

# THE SUPPLY OF ARTILLERY MUNITIONS 1914-1916



# Presentation Outline

**This presentation will discuss the following:**

- The factors limiting munitions and artillery production of Great Britain until early 1916.
- The impact of the expansion of the British Expeditionary Force (BEF) on munitions supply.

# Presentation Outline

- The failure of BEF administrative doctrine to keep pace with the demands of modern warfare.
- The near collapse of the re-supply system during the Battle of the Somme.
- The 1916-17 reforms of Sir Eric Geddes.
- Conclusions.

# Munitions Production

- Pre-1914 a common consensus that any future European war would be a brief one.
- Ammunition stocks sufficient to support seven divisions, fighting four major battles over two months.
- The Mowatte Committee and the failure to adjust stocking levels for Quick-firing artillery.

# BEF Expansion

- Limitations of munitions production exacerbated by BEF expansion as new divisions created demand for more artillery and munitions. The first of 30 New Army divisions arrive in France in May 1915.
- Expansion of the New Army took skilled workers away from the munitions industry. By the end of 1915, 16 per cent of workers in the metal industries had enlisted.

# BEF Administrative Doctrine

- By early 1916 enough munitions being produced to meet requirements. The munitions shortage shifts from one of production to that of distribution.
- Root of the problem resides in the 1909 *Field Service Regulations Part II*. This doctrine splits command and administrative functions from each other.

# BEF Administrative Doctrine

- Within BEF HQ the General Staff (GS) Branch commands the tactical battle while the Quartermaster General's Branch (QMG) manages the logistics. There is no doctrinal requirement for the GS Branch to consult with the QMG Branch over the planning or conduct of a battle.
- This simplistic approach suitable for colonial wars, but not industrial war.

# BEF Administrative Doctrine

- Position of Inspector-General of Communications (IGC) introduced in 1914 to control and coordinate the increasingly complex logistic traffic between the rear rail heads and the forward units.
- Command responsibilities between the IGC and the QMG (who is on the Haig's staff and has responsibilities for logistics) are never clarified.



# BEF Administrative Doctrine

- A new system of divisional packs which 'pushes' munitions supplies forward based on pre-determined quantities is introduced. This is the only way to deal with the quantity of munitions now required.
- The Battle of Neuve Chapelle in March 1915 the IGC moves some 1,546 tons of munitions over the course of the battle **for the whole BEF**. By mid-1917, this amount of munitions expenditure would be undertaken by a single division

# Near Collapse

- In mid-June 1916 some 5-12 train loads of munitions were meeting BEF needs. By late June 1916, 40-90 munitions trains were required.
- Increases in heavy artillery munitions also causing issues. While one million 18 – pounder shells required 25 trains, one million 60-pounder shells required 70 trains.

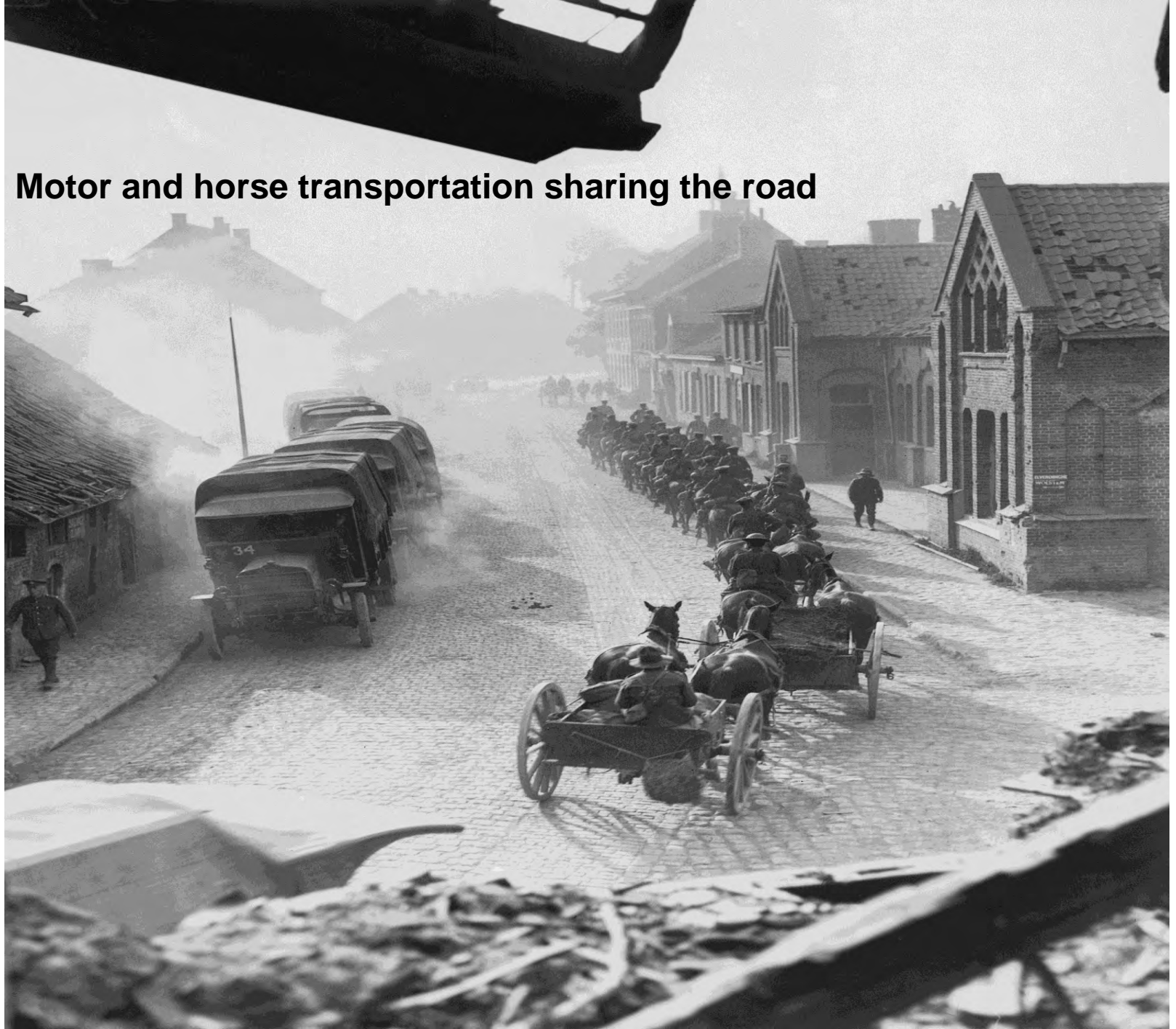


**A London-Brighton Railway Co. Engine used by the 5th Railway Coy, AIF**

# Near Collapse

- Movement of munitions from one train required 150 trucks.
- 90 munitions trains required 14,000 one-way, short distant, truck movements from the rail head to a dump or gun line.
- On 1 September 1916, in the British Fourth Army, 4,671 truck were required to carry 1,942 tons of stores, of which 1,038 tons were munitions.

**Motor and horse transportation sharing the road**



# Near Collapse

- The French rail system was over stressed by the BEF munitions demands placed on top of the divisional packs.
- There was a breakdown in the ability of the rail network to clear ports. Ships could not unload due to congested docks.
- Gradually movement between the docks and the rail heads congealed.



Mechanics of the 1st Australian Motor Transport Coy repairing a lorry.

# Near Collapse

- Despite significant increases in the number of soldiers/civilians employed to sustain the L of C, only 60 per cent of those tasked to support the L of C were actually doing so. The supply system continued to decay.
- Lack of munitions being delivered to the gun line having an impact on the Battle.



# The Impact of Shortages

- Munitions shortages retarded the development of artillery doctrine such as the creeping barrage and protective fire plans.
- Shortages of High Explosive shells constrained the effectiveness of artillery fire against German fortifications.

# The Geddes Reforms

- In an effort to rectify the administrative problems arising from the Somme, in September 1916 Sir Eric Geddes appointed as Director General of Military Railways under the QMG at the War Office, as well as Director General of Transportation in France. Given the rank of Major General and reports to Haig.

# The Geddes Reforms

- His appointment does not have the early support of the QMG or the IG, but Haig has a positive view of the appointment.
- Geddes aims to revise the BEF transport system which he breaks down into docks, railways, canals, light railways and roads.
- First priority is to take over the French rail network supporting the BEF.

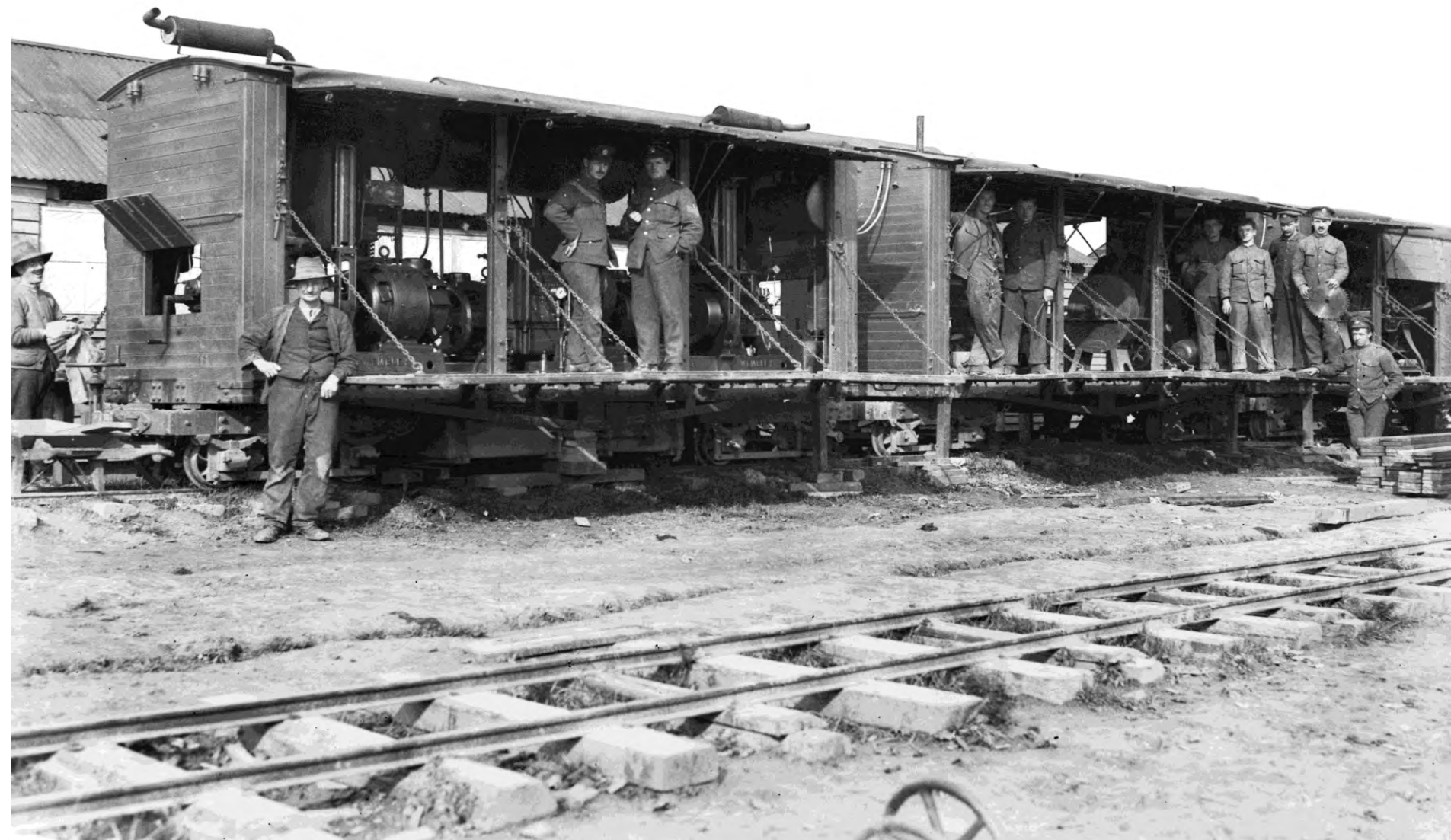
# The Geddes Reforms

- He orders some 1,200 miles of track, 7,000 wagons and 61 shunting engines. This hastens the growth of the BEF Railway Operating Division to manage the newly acquired lines.
- He significantly increases the use of light rail to carry munitions from the standard-gauge rail heads to the gun lines.

A black and white historical photograph showing a light engine, a small steam locomotive, in a devastated urban environment. The engine, with the number 1817 visible on its side, is positioned on a narrow-gauge railway track. The background is filled with the ruins of buildings, some with only skeletal remains left. Several tall, bare trees stand in the foreground and middle ground. The ground is uneven and covered with debris. The overall scene conveys the aftermath of a major conflict.

**An American designed light engine  
used by 17th Australian Light Railway Operating Coy**

## Light Railway repair train



# The Geddes Reforms

- Light rail relieves the pressures on truck and horse transportation, remains functional in all weathers and can carry heavy shells right to heavy batteries.
- Corps also control their own light rail networks.
- Transport rationalisation also complemented by reforms to BEF administration.

**A munitions train on the metre gauge railway on the Menin Road**





# The Geddes Reforms

- While *Field Service Regulations Part II* was not altered, there was now tacit recognition that one of the main functions of Army and Corps level staff in planning the battles of 1917 were the consideration of logistic matters, particularly the deployment of guns and the movement of munitions.

# The Benefits of Reform in 1917

- By 1917 the Geddes reforms had improved the BEF logistics system to such an extent that Haig was able to launch four major campaigns in one year.
- Such was the improvement in munitions supply that the artillery had a new problem with the supply of artillery tubes, since guns were wearing out from too much firing.

# Conclusions

- Great Britain entered the war ill-prepared for munitions production. Rapid expansion was hampered by lack of man power and industry capacity.
- By 1916 production shortages of guns and munitions largely overcome, but at the cost of quality.
- BEF munitions supply 'muddled through' 1914-15 with the IGC position.

# Conclusions

The administrative constraints of the *Field Service Regulations Part II*, when combined with the demands of the Somme campaign, bring munitions resupply in the BEF close to collapse.

- Geddes reforms modernize and centralize BEF logistics.

# Conclusions

- Geddes modernization:
  - restores strategic options to Haig,
  - removes constraints on the development of artillery doctrine, and
  - provides the basis for the BEF victories in 1918.

# QUESTIONS

