
  - Separate transmissions
  - Each engine powered one track
- 400 litres of fuel in two tanks
- Maximum road speed 44kph
- Maximum operational range 250km

# SU-76 Power Plant



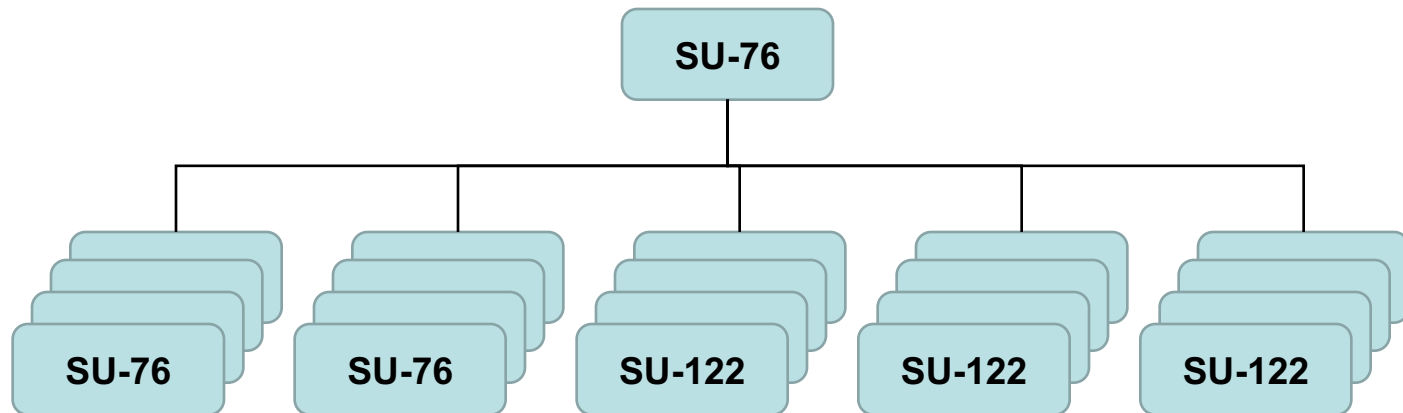
# SU-76 Deployment

- First operational deployment in January 1943
  - 1433<sup>rd</sup> and 1434<sup>th</sup> Self Propelled Artillery Regiments
  - Volkhov Front
- Organized under Specification 08/158



# SU-76 Deployment

- Reorganized under Specification 08/191 from February 1943



# SU-76 Problems

- Cramped working conditions
- Poor ventilation
- Mechanical reliability
  - Torsional oscillations and resonant vibration in the power train
  - Frequent transmission and drive shaft failures
- Production halted on 21<sup>st</sup> March 1943
- Stop-gap vehicle SU-76i
  - 76.2mm S-1 gun mounted on captured Pz.III hulls
  - 201 produced between March and November 1943

# SU-76i



## SU-76i Command Version (20 built)



# SU-76M Development

- Several interim measures
  - SU-12M may have seen limited production in April/May 1943
- Series production 'fix' accepted for production in May
- First SU-76M vehicles delivered at the end of May
- Manufactured at three factories:
  - Zavod #38 (1943 – 1944)
  - Zavod #40 (1943 – May 1945)
  - GAZ (1943 – November 1945)



# SU-76M



# SU-76M



# SU-76M Armament

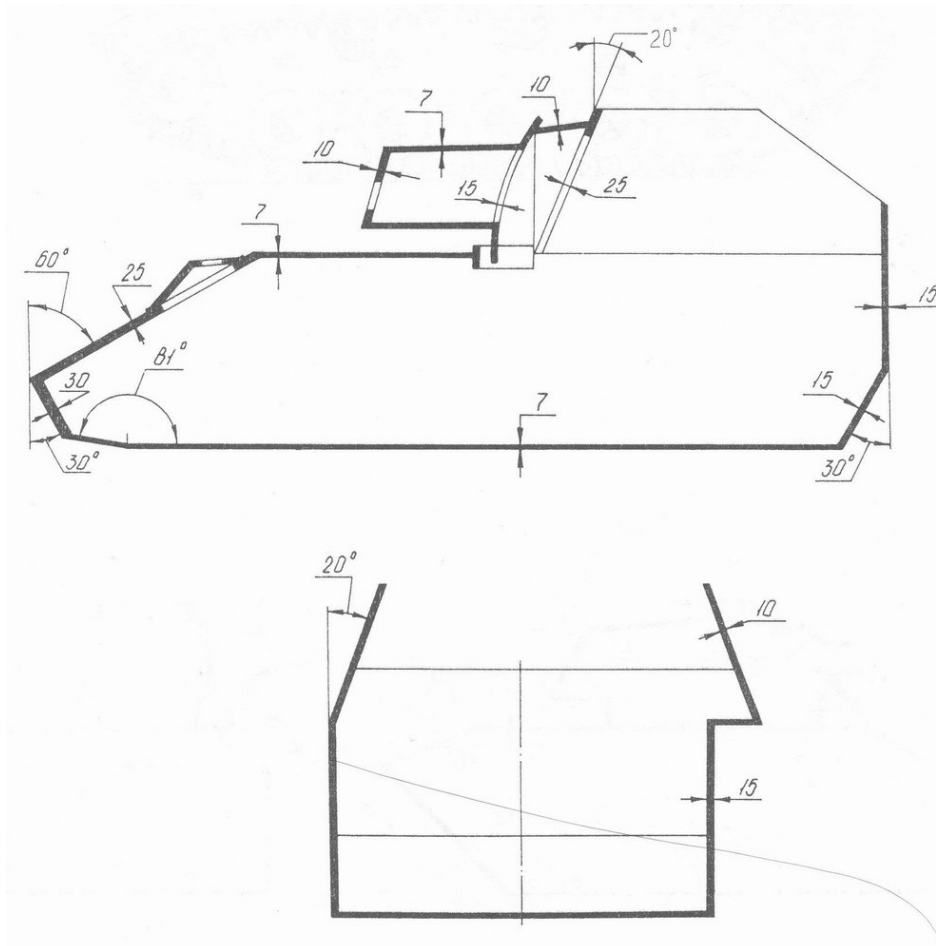
- 1 x 76.2mm ZIS-5 main armament
  - Maximum direct fire range 4000m
  - Maximum indirect fire range 9170m
  - Armor penetration 70mm at 500m range (BR-350A)
  - Armor penetration 90mm at 500m range (BR-354P)
- Initially 2 x 7.62mm PPSH submachine guns (1943/44)
- Later 1 x 7.62mm PPSH and 1 x 7.62mm DT machine gun (early 1945)
- 30 F-1 hand grenades
- 60 rounds for main armament
- 420 rounds (6 drum magazines) for SMG
- 945 rounds (15 drum magazines) for DT MG

# SU-76M Armament



# SU-76M Armor

- Four-sided, open-topped superstructure
- Combat weight 10.5 metric tons



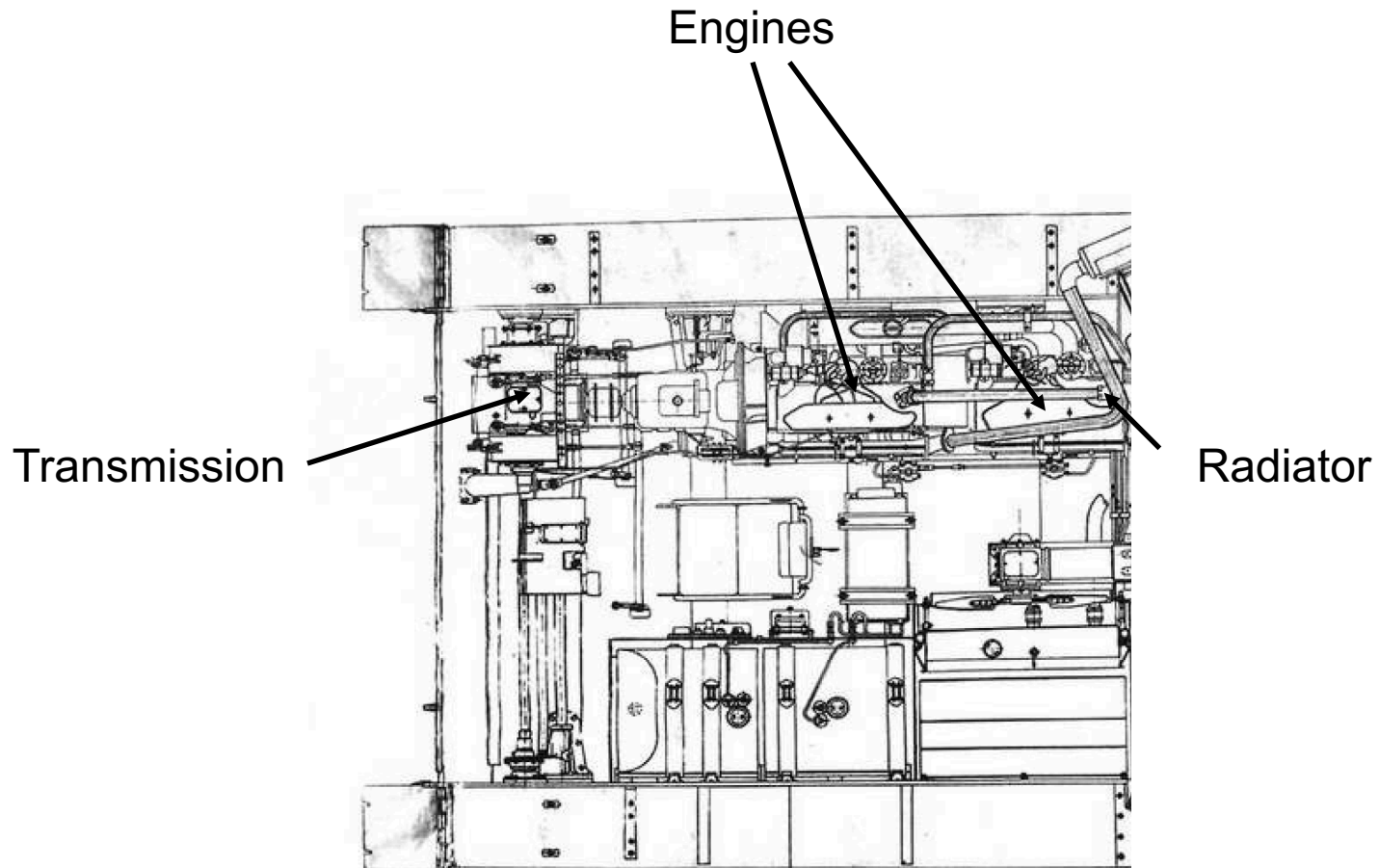
# SU-76M



# SU-76M Power Plant

- 2 x GAZ-203 70hp gasoline engines
  - Arranged in tandem on a common drive shaft
  - Front mounted to the right of the driver
  - Single transmission
- 412 litres of fuel in two tanks to the left of the driver
- Maximum road speed 30kph
- Maximum operational range 320km

# SU-76M Power Plant

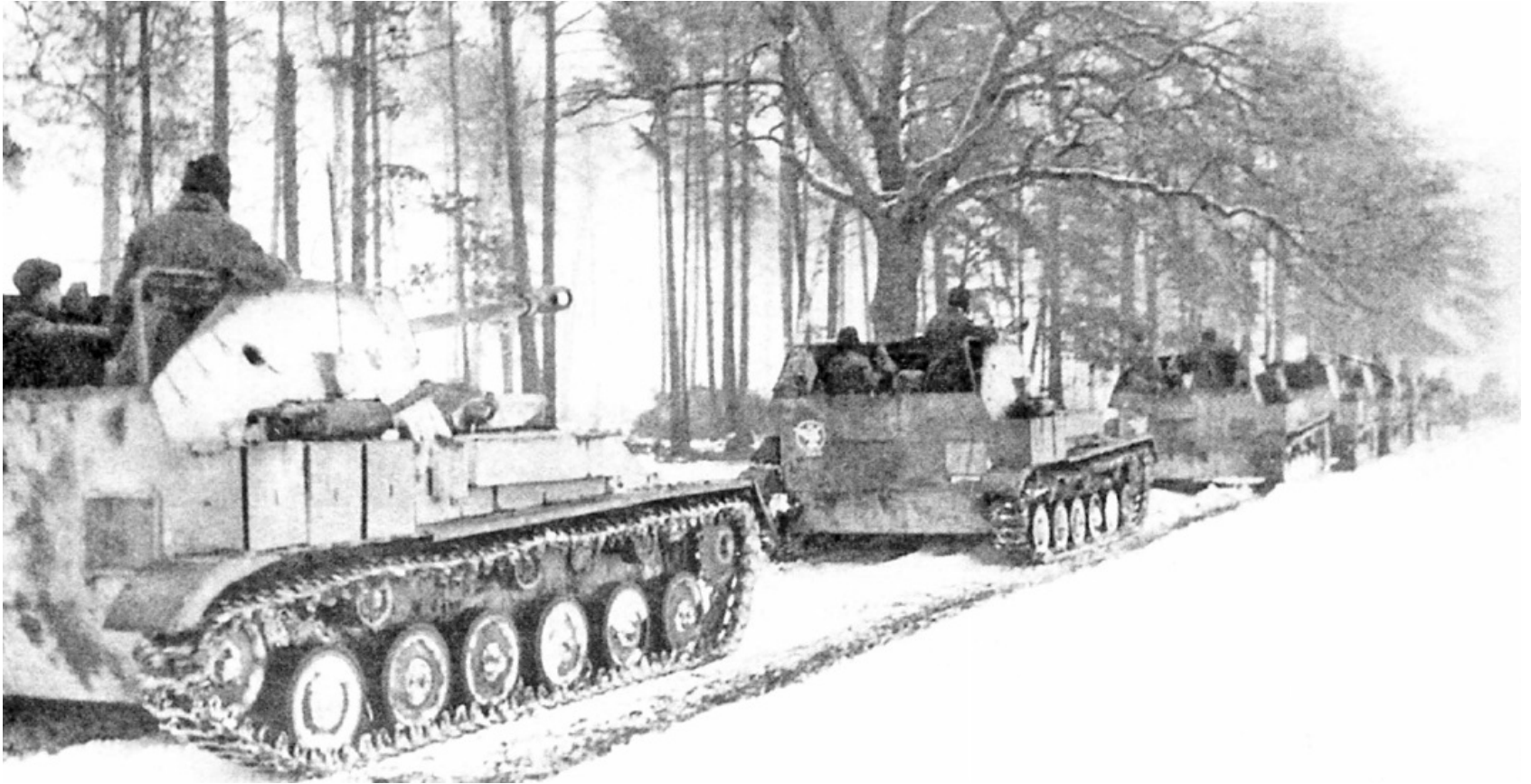




# SU-76M Power Plant



# SU-76M



# SU-76M



*Massimo Foti*

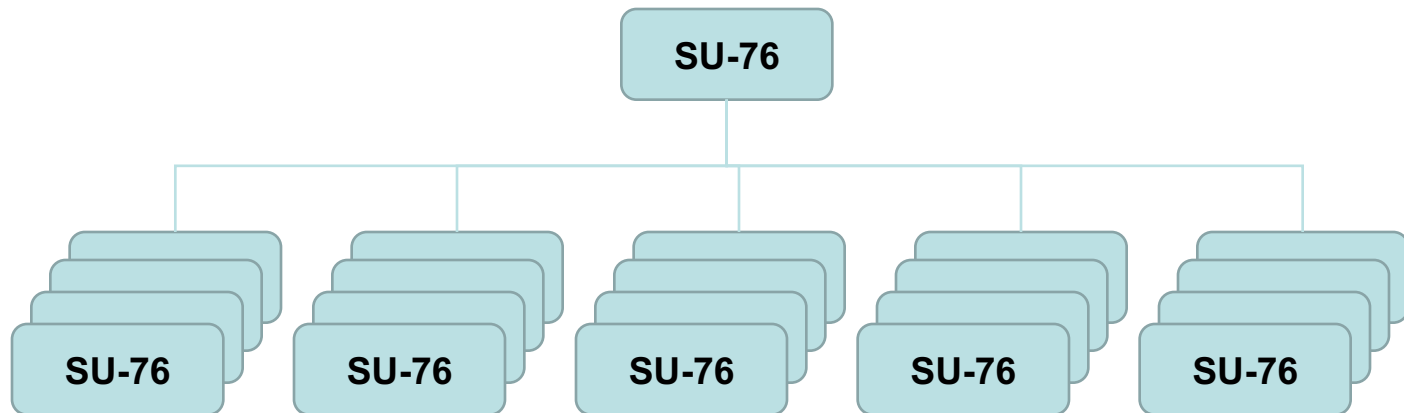
# SU-76M



*Massimo Foti*

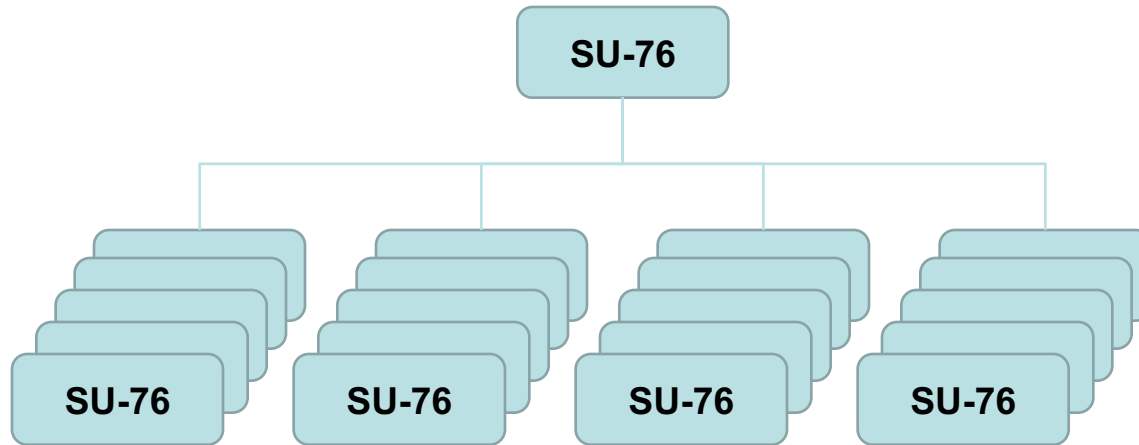
# SU-76M Deployment

- First operational deployment in July 1943
  - Various units and fronts around Kursk
- Light Self-Propelled Artillery Regiments organized under Specification 010/456



# SU-76M Deployment

- Reorganized under Specification 010/484 in November 1943



# SU-76M Deployment

- Over 200 Light Self-Propelled Artillery Regiments by mid-1944
  - Began to cause problems with command and control
- Light Self-Propelled Artillery Brigades began to be formed
  - Comprised of three regiments with 20 SU-76Ms each
  - 5 T-70 Light Tanks for brigade headquarters
- 140 Light Self-Propelled Artillery Regiments remained at the end of the war

# SU-76M Modifications

- Early 1945
  - Added DT MG and ammunition
  - Rearranged external stowage
  - Added transverse stanchion across upper rear superstructure
- Mid-1945
  - Extended superstructure sides and rear plate for additional protection
- 1950-1952
  - Updated GAZ-51 power plant (156hp) and electrical system



# SU-76M



*Bundesarchiv*

# SU-76M Mid-1945 Superstructure Modification



# Post-War Service

- Soviet forces in Manchuria
  - 952 vehicles served with three Fronts
- Poland
  - 130 vehicles remained in service until the 1950s
- North Korea
  - 75 vehicles saw service in the Korean War
- Other armies
  - Afghanistan
  - Albania
  - China
  - Cuba
  - North Vietnam
  - Romania

# SU-76M – Korean War



## SU-76 and SU-76M Production Summary

	1942	1943	1944	1945*	Post-War	Total
SU-76 Zavod #38	25	535				560
SU-76M Zavod #38		562	1103			1665
SU-76M Zavod #40		210	1344	752		2306
SU-76M GAZ		601	4708	2214	5204	12727
Total	25	1908	7155	2966	5204	17258

*\* To 1<sup>st</sup> June 1945*

# Modeling the SU-76 Series

in 1/35 Scale

# Available Kits

- SU-76
  - None
- SU-76i
  - DML
  - AEF Designs SU-76i conversion kit
  - Aires SU-76i conversion kit
  - Komplekt Zip SU-76i conversion kit
  - MR Modellbau SU-76 conversion kit
- SU-76M
  - Alan/Maquette/DML
  - Miniart
  - Tamiya

# SU-76

- Start with the Tamiya kit
- Break out the sheet styrene
- Backdate upper hull to SU-76 specifications
- Scratch-build superstructure



# SU-76i – Option 1

- Use the DML kit
  - Part of their Smart Kit range
  - Utilizes the hull and chassis from their Pz.Kpfw.III Ausf.J
- The kit
  - includes spare wheels for the rear fenders
  - does not include external fuel tanks
  - Includes the Pz.III fenders with holes for all the tools
    - These must be filled which is problematical due to the tread plate
    - Better to replace them with aftermarket fenders

## SU-76i – Option 2

- Start with a Pz.III Ausf.J or later
  - or use a StuG.III kit
- Conversion sets vary in content
  - AEF Designs includes superstructure, armament, tool boxes
  - Aires includes superstructure, armament, tool boxes and external fuel tanks
  - Komplekt Zip includes only superstructure and mantlet
  - MR Modellbau includes superstructure, armament, tool boxes and external fuel tanks
- Not all vehicles carried the external fuel tanks
- Not all vehicles carried spare wheels on the rear fenders

# SU-76M – Alan/Maquette/DML Kit

***NO!!!***

## SU-76M – Miniart Kit

- Represents a mix of 1943/44 and early 1945 production features
  - Transverse stanchion across upper rear superstructure
  - Two SMGs
  - 1944 external stowage
- Omit transverse stanchion for a 1943/44 example
- Add DT MG and update stowage for an early 1945 example
- Some fit and engineering problems
- Update sets from Royal Models and V Models
- Barrel from RB Models
- Tracks from various manufacturers

# SU-76M – Tamiya Kit

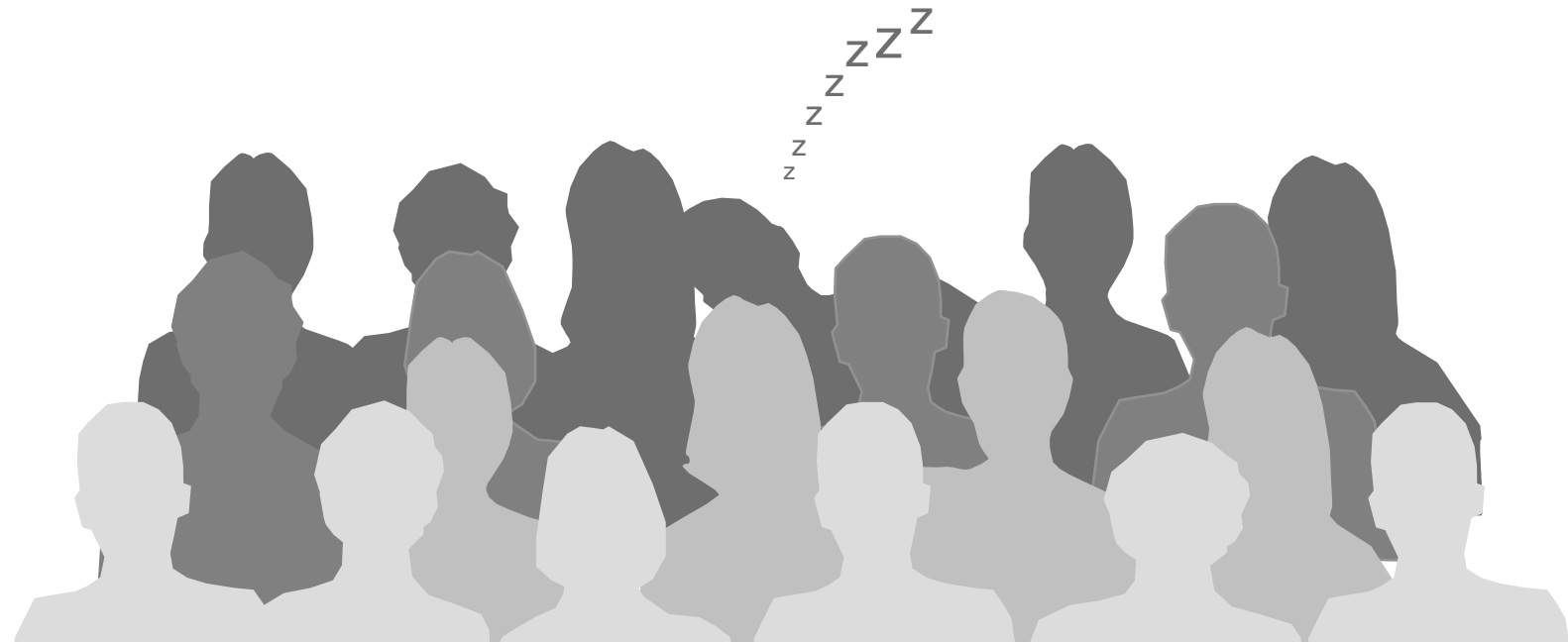
- Represents a mix of 1943/44 and early 1945 production features
  - Transverse stanchion across upper rear superstructure
  - Two SMGs
  - 1945 external stowage
- Omit transverse stanchion and backdate stowage for a 1943/44 example
- Add DT MG and for an early 1945 example
- Update sets from Royal Models and V Models
  - Intended for Miniart kit
- Barrel from Aber
- Tracks from various manufacturers

# Summary

- SU-76 series was the most prolific of Soviet wartime SPGs
- Served with RKKA and allied forces
- Served with numerous nations after the war
- Saw action in the Korean War
- Good kit of the SU-76i from DML
  - Several adequate resin conversions too
- Several good kits of the SU-76M
  - Miniart is adequate
  - Tamiya is excellent
  - Resin and etch sets available from Royal and V Models

# Shameless Plug Time





Questions?