



Human Research and Engineering Directorate

# **MANPOWER AND PERSONNEL SUPPORT FOR THE C4ISR IN THE TRANSFORMED DIVISION**

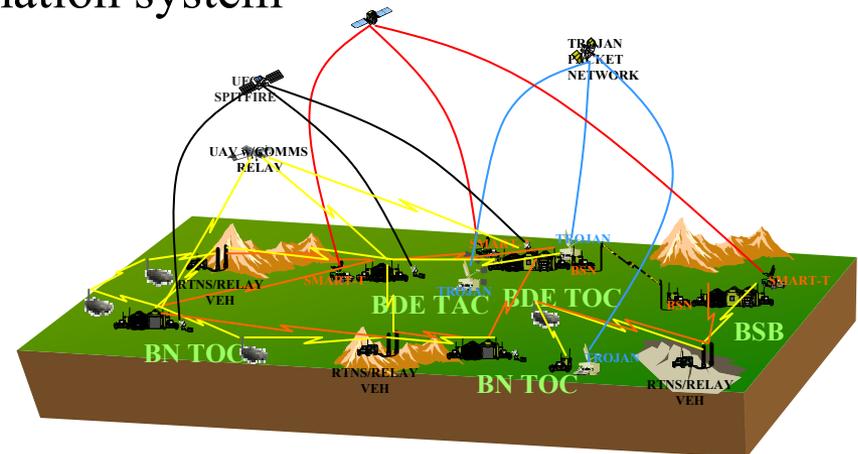
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# Army Transformation

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- US Army transforming warfighting capabilities
- Moving from brigade/division structure toward Unit of Action/Unit of Employment
- More strategically responsive
- At the same time C4ISR becoming increasingly electronic
- Increasing reliance of C4ISR information system
- C4ISR Concern
  - Can it be maintained?

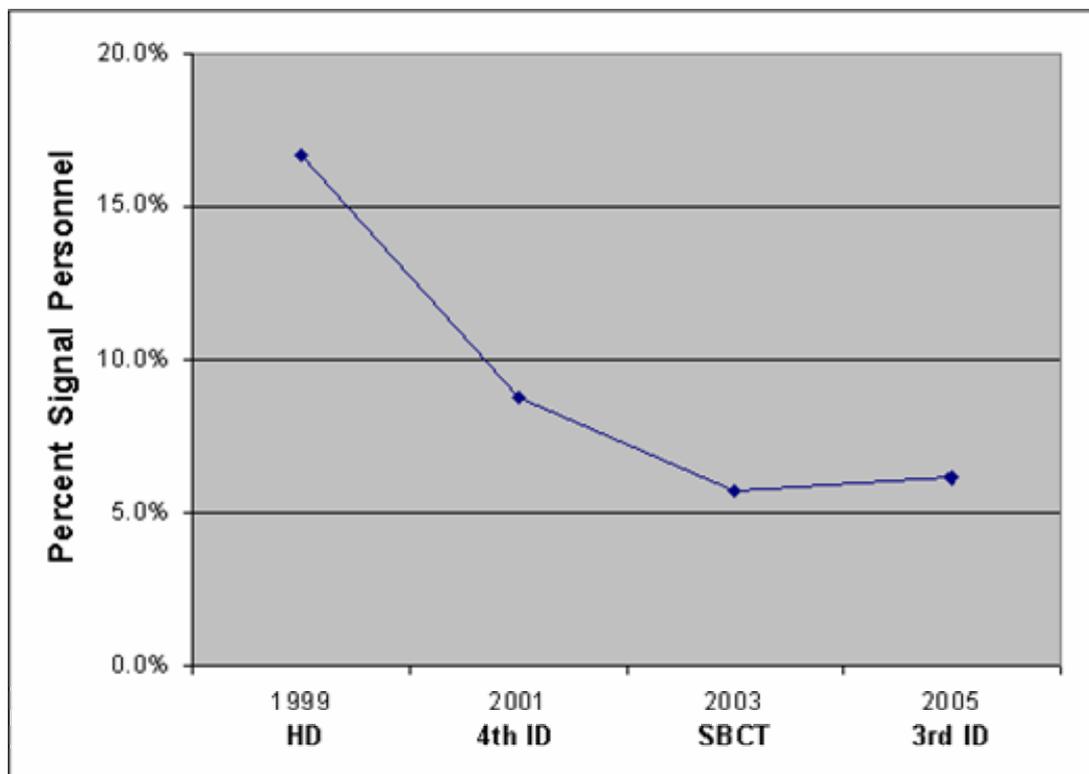




## Changing Signal Corps Personnel

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- Maintenance of the C4ISR falls to the signal corps personnel
- Reduction in the number of signal corps personnel 1988 to 1998
- From 61,000 to 37,000 signal soldiers
- Support requires increased skills
- Evaluate the signal corps personnel as the 3<sup>rd</sup> ID goes through its transformation





# Objectives of Evaluation

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- Evaluate problem of support to C4ISR for warfighting operations in new organization
- Evaluate the signal corps personnel as the 3<sup>rd</sup> ID goes through its transformation
  - Determine if numbers are sufficient to support C4ISR requirements for the transformed 3<sup>rd</sup> ID
  - Determine if MOSs are appropriate
  - Determine if organizational locations are appropriate



# Categories of Signal Personnel and Analyses

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		MOSs		ANALYSES		
		MOSs in Each Category	New MOS Designations* and New MOSs	Overall MTOE signal personnel comparison	SBCT/UA signal personnel comparison	Electronic equipment/repairer analysis
<b>CATEGORIES OF SIGNAL PERSONNEL</b>	Officers/WOs/NCOs	25A, 53A, 250N, 251A, 254A, 31W, 31Z, 74Z	25A, 53A, 250N, 251A, 254A, 948B, 25W, 25X, 25Y, 94W	X	X	
	Information Systems and Networking	74B	25B	X	X	
	Plans and Communications Security	74C	25D	X	X	
	Signal Support	31U	25U	X	X	
	Signal Communications Systems	31C, 31F, 31L, 31R, 31S	25F, 25L, 25P, 25Q, 25S	X	X	
	Communications and Electronics Repair	35E, 35F, 35J, 31F, 31P	94E, 94F	X	X	X

\* The new MOS designations are a result of the Army's realignment of MOS codes which for the MOS 31- and 74-series occurred as of FY 05 and for the MOS 35-series will occur in FY 06.



## Organizations for Comparison

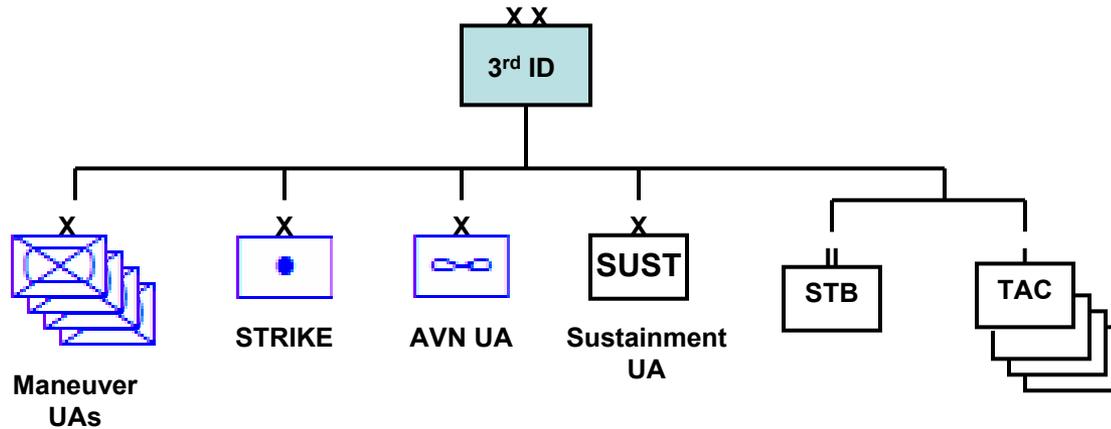
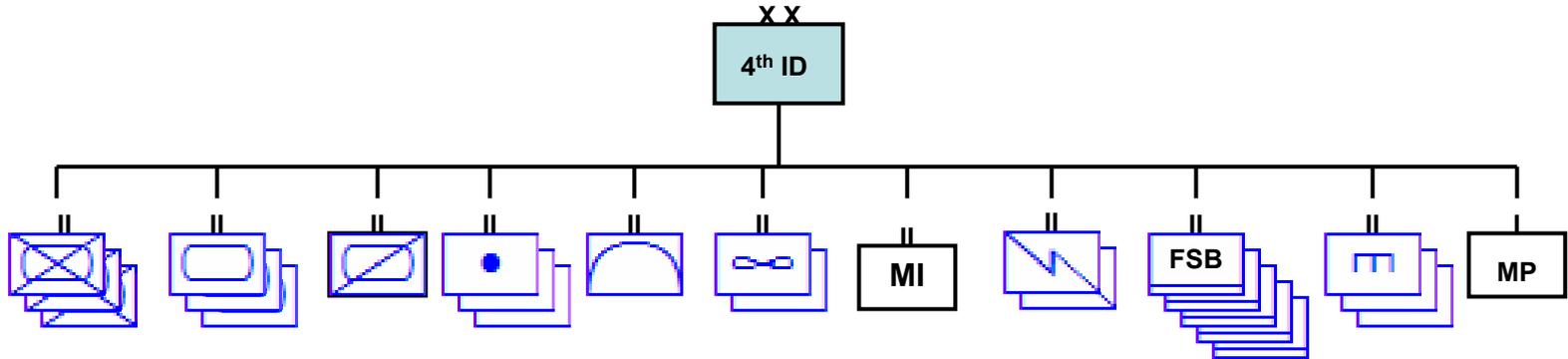
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- Comparison of MTOEs for 3<sup>rd</sup> ID, 4<sup>th</sup> ID, and Stryker Brigade
- 4<sup>th</sup> ID - Army's First Digitized Division
  - C4ISR electronic equipment
  - Older wire systems
- Stryker
  - Newer C4ISR electronic equipment
  - Brigade Combat Team (BCT)
- For comparison normalized personnel based on size of 3<sup>rd</sup> ID



# 3<sup>rd</sup> ID/4<sup>th</sup> ID Comparison

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# Normalization

- For comparison normalized personnel based on size of 3rd ID
- Predicted is 3<sup>rd</sup> ID level of support if staffed at the same level as 4<sup>th</sup> ID or Stryker Brigade

$$P = (T_{P3} - S_{P3}) / ((T_{PX} - S_{PX}) / S_{PX})$$

where P = predicted number of support personnel

$T_{P3}$  = total personnel 3<sup>rd</sup> ID

$S_{P3}$  = signal personnel 3<sup>rd</sup> ID

$T_{PX}$  = total personnel in comparison unit

$S_{PX}$  = signal personnel in comparison unit

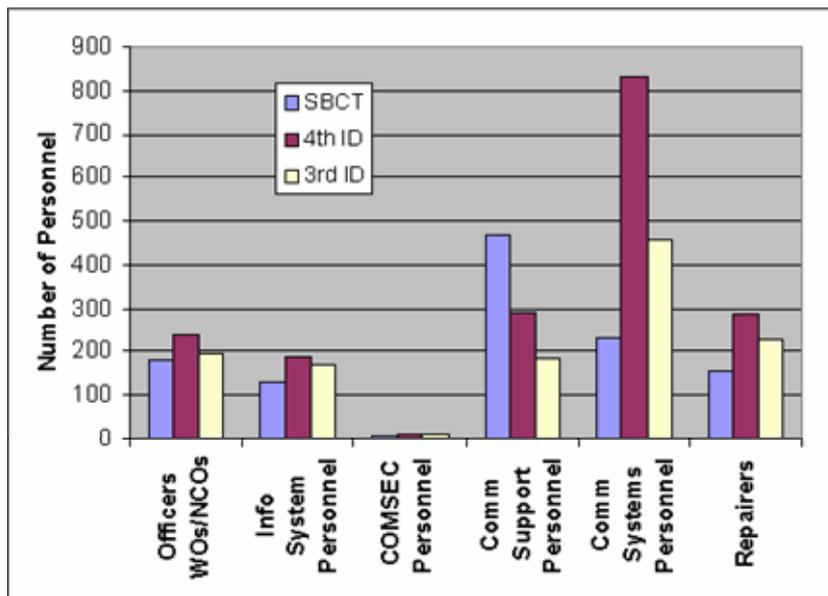
	Total Number of Personnel	Signal Personnel	Predicted No. Personnel to Support 3rd ID
<b>3rd ID</b>	20503	1254	1254
<b>4th ID</b>	13719	1203	1850
<b>SBCT</b>	3154	181	1172



## 4<sup>th</sup> ID to 3<sup>rd</sup> ID Comparison

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- Decreases in signal personnel in all categories except COMSEC Personnel compared to the 4<sup>th</sup> ID
- Significant drop in Communication System Personnel
- Reduction due to reduction in older wire systems being used for C4ISR



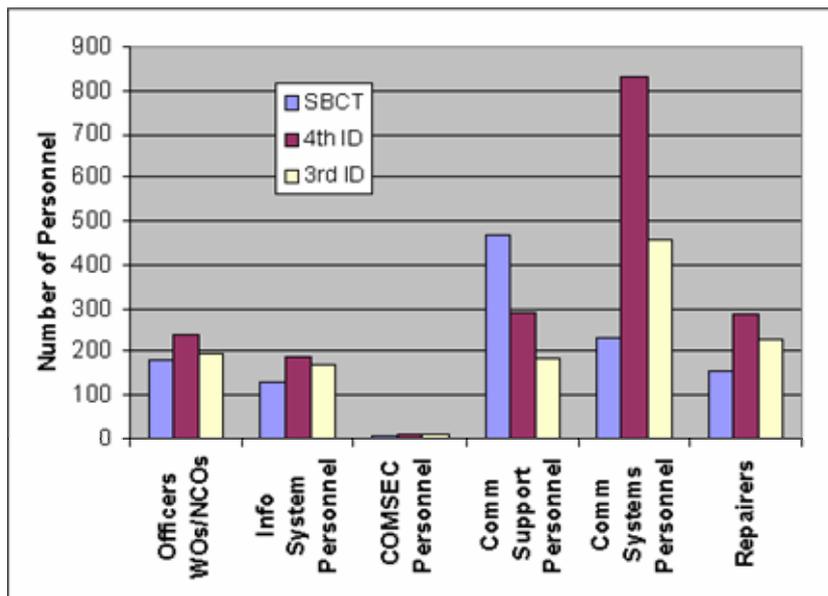
PERCENTAGE DIFFERENCES						
	Officers WOs/NCOs	Info System Personnel	COMSEC Personnel	Comm Support Personnel	Comm Systems Personnel	Repairers
<b>4ID</b>	-18%	-8%	6%	-37%	-45%	-21%



# Stryker to 3<sup>rd</sup> ID Comparison

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- Increases in all personnel types except Communication Support Personnel
- Significant decrease in Communication Support Personnel
- Decrease due to reduced reliance on retransmission services

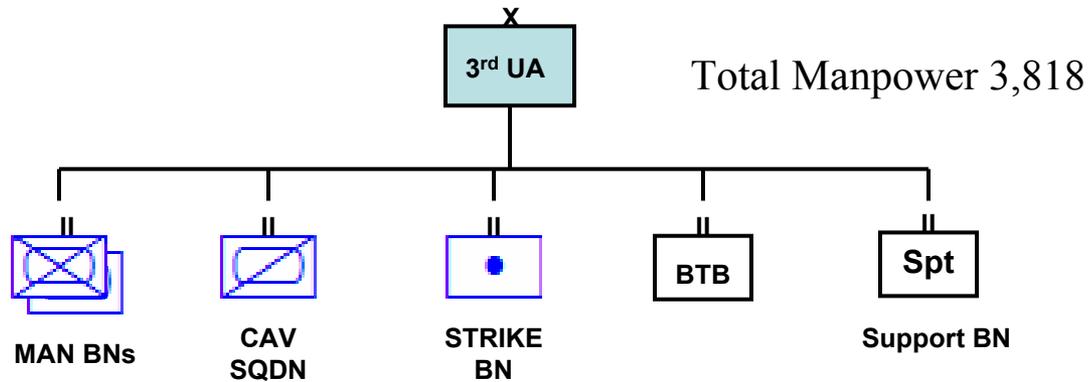
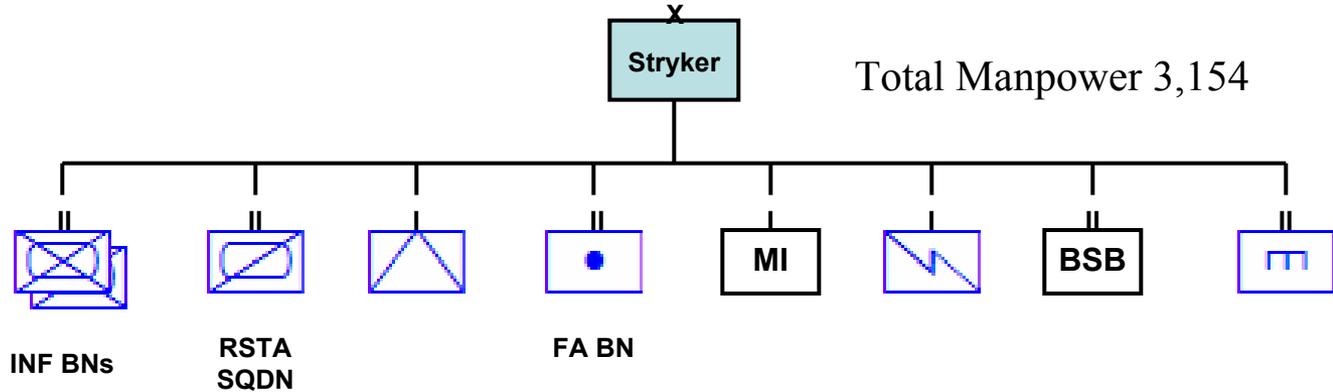


PERCENTAGE DIFFERENCES						
	Officers WOs/NCOs	Info System Personnel	COMSEC Personnel	Comm Support Personnel	Comm Systems Personnel	Repairers
<b>SBCT</b>	<b>10%</b>	<b>33%</b>	<b>101%</b>	<b>-61%</b>	<b>97%</b>	<b>45%</b>



# SBCT and 3<sup>rd</sup> ID Unit of Action Comparison

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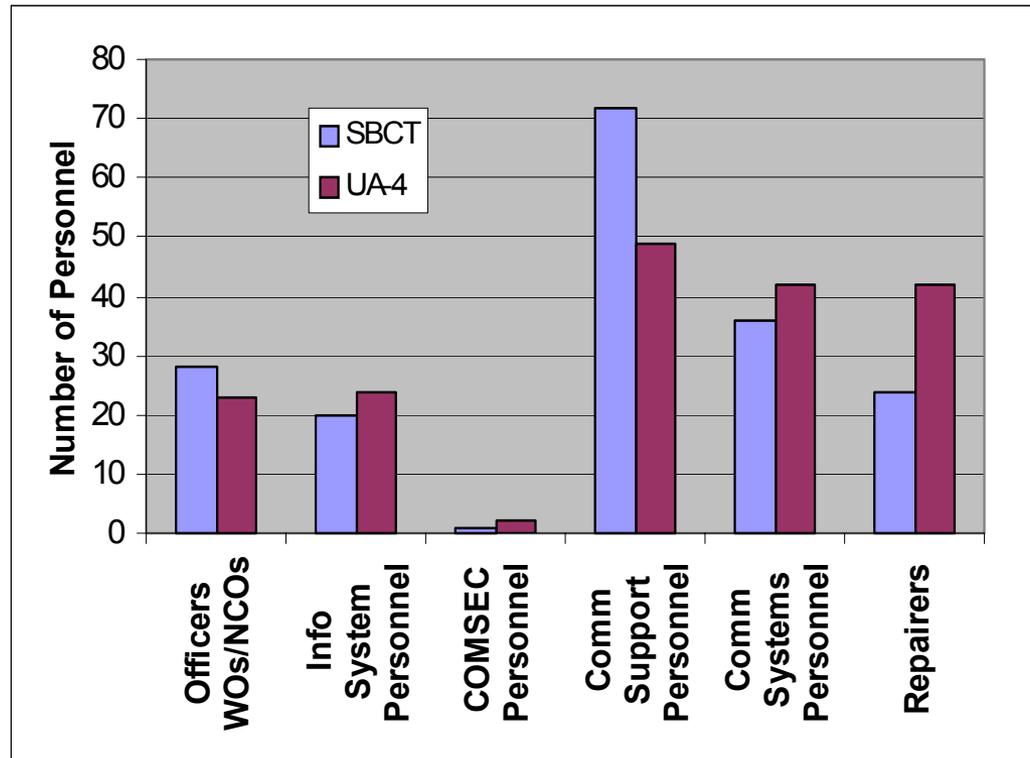




# Comparison of Signal Personnel by Types

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- Increases except for staff personnel and communications support personnel
- Significant decrease in Communication Support Personnel
- Significant increase in repairers





# Findings From Earlier Evaluation of SBCT

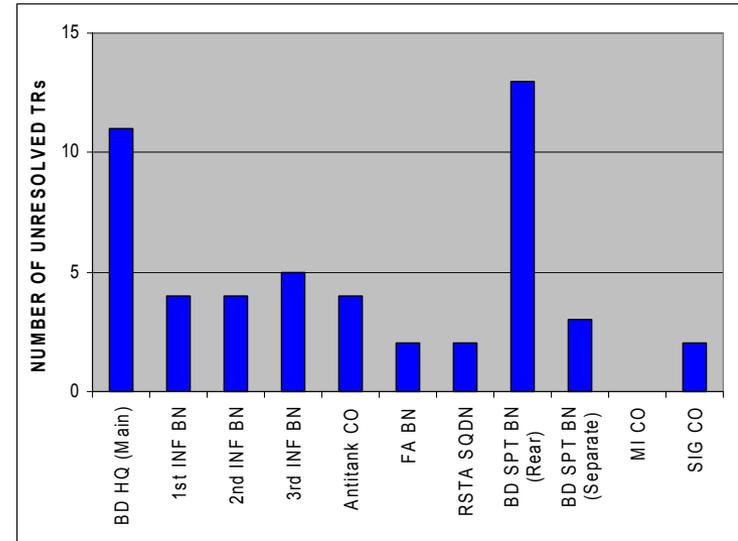
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- Analyzed Trouble Reports from an Stryker Brigade operational exercise
- Study showed need for additional information system personnel
- Need for additional repairers
- Need for additional COMSEC personnel
- Need for 31U in the Combat Repair Teams



# Distribution of Info Systems Personnel

- Trouble reports showed information systems personnel (74B) needed at specific locations:
  - Brigade Main
  - Brigade Rear



- Manpower levels for information system personnel increased in organizations that showed the greatest need
- Lost 1 each in maneuver battalions and field artillery battalion

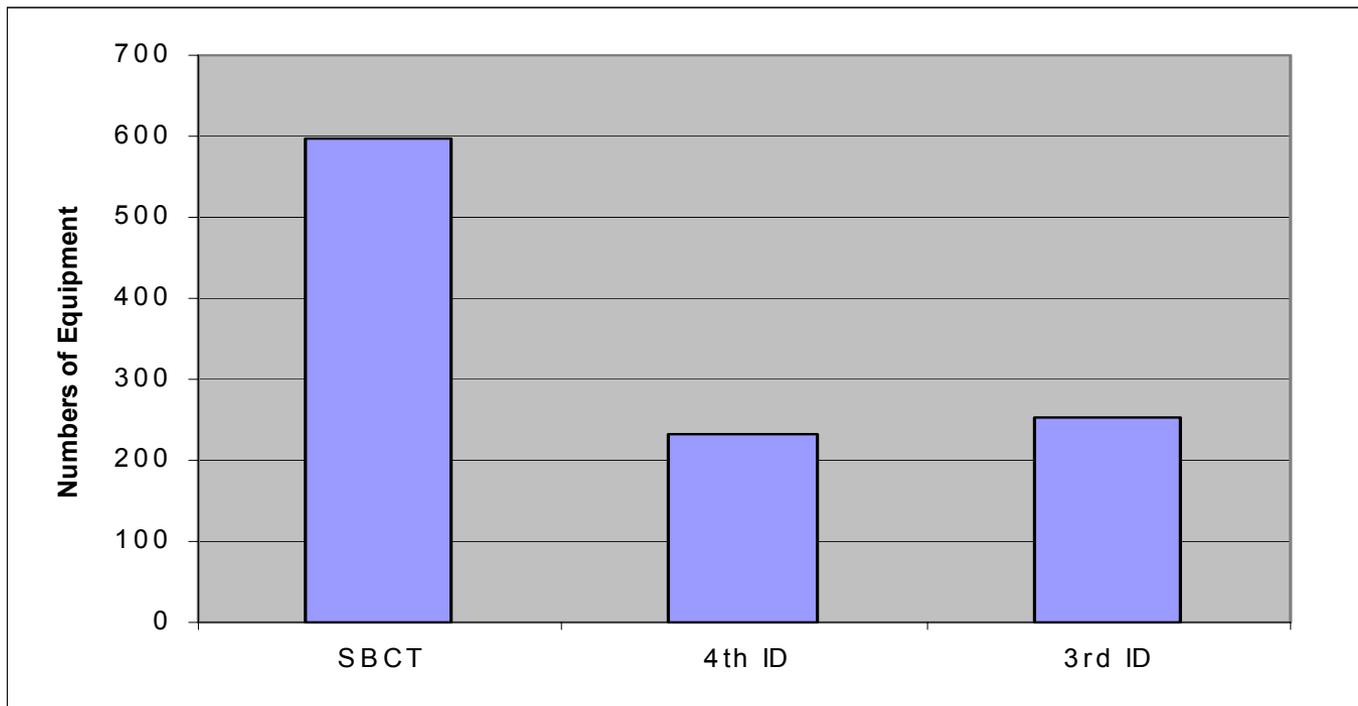
SBCT/UA Subunits	Info System Personnel	
	SBCT	UA
HQ (main)	0	4
Signal Co/BTB	6	7
RSTA/Cavalry SQDN	3	3
Maneuver BN	3	2
Maneuver BN	3	2
FA/Strike BN	3	2
BSB/Support BN (rear)	2	4



# C4ISR Equipment per Repairer

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- Repair personnel were increased in 3<sup>rd</sup> ID compared to SBCT levels
- C4ISR equipment per repairer used as measure of workload
- Comparison of equipment per repairer more in line with that of the 4<sup>th</sup> ID





## Additional Observations

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- Increased COMSEC personnel from 1 in the Stryker BCT to 2 in the 3<sup>rd</sup> ID BCT
  - Concern expressed in earlier evaluation confirmed by Stryker signal personnel in Iraq
- Identified issue of no 31U available to go forward in the Combat Repair Teams
  - 3<sup>rd</sup> ID included 31U in Forward Repair Teams with the vehicle repairers



# Conclusions

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- Army has followed its plan to reduce the support tail
- In the process it has effectively reduced the number of signal personnel
- Placed 3<sup>rd</sup> ID signal personnel in strategic locations to support C4ISR
- Some remaining concerns
  - Reduction in Information Systems Personnel (74B) in the maneuver battalions
  - Reduction in Communication Support Personnel (31U)
- 3<sup>rd</sup> ID appears to have better support for C4ISR system