

THE ARMY TRAINING SYSTEM

No slide, but principal theme is to talk about the Army's Training System, not just TRADOC's.

Going to talk about:

- The importance of individual training throughout the Army, the real Army, that Army that is, not what most of us believe it is.
- The proper sharing of responsibility for individual training among TRADOC and field commands.



DIVISION FORCES

DIVISION	224,000
BDE/REGT (SEPARATE)	26,000
SUPPORT	190,000
	<hr/>
	440,000

55 % OF THE ARMY

- Most of the Army is in the division forces. We have a very complex Army. Requires heavy support and much equipment.
- Within active component, as shown above, here is the real fighting force. National Guard and much of USAR is also in division forces.

SELECTED SYSTEMS

	<u>IIQ</u>
WHEELED VEHICLES	195,349
ARTILLERY & MORTARS	4,202
TRACKED VEHICLES	19,217
HELICOPTERS	6,337
AIR DEFENSE	8,063
ANTI-TANK	7,172
RADIOS	64,604
GENERATORS	40,167

- It is a highly mechanized Army with an abundance of equipment. Image of Army = soldiers with rifles is outdated.
- IIQ = Initial Issue Quantity for active Army division forces only. This doesn't include floats or added supply stockage. This is best estimate of what is actually in the hands of the troops, for which they must be trained.

EQUIPMENT DENSITY

6 WHEELED VEHICLE PER 24 PEOPLE
1 ARTY/MRTR TUBE PER 105 PEOPLE
1 TRACK PER 23 PEOPLE
1 HELICOPTER PER 70 PEOPLE
1 AD LAUNCHER PER 54 PEOPLE
1 ANTI-TANK SYSTEM PER 61 PEOPLE
1 RADIO PER 7 PEOPLE
1 GENERATOR PER 11 PEOPLE

- Now, divide this equipment among the 440,000 soldiers of the active division forces and this is the result:
- One helicopter per 70 people doesn't mean 1 chopper per 70 aviation types; that's 1 chopper per 70 soldiers in our active divisional forces.
- Few soldiers per piece of equipment, lots of equipment = need for much training to operate and maintain.

OR---

.78 SYSTEMS PER MAN

(NOT INCLUDING SMALL ARMS)

- Totaling up all the systems, from helicopters to tanks to generators, there are .78 systems per man in our divisional active forces.
- That is a very highly weapons intensive or mechanized Army.
- This is a different Army from what most people believe, both inside and outside the Army. We are not an Army of foot soldiers walking down a dusty trail--we are much more mechanized than that.
- In fact, our Army is almost as equipment or capital oriented as the Navy or the Air Force. We just haven't realized what we have done to ourselves.

NEW WEAPONS SYSTEMS (DIVISION)

INFANTRY	ARMOR	AVIATION
MICV W/WHINMASTER (TBAT) SAW ITV THERMAL SIGHTS IMP 81mm MORTAR	XMI M80A3 ITV MICV SCOUT(CAV) THERMAL SIGHTS	COBRA/TOW SCOUT W/TADS ASH AAH W/HELLFIRE UTTAS
FIELD ARTILLERY		
TPQ - 37 TPQ - 38 CLGP W/GLLD TACFIRE & BTRY COMPUTER	IMPROVED RANGE: 155mm - M109A1E1/X M - 198 8" - M110A1 MUNITIONS: SCAT MINES ICM - AT GSRS	

- While the numbers of weapons systems are great, complexity of these systems are also significant--and growing.
- More systems are being developed. Some will not just replace an older piece of equipment. Many are new concepts which simply increases the equipment per man ratio.
- But the systems are also more complex and sophisticated. This will also tend to increase the tooth to tail ratio even more.
- These are the weapon systems in various stages of the developmental process.

NEW WEAPONS SYSTEMS (DIVISION)

ENGINEER

SLUFAE
SLUMINE
CEV
UET
GEMSS
FAMECE

SIGNAL / C & C

SINGGARS
TOS
TRI-TAC

RSTA/EW

RPV
SOTAS
REMBASS
MODATS
MAGIIC
TACJAM
MULTEWS
ETC.

AIR DEFENSE

STINGER
ROLAND
AD GUN
SAM-D (PATRIOT)
TSQ-73

USAF SYSTEMS

PGM
EW SYSTEMS

- More new weapon systems within a division.
- The same would be true if we looked at systems other than just weapons.
- So the future will only increase the .78 system per soldier ratio and the future holds more complexity for each system.

DISMOUNTING FOR COMBAT

1976

USAREUR TOTAL DIVISION FORCES - 170,000	
• (20 MECH BN'S: 8804 DISMOUNTING)	- 4.0%
US DIVISIONS	
• MECH DIVISION (6 MECH BN'S)*	- 8.6%
• ARMORED DIVISION (5 MECH BN'S)*	- 7.4%
SOVIET DIVISIONS	
• MOTORIZED RIFLE DIV** (9 RIFLE BN'S)	-16.0%
• TANK DIVISION** (3 RIFLE BN'S)	- 6.5%

*ASSUMES 27 PER PLT DISMOUNTING
**ASSUMES 24 PER PLT DISMOUNTING

- From the forces within a division, whether USAREUR or FORSCOM, a very small percentage dismount for combat. The rest are tied to major items of equipment--the APC, the TOW on the APC, artillery tubes, trucks, etc.
- Our Russian friends aren't much better off.
- Trend is, in fact, to develop material which substitutes for manpower on the line of contact.

ANTITANK SYSTEMS

1956 - 4TH INF DIV - 251 ANTITANK SYSTEMS

9 M41 TANK	81 57MM RR
105 M48 TANK	56 106MM RR

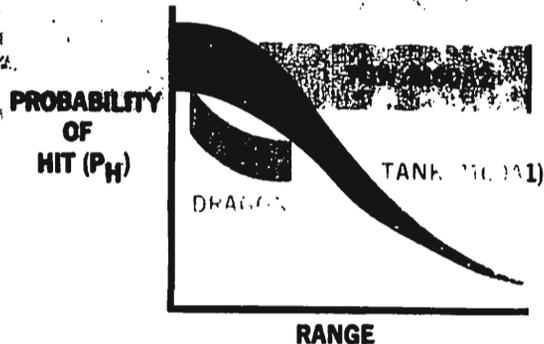
1977 - 3RD ARMOR DIV - 766 ANTITANK SYSTEMS

218 M60A1 TANK	134 TOW
108 M60A2 TANK	246 DRAGON
54 M551 SHERIDAN	8 90MM RR

*TRANSITION COMPLETE - 4TH QTR FY 77

- As we look at particular systems, we also discover large increases in numbers and effectiveness.
- The 4th Div in 1956 defended the same zone as the 3d AD today, but the 3d AD has:
 - three times as many anti-tank systems,
 - of ten times (at least) greater effectiveness.

PERFORMANCE GAP "HIGH PERFORMANCE"
CREWS vs. "LOW PERFORMANCE" CREWS



- Our Army-wide evaluations have shown performance gaps between what some of our key weapons are capable of versus the actual performance of our crews.
- This slide shows performance gaps in probability of hit at peak proficiency versus other times--the difference, for instance, between just completed tank gunnery season and three months later. Graphs would look like this for time to reload, time to fire, and other individual or crew skills.
- We "played" these levels of proficiency in one of our best force-on-force computer games.

2 "HIGH PERFORMANCE" CO
TEAMS DESTROY:

1

"EXTRA" TANK CO

- By varying only levels of proficiency in the model (one force consisting of two company teams) the final outcome changed significantly.
- At high levels of proficiency, the US force destroyed one extra tank company above what they had destroyed at lower levels of proficiency.
- Which means--Individual Skills Do Make A Difference.
- These skills were only reduced to levels that we have found actually existing in many of our active units.

**2 "HIGH PERFORMANCE" CO
TEAMS KILLED 32% MORE
TANKS AND BMP'S**

**CONSERVED 15% MORE
U.S. TANKS/TOWS/DRAGONS**

Well-trained soldiers kill more, survive better.

**"HIGH PERFORMANCE" CORPS
DESTROYS:**

6

"EXTRA" TANK BN'S

- Now projecting this performance to the corps level--a well-trained corps of two divisions knocked out six additional tank battalions as compared to a poorly trained corps.
- US Army needs this kind of advantage. But how to train to build it?

ENVIRONMENT

- Army training must contend with a tough environment.
- We are a heavily mechanized Army loaded with equipment. How our soldiers use those systems on the battlefield makes a difference, and that underscores the importance of individual training.

TURBULENCE

1 RESERVIST IN 3

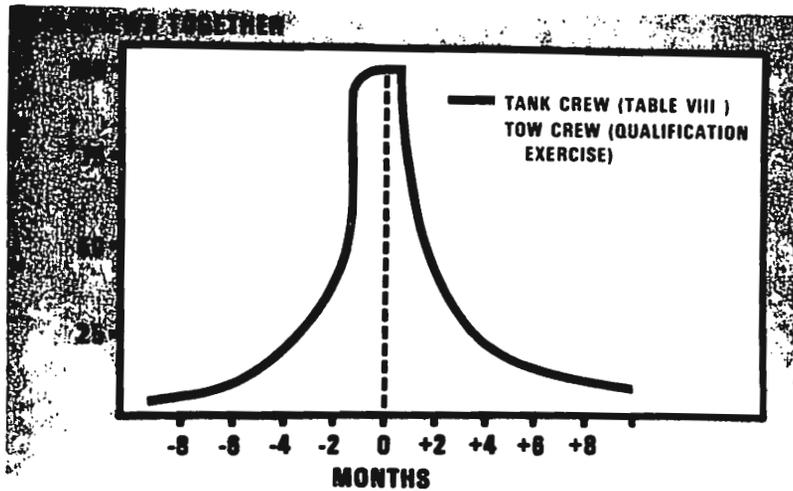
IS NOT

MOS QUALIFIED

ACTIVE ARMY ?

- Turbulence--certainly a factor in reserves with a 25% turnover every year and 25,000 men getting a new MOS each year. Units being redesignated or restructured contribute to this figure.
- Regardless of how it happens, it is a fact of our environment.
- Re active Army, LTG Shoemaker recently estimated that 25% of the soldiers at Ft Hood are serving outside their MOS.

CREW TURBULENCE



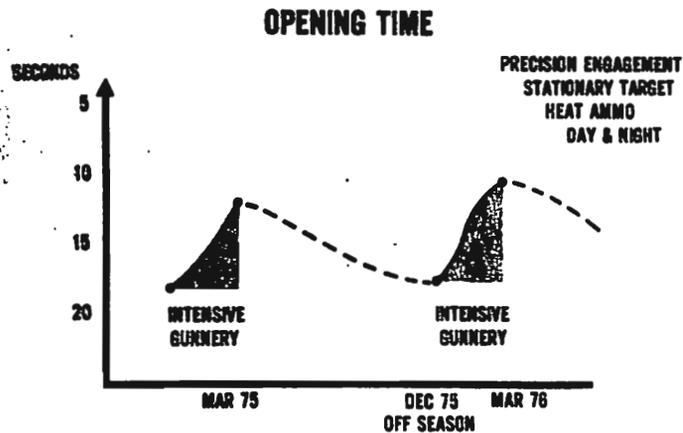
- These curves show that tank and TOW crews do not stay together very long after their qualification firing.
- It would be similar for any weapon system--air defense, artillery, etc.

JOB VARIETY IN MOS

63B SKILL LEVEL 1		13B SKILL LEVEL 1	
JOB	EQUIP	JOB	EQUIP
<ul style="list-style-type: none"> • WHEEL VEH MECH. 	<ul style="list-style-type: none"> • 161 DIFFERENT MAKES & MODELS 	<ul style="list-style-type: none"> • CANNON CRMAN • AMMO HANDLER • ASST GUNNER • DRIVER 	<ul style="list-style-type: none"> • 105 SP • 105 TOWED • 155 SP • 155 TOWED • 175 SP • 8" SP
			

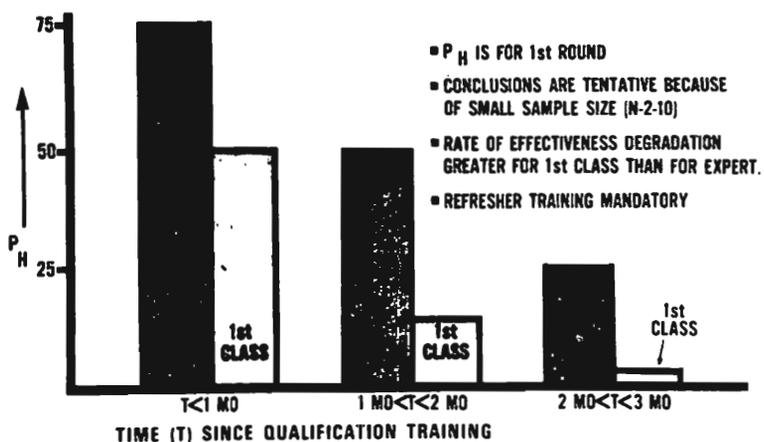
- Another fact of life in our Army. A wheeled vehicle mechanic cannot be expected to be proficient on all 161 different vehicles; but they exist, so he or she may be faced with any one of them.
- There is tremendous difference between the job of cannon crewman on a 105 towed and a 175 SP. Yet, the training base cannot forecast which weapon the 13B will be assigned to.
- Infantry is worse. And the job mix problem exists for most MOSs.

TANK GUNNERY PERFORMANCE



- Loss of skills over time. Not surprising but it is a factor training managers must contend with. Not true for all skills, but acquiring targets, judging speeds, how to prepare weapons for firing, etc., are skills which improve with practice or for which there are forgetting curves with almost same slope as the learning curves.

DRAGON OT III EFFECTIVENESS DEGRADATION OVER TIME



- The forgetting curve is a fact on most systems, even those we thought we had engineered to avoid it.
- Probability of hit for the DRAGON degraded sharply in just a couple of months by actual test.
- Better gunners don't fall off quite as fast, but their sharpness, too, diminishes rapidly.

CURRENT STATE OF PROFICIENCY

(MINIMUM STANDARDS)

<u>BRANCH</u>	<u>PROFICIENCY</u>
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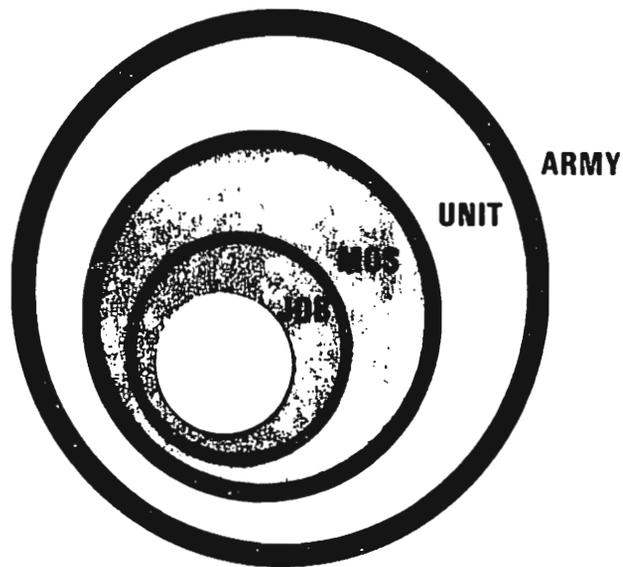
INFANTRY.....	54%
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ARMOR.....	33%
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AIR DEFENSE.....	37%
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(FROM SQT VALIDATION RESULTS)

- All the previous facts of our environment contribute to this.
- Proficiency is increasing on subsequent SQT--as it should.
- As we train to standards, results will show.



- This is a depiction of the soldier's world. The Army is vague and uncertain. What he knows is his job, his MOS, and his unit (primarily not higher than company).
- Training products must be aimed to address his environment--the center of circle, and how he interfaces with his job, his MOS and his unit.
- Unless we create satisfaction at the center of this small universe, we won't be able to recruit and retain an Army.

MY SURVEY INCLUDED FIRST TERM SOLDIERS NUMBERING 2,720 IN 32 STATES
MY QUESTION A VERY SIMPLE ONE "WHAT WOULD IT TAKE TO KEEP YOU IN YOUR
(USAR OR ARNG) UNIT?" THE ANSWER WAS CLEAR AND LOUD AT LEAST TO ME,
BECAUSE THEY SAID 32% "GIVE ME INTERESTING AND USEFUL WORK AND
TRAINING." 26% "IMPROVE THE TRAINING "

THE COMMITTEE ON PUBLIC RELATIONS OF THE NATIONAL GUARD ASSOCIATION
OF THE UNITED STATES IN MAY 1970 CONDUCTED A SIMILAR SURVEY AND ASKED THE
QUESTION - "IF YOU HAD THE POWER TO DO WHATEVER YOU WISHED TO DO TO
IMPROVE THE NATIONAL GUARD, WHAT ONE THING WOULD YOU DO?" 57% ANSWERED
THAT IMPROVED TRAINING, MORE TRAINING WITH UP TO DATE EQUIPMENT, AND
BETTER PERSONNEL UTILIZATION WOULD BE THEIR NUMBER ONE CHANGE

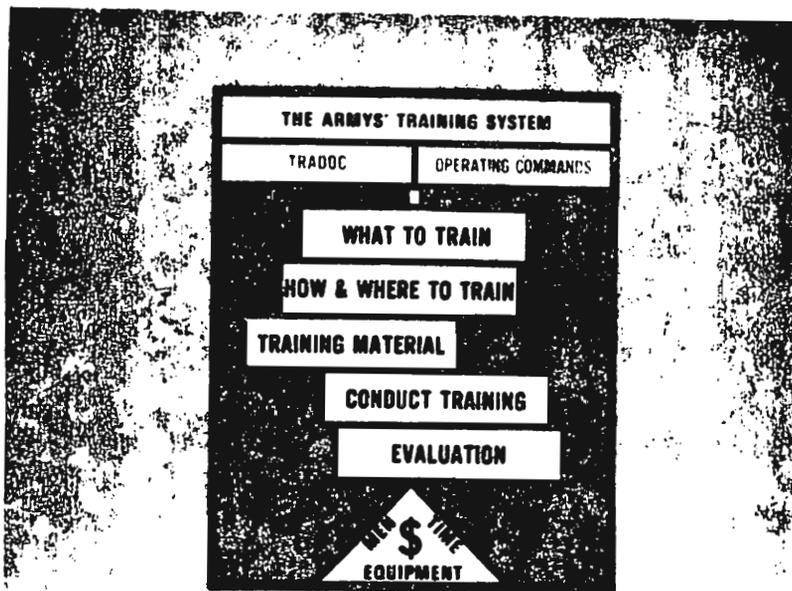
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- This survey addressed reserve recruiting and retention.
- The soldier, the center of that previous bull's-eye chart, wants challenging work and training.

"WHILE EACH SOLDIER HAS HIS OWN UNIQUE EXPERIENCES AND OPINIONS, THERE IS A CONSISTENT THREAD TO THEIR THINKING. FEATURES THEY LIKE: JOB SATISFACTION IS CRUCIAL: UNIT INTEGRITY IS ALSO PARAMOUNT, AND ATTITUDES ARE FAVORABLE WHEN MEN FEEL THEY HAVE A MISSION THEY CAN UNDERSTAND AND SUPPORT, WHEN THEY FEEL THEY ARE TREATED FAIRLY, AND WHEN THEY FEEL THAT THEIR UNIT IS COMPETENT."

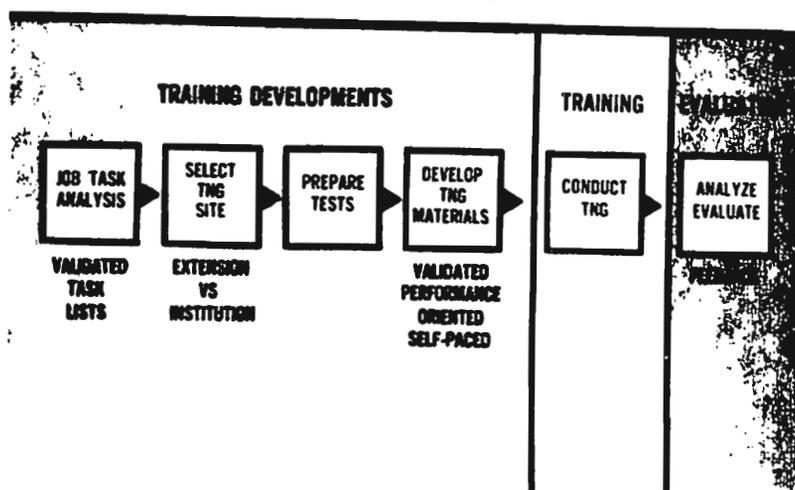
**N W AYER
JANUARY 1976**

- This is from a study for Recruiting Command by the N. W. Ayer firm on why soldiers reenlist.
- A good independent look at our Army by an outside agency.
- Job satisfaction is crucial. You can't have job satisfaction unless the soldier feels he is competent for his job and considers that his MOS proficiency is contributing to unit proficiency.



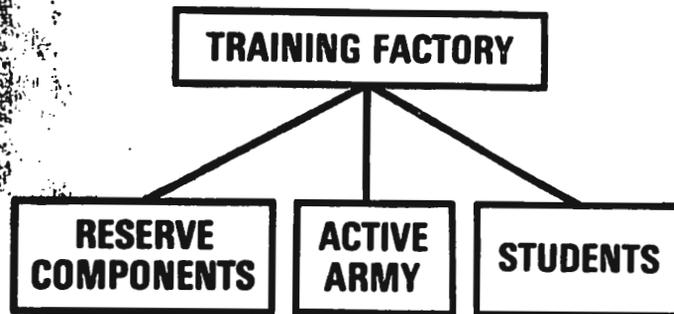
- One way of looking at Army training. There has to be a division of labor between TRADOC and other MACOM on every one of those blocks.
- Blocks are movable--we can shift burden on any one more to TRADOC or move toward operating commands. DA must insure balance of \$, manpower, and material, but system can change.
- As Board of Directors for Army, we have to decide what the balance should be, how to share the training burden. But before you make decision, understand how the decisions on what to train, how and where, etc., have been made to date.

SYSTEMS APPROACH TO TRAINING



- This is the model for development and conduct of individual and collective (units and crews) training systems. TRADOC follows this approach.
- The Training Developer begins by determining which tasks must be taught for each MOS and at each skill level throughout the life cycle of that MOS.
- Then the question is, where should the task be trained? That's an important question and the answer must consider the environment previously discussed-- turbulence, job variety in MOS, forgetting curves, etc.
- Prepare the test to evaluate those tasks.
- Develop training materials to support the training for those tasks and their evaluation.
- Then conduct the training, evaluate the results, and fine tune the system.
- It is a systematic and logical process.

THE TRAINING FACTORY

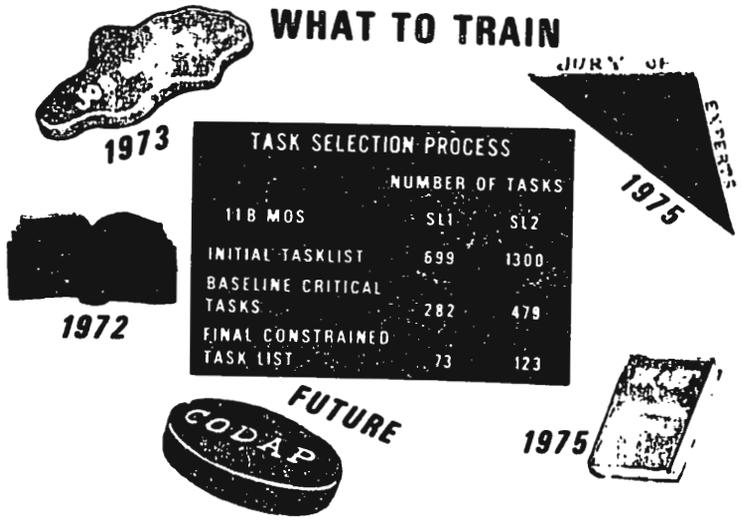


- For at least a year, this has been the orientation of the TRADOC schools. This is our way of looking at ourselves--as a training factory which has three equally important customers.
- Some of our products will be consumed down the hall to teach in the classroom, but a large percentage will be provided for the units because realistically that's where 90% of the training in the Army is conducted (both active Army and Reserve Components).

18

18

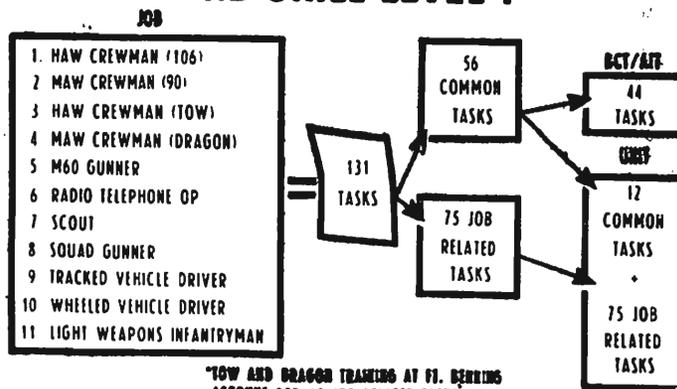
WHAT TO TRAIN



- Picking the critical tasks for each MOS to be trained in is not easy. This chart shows the Infantry School had a rough time narrowing the list down to those really critical tasks upon which combat proficiency rests.
- They can accomplish this analysis only in conjunction with the operating commands. As the 11B example depicts, USAIS first surveyed the units in 1973 and later sent out a draft Soldier's Manual for comment in 1975.
- We have learned much in this process. Through MILPERCEN the Army bought the Air Force's CODAP program (Comprehensive Occupational Data Analysis Program) which allows us to survey an Army-wide MOS to find out what they are doing, what supervisors say they are doing, and analyze the results by computer.

WHERE TO TRAIN

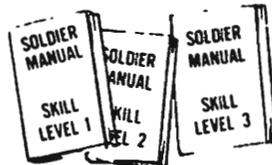
11B SKILL LEVEL 1



- This shows all the jobs or duties to which a Skill Level 1 infantryman could be assigned. In all these jobs, there are 131 critical tasks which are either common to any infantryman regardless of his job (56) or tasks only connected with specific duty positions (the 75 job related tasks). (Note: The previous slide listed 73 critical tasks. That equates to 56 common plus 17 for the scout position which is the highest number of tasks required of any one Skill Level 1 infantryman.)
- Using all those environmental factors previously discussed--forgetting curves, turbulence, job variety, resources, etc.--TRADOC trains 44 of these tasks. Hence, the units must train 87. Skill Level 1 is also where most of the tasks are for the entire MOS. For example, 53% of the entire 11B tasks up through E-7 grade level are found in Skill Level 1.
- The 11B example was illustrated because it is the worst case. For artillery (13B), of the 142 critical tasks in Skill Level 1, 58 tasks are taught in the institution and 84 tasks are taught in the unit. In many MOSSs, TRADOC trains a much higher percentage in Skill Level 1.
- This "Where To Train" decision must take place for every MOS at every skill level.

WHAT THE SOLDIER NEEDS TO KNOW

- **TASKS, CONDITIONS,
STANDARDS**
- **REFERENCES/SUPPORT**
- **ROADMAP TO
SUCCESS**



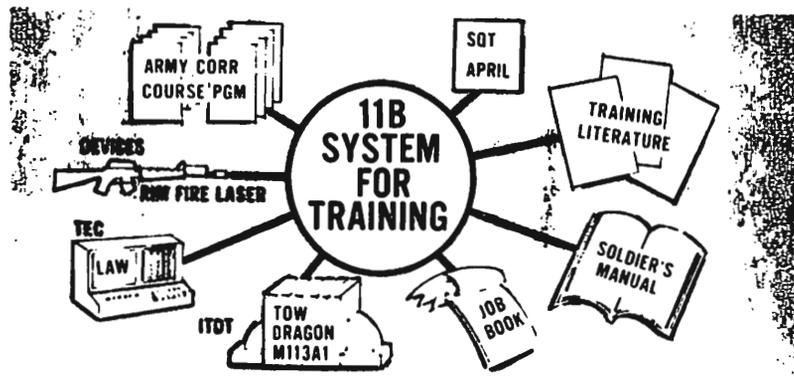
WHAT COMMANDER NEEDS TO KNOW

- **TASKS FOR MOS**
- **SUPPORT REQUIRED**
- **WHERE TAUGHT (SCH. VS UNIT)**



- There is a training plan, therefore, for every MOS. We publish this plan in two forms: to every soldier in his Soldier's Manual and to every company and battalion commander in a Commander's Manual.
- The Commander's Manual tells what tasks are to be trained, where the initial training in these tasks takes place, and what materials support the trainer. It specifies what unit must train--either as first time or refresher.
- SM and CM are blueprint for individual training in unit. They lay out the division of labor between TRADOC schools and units--in effect, they are a "contract" between us and the field.

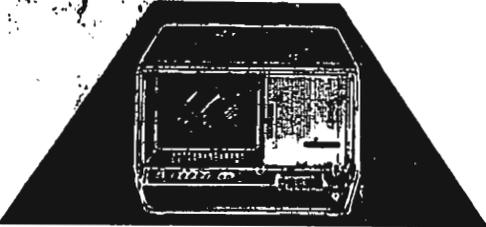
TRAINING MATERIAL



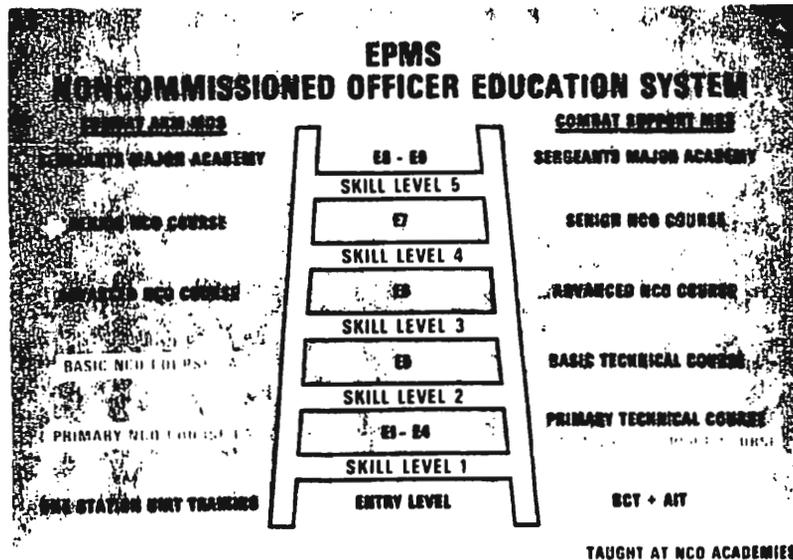
Training material is produced by TRADOC schools to train for mastery of every critical task.

TEC LESSONS VALIDATED

	<u>NO. LESSONS</u>	<u>NO. SOLDIERS</u>	<u>AVERAGE PRETEST</u>	<u>AVERAGE POST-TEST</u>
INFANTRY	87	2,059	35.41	67.89
FIELD ARTILLERY	711	2,805	41.48	69.15
AVIATION	183	1,807	45.24	69.65
ENGINEERS	130	3,157	40.88	62.76
COMBAT ENGINEERS	22	603	23.55	63.87
AVIATION	23	835	24.41	64.31



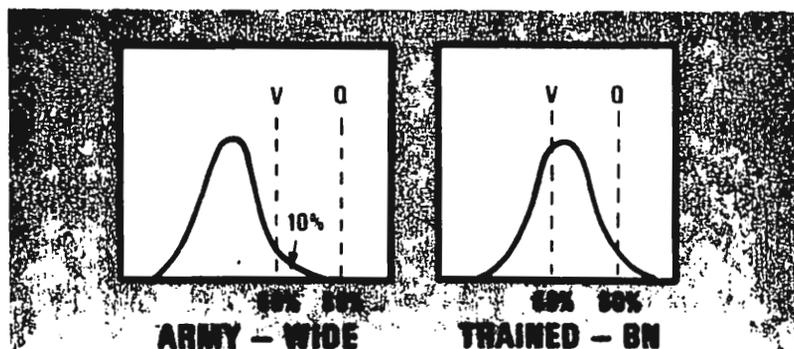
- This is an essential element of training support for various MOSs.
- Problem is the equipment is now available but individuals and units are not using it. It is an expensive program, and we may lose it if we don't use it. TEC works--given a chance.
- Each lesson is validated by the contractor with soldiers before we buy it. Here are some of those validation results.
- Note we are just beginning to get into the Combat Service Support lessons, which are greatly needed by both USAR and active force.



- NCOES is changing as EPMS advances.
- Three NCOES courses--highlighted--are designed for division NCOA.
 - BNCOC (Combat Arms) and PNCOC (CA) now underway using TRADOC curricula and instructor spaces.
 - PLC curriculum just tested in Europe and about to be furnished to rest of Army.
- NCOES must be a joint venture. If not, most NCOs will not get the training they need.
 - After 5 years of trying, CONARC and TRADOC had put only 10% NCO through BNCOC (mostly wrong men).
 - New BNCOC programmed for 3.7 X increase (2156 vs. 7961 per year).
 - With school at division, serving leaders can go.

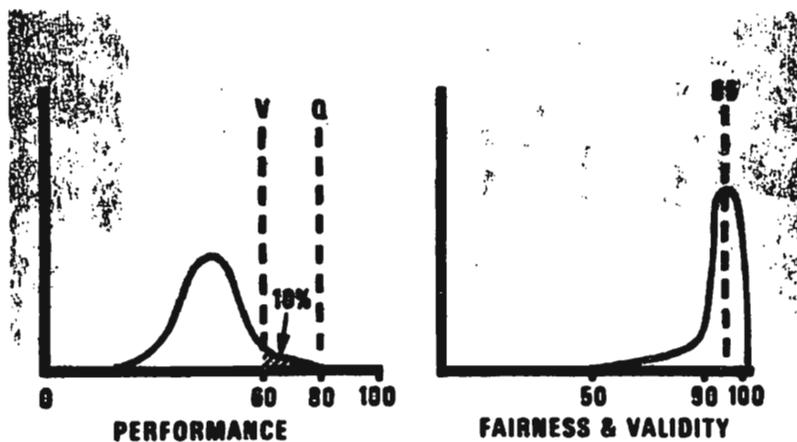
SQT RESULTS

(SMALL SAMPLE)



- Good NCOs can make a big difference. On left are general results of first SQT, reflecting untrained NCO. If they don't know, they cannot train subordinates.
- On right is one battalion where we observed standards we would like to see everywhere. Investigation showed this a battalion where:
 - SQT preparation decentralized to NCO.
 - TEC used widely both by NCO and men.
 - NCO knew their trade.
- Objective is to so use NCOES, SM, TEC, TC, etc., that the whole Army will verify (V) current skill level and substantial portion will qualify (Q) for higher skill level.

SQT VALIDATION RESULTS



- Same slide on left.
- But slide on right reflects soldiers' attitude about test. Even though test showed them they can't perform the tasks, they rate the test fair and valid.
- Important finding since system won't work if soldiers think the SQT is a poor test. They don't.

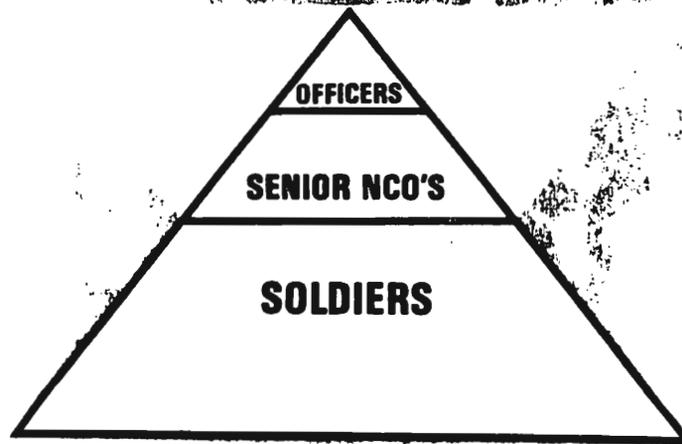
TEC/SQT RELATIONSHIP

TEC	SCORE	SQT SCORES
CD	HIGH	HIGH
BNC	LOW	HIGH
A	HIGH	HIGH
B	LOW	HIGH
C	LOW	LOW
D	LOW	LOW
E	HIGH	UNK
H	HIGH	HIGH

NOTE: HANDS-ON COMPONENT ONLY

- Here is still another unit where we found high SQT scores. This compares use of TEC with scores on the hands-on events. Unit is exceptional in that it has many fine NCOs and holds them responsible for individual training.
- Sergeants can make the system work.

ORGANIZATIONS

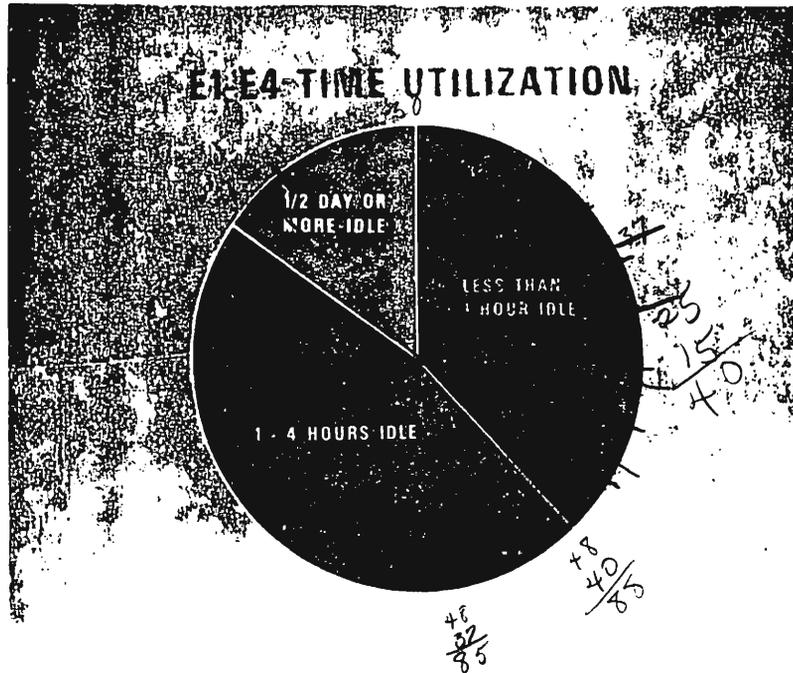


- Upright pyramid is depiction of an organization. Could be a platoon or a division or an Army.
- Upside down pyramid overlays activity profile in that organization.
- Lot of activity at higher levels (generals through captains are swamped but little useful work at the E-1 through E-4 or E-5 levels).
- Fairly typical description of most organizations in our Total Army today.

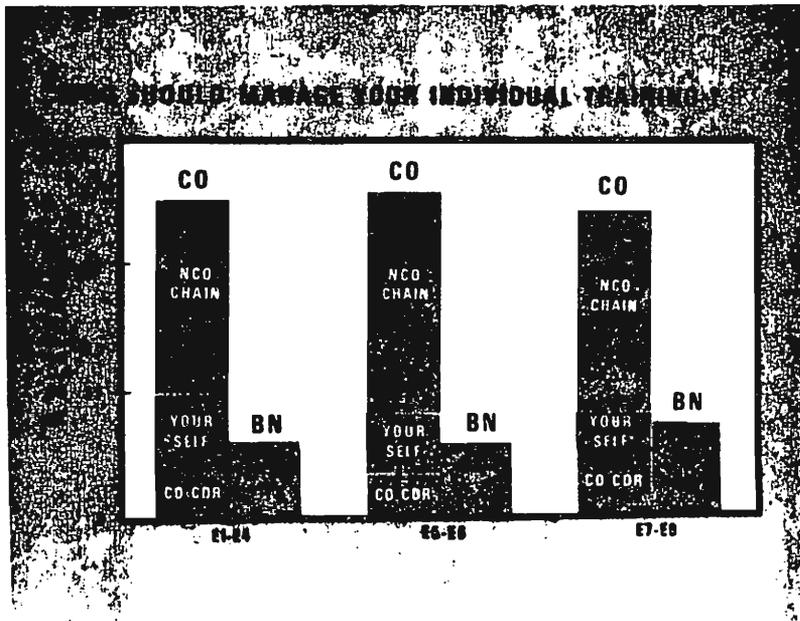
SYNOPSIS OF THE PACDA TRAINING MANAGEMENT SURVEY OCTOBER 1976

1. PERSONNEL STAFFS TO SOME DEGREE THROUGHOUT THE ARMY. THE LEVEL OF STAFFING INCREASES WITH A DECREASE IN RANK.
2. COMMANDERS PERCEIVE THEMSELVES AS BORN. HOWEVER, AS MUCH AS 50% OF THE 1 TO 3-P OPPOSITION HAS LITTLE OR NOTHING TO DO WITH BORN OR WORKING.
3. THE MAJORITY OF SOLDIERS AGREE THAT THE ARMY INVITES IMPROV OR LIMITED ITS EFFORTS TO GO AS FAR AS POSSIBLE.
4. SOLDIERS WANT INNOVATIVE, CHALLENGING AND MEANINGFUL TRAINING OPPORTUNITIES.
5. SOLDIERS AGREE THAT DYNAMIC TRAINING CAN PROVIDE A REMEDY FOR BOREDOM.
6. SOLDIERS WANT TECHNICALLY COMPETENT LEADERS FAMILIAR WITH THEIR OWN SKILLS WHO WILL ACKNOWLEDGE GOOD AND BAD PERFORMANCE.
7. FINALLY, ENLISTED SOLDIERS FEEL THAT INDIVIDUAL TRAINING SHOULD BE MANAGED PRIMARILY BY THE NCO CHAIN, OR THEY WOULD PREFER TO MANAGE IT THEMSELVES.

Results of recent Army-wide survey conducted by PACDA (Admin School).
Large sample size. Four div, two regt, CSS slice--both USAREUR and CONUS.



- Expansion of point number two on previous slide.
- Challenging individual training is central answer to this problem. Question is, who can manage this training? The battalion commander, his company commanders and S-3s are already too busy.
- The only answer is the NCO Corps. NCO must find the cracks of time available to soldiers and fill it with individual training.



- More from PACDA survey,
- Regardless of the grade of the soldier, the soldier generally wants to manage his training himself or to have his NCO manage it. Remember the "Bull's-eye" chart. He sees the rest of the Army through his squad and his squad leader so it is natural he wants his squad leader or team leader to manage his individual training.
- We need now to activate the NCO Corps and meet this demand.
- TRADOC has produced a job book to aid the NCO first line supervisors (squad and team leaders) in this responsibility. The small book has a list of Soldiers Manual tasks for each soldier under the NCOs direct supervision (i.e., squad leader carries a job book for each squad member). The book is used to track the status of individual job proficiency.

SM SQT SCHEDULE					
FY	77	78	79	80	
		CMF11 CMF16 CMF95	CMF83 CMF74		
		CMF78 CMF94	CMF13 CMF64		
			CMF19 CMF81 CMF82 CMF88	CMF12 CMF63	
			CMF97 CMF98	CMF27 CMF28 CMF57 CMF67	CMF51 CMF84
				CMF73 CMF71	CMF54 CMF81 CMF00
					CMF21 CMF79

*PROPOSED SOLDIERS MANUALS WILL BE DISTRIBUTED 6 MOS PRIOR TO SQT

- Now the entire training subsystem is based on the Soldiers Manual and SQT (Skill Qualification Test). This is the schedule the TRADOC will meet.
- Learning to use these training materials properly is almost a cultural problem. It will take time to educate the Army to exploit the potential of the system--maybe years.

EVALUATION

EXAMPLE: TOW (CONDUCTED BY INF SCH)

PROBLEM: IOAC & IOBC GRADUATES DO NOT KNOW HOW TO EMPLOY THE TOW.

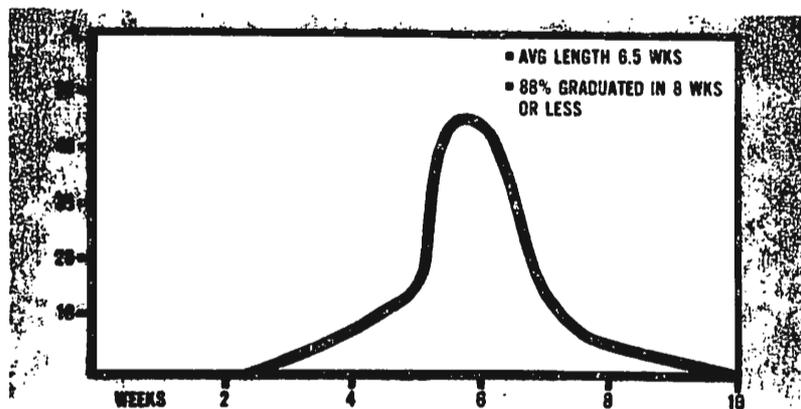
PROBLEM: TACTICAL DOCTRINE FOR TOW I.E. EITHER NOT YET CLEARLY UNDERSTOOD OR NOT DEFINITE.

PROBLEM: M70 TRAINER IS INADEQUATE.

PROBLEM: TRAINING AIDS FOR VEHICLE IDENTIFICATIONS ARE INADEQUATE.

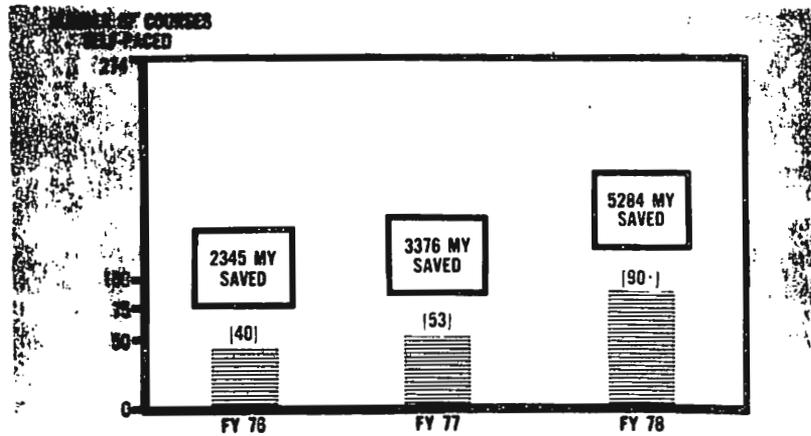
- Each school has an Evaluation Directorate. Their main mission is to find out how the system is working. Are the correct tasks listed in SM for a particular MOS or weapon system, does the training material help train for the critical tasks, how are soldiers doing, etc.? Meaningful evaluation takes place out at the user end. We need the help of the operating commands.
- This is example of an evaluation conducted by Infantry School on the TOW weapon system. What the school must do now is get at the officer training problem, begin a requirement for a better training simulator, etc. The Infantry School is working on all of these. You can see benefits of such feedback.

63B10 AIT - SELF PACING

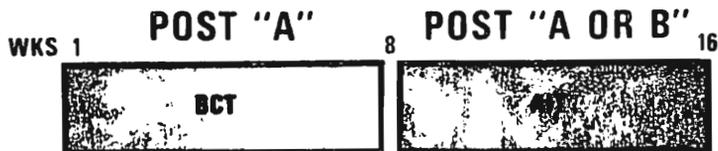


- Self-pacing is a training or instructional method which has been recommended by many academicians for over 15 years.
- Key element is time is not the controlling factor--student performance is.
- It is the way to go because it recognizes the center of the bull's-eye--the soldier. It turns him on to his own progress--commits him to success. It recognizes each soldier is different. Some can go faster and some slower.
- This curve shows the results of Wheeled Vehicle Mechanics AIT Course at Ft Dix. The normal course length was eight weeks. Most finish from five to seven weeks. But 12% took a little longer. But all are trained to same performance standards, and pass the same tests. Overall, the results show a training base reduction in the pipeline to the operating commands. The graduates are just as effective because they must show mastery of the critical tasks before they graduate.
- Other results are: (1) * higher soldier motivation and less incident rates and (2) instructional material available for export to Reserve Components and Active Army. In fact, recent data indicates drastic reduction in nearly all morale indicators.

TRADOC SELF-PACING PROGRAM



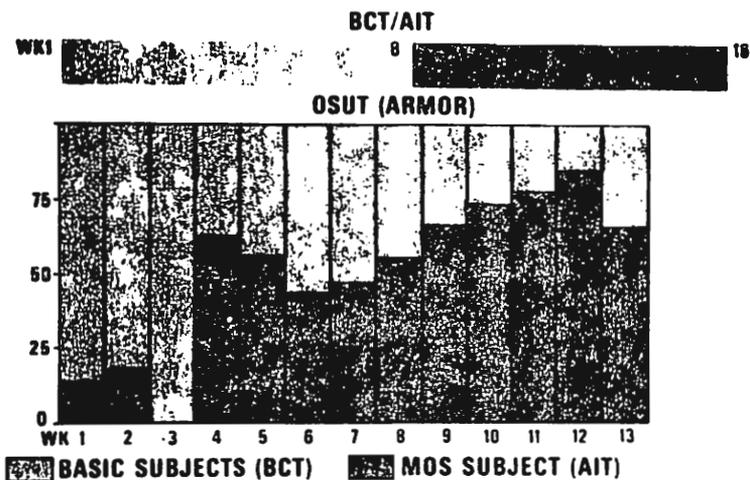
- Reflects TRADOC plans through FY 78. By 78 we hope to have 90+ courses or 33% of our courses self-paced.
- The numbers in boxes reflect pipeline savings to the Army in reducing training base time with same proficiency.



- ONE CO CMDR, 1ST SGT, DRILL SGT
- BETTER SCREENING
- BETTER INDIVIDUAL TRAINING
- LESS ADMIN TIME
- SAME PROFICIENCY

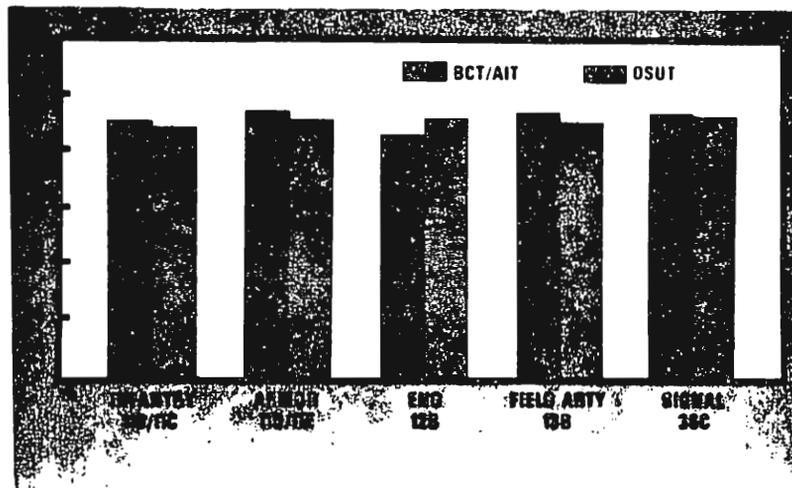
- Concept for OSUT versus BCT/AIT.
- Basic and common subjects normally taught in BCT are integrated with (AIT) MOS specific tasks. Soldier stays with one cadre throughout, so our screening for motivation, discipline is much better.
- In Armor OSUT, for example, the soldier is introduced to the tank on the first day. He doesn't first become a generalist (BCT) and then become a tanker (AIT).
- Presently we have Air Defense, Field Artillery, Armor, Engineer, and Signal converted to OSUT. We want badly to have Infantry OSUT at Ft Benning, but that decision has other political factors impacting on it.
- OSUT trains to same standards--tasks are the same, tests are the same, it's just more efficient.

SUBJECT (POI) INTEGRATION



- This shows the integration in Armor OSUT. Soldiers cover same training, take same tests.

PERCENT OF SOLDIERS PASSING CRITICAL TASKS AT FIRST ATTEMPT



- TCATA tested OSUT concept extensively. GAO recently reviewed.
- Again--can they pass the critical tasks? THAT is the measure. This shows no significant differences between BCT/AIT and OSUT.
- How "seasoned" the OSUT graduate is still a question. It is difficult to test and analyze--very subjective thing. But discipline problems are substantially lower in OSUT, and graduates took the same problems to the force.

COMBINED INCIDENT RATES

(NUMBER OF INCIDENTS PER 1000 TRAINEES DURING A CYCLE)

	BCT/AIT	OSUT
DISCHARGE	138.2	106.6
RECYCLE	68.1	69.3
DISCIPLINE	46.1	21.0
AWOL	35.4	8.1
SIGN CALL	2424.4	1889.2

CONCLUSION

** MORALE INDICATORS (INCIDENT RATES)
ARE SIGNIFICANTLY LOWER UNDER OSUT

- Same TCATA (MASTER) test, different perspectives.
- Better motivation and better morale.

**FIELD ACCEPTABILITY OF OSUT
GRADUATES (PERCENT)**

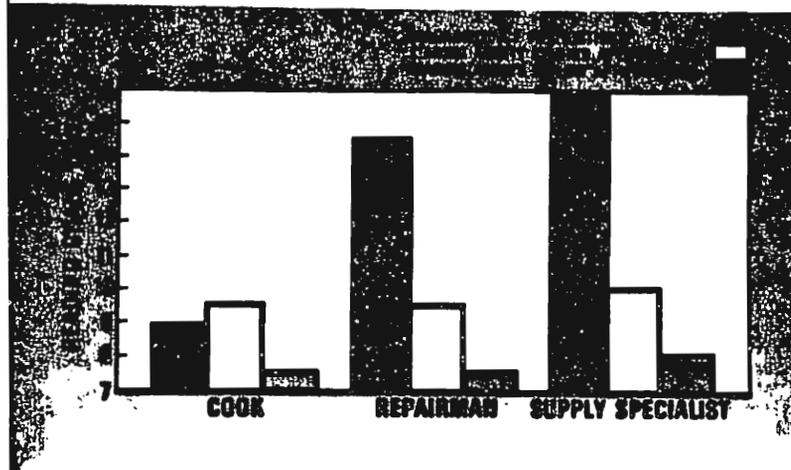
MOS	<u>1ST LINE SUPERVISORS</u>		<u>2ND LINE SUPERVISORS</u>	
	BCT/AIT	OSUT	BCT/AIT	OSUT
11B	87.8	88.7	88.5	87.2
11E	81.4	89.0	84.1	88.5
13B	81.6	81.2	80.7	77.6

CONCLUSION:

**OSUT GRADUATES ARE AS ACCEPTABLE (MOS PROFICIENT) TO THE
FIELD AS GRADUATES FROM CONVENTIONAL (BCT/AIT) PROGRAMS**

- Supervisors were asked after three to six months in unit to compare BCT/AIT and OSUT graduates on job performance.
- No significant differences.

READABILITY OF PUBLICATIONS VS. READING ABILITY



- Source: Sep 76 HUMMRO Report.
- Overall conclusion: Tech Manuals and Field Manuals are not readable to the soldiers who need them, except for cooks.
- Reading ability of job incumbents is below level needed to read manuals. True, regardless of low or high mental category soldiers.
- With 78 systems per man in the Army and with increased sophistication of our systems, the Army cannot afford to tolerate this bad situation.

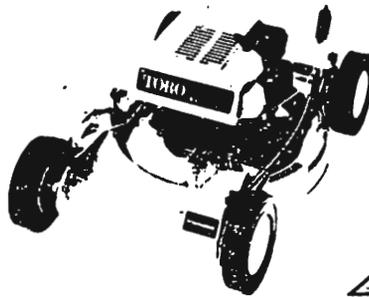
TORO

14	1/2 P	ANDOL 1	16275	400001	A, LP
14	1/2 P	MEDOL 1	16271	400001	A, LP
21	1/2 P	MEDOL 1	16132	400001	A, LP
21	1/2 P	ANDOL 1	16173	400001	A, LP
21	1/2 P	MEDOL 1	16246	400001	A, LP
21	1/2 P	MEDOL 1	16271	400001	A, LP

**OWNER'S
MANUAL****19" AND 21" WHIRLWIND
FINGERTIP START**

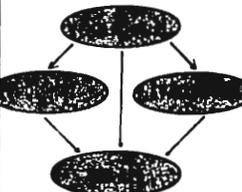
Congratulations on your purchase of a WHIRLWIND mower by TORO. It's the finest rotary mower available today designed and built for high quality grass cutting performance.

To assure maximum safety, optimum performance, and to gain knowledge of the product, it is essential that you or any other operator of the mower read and understand the contents of this manual before the engine is ever started. Pay particular attention to the SAFETY INSTRUCTIONS highlighted by this symbol. The symbol means CAUTION - personal safety instruction. Failure to comply with the instruction may result in personal injury.



- TRADOC and DARCOM have a solution--ITDT or Integrated Technical Documentation and Training, which is a better approach for Tech Manuals.
- Sort of like the TORO lawn mower set of instructions. Very simple language with lots of pictures.
- We need to field those complicated new systems in the 80's with ITDT and also redo the old TMs on the important systems already fielded.

ITDT

<p>IT'S SIMPLE</p> <p>PULL COTTER PIN A AND TURN NUT B COUNTER-CLOCKWISE</p> 	<p>IT'S A BIGGER ROLE</p> 						
<p>IT'S COST-EFFECTIVE</p> <p>REDUCES ERROR RATE 75% REDUCES SPARE PARTS DEMAND 30% REDUCES TIME IN TRAINING 25% REDUCES MANPOWER REQ 35%</p>  <p>OVERALL MTTR REDUCTION OF 40% VERSUS 150% INCREASE IN INITIAL COST</p>	<p>IT'S A PARTNERSHIP VENTURE</p> <p>DARCOM TRADOC</p>  <table border="1"> <tr> <td>FY 76</td> <td>30</td> <td>10</td> </tr> <tr> <td>FY 77</td> <td>30</td> <td>15</td> </tr> </table> <p>FOR BOTH FIELDED AND DEVELOPING SYSTEMS</p>	FY 76	30	10	FY 77	30	15
FY 76	30	10					
FY 77	30	15					

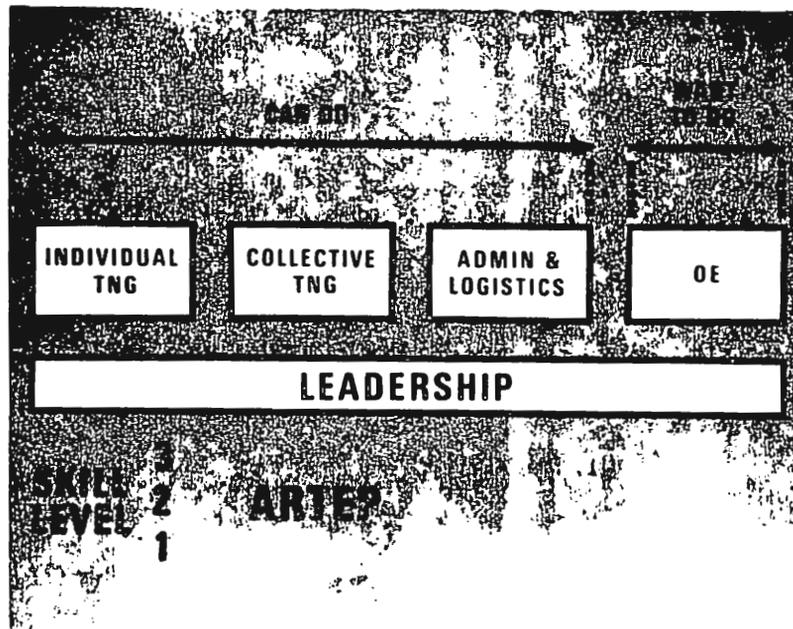
- Very simple, uses controlled language with diagrams.
- New TMs and the job performance aids which accompany them would be used for on-the-job training as well as an evaluation tool. Soldiers taking their SQT could take hands-on part of their test using the ITDT Tech Manual package
- Ninety DOD tests have shown that ITDT has a higher front-end cost, but that is overshadowed by savings in other areas. Look at the mean time to repair education-potential.
- TRADOC is in partnership with DARCOM on this.
- It is a very critical program from which the Army cannot afford to cut resources. GEN Deane supports the program wholeheartedly.

**SOLDIERS WANT LEADERS WHO ARE TECHNICALLY
COMPETENT, CERTAINLY TO THE EXTENT NECES-
SARY TO APPRECIATE THE SKILLS AND KNOWLEDGE
WHICH EACH SOLDIER BRINGS TO THE UNIT.**

**SOLDIERS FEEL LIEUTENANTS HAVE THE AUTHORITY
BUT LITTLE KNOWLEDGE OF THEIR ACTUAL JOB.**

**MANY JUNIOR OFFICERS DON'T KNOW THE BASIC
SKILLS OF THEIR OWN UNIT, YET THEY ARE SUP-
POSED TO MANAGE, ADMINISTER, AND SUPERVISE
THE UNIT.**

- These are very interesting comments. You realize it, your soldiers realize it. Now let me show you what TRADOC is doing about officer training.
- It has not been the policy of the Army to teach officers individual skills. We have been oriented toward the "officer and gentleman" syndrome and not specific skill accomplishment. But, as our Army progresses toward an equipment or capital intensive nature, we cannot afford this approach to officer training



This is the basic model we use in conducting our basic officer training. In teaching our officers the individual skills they need to know, we include the tasks of the skill level 1, 2, and 3 soldiers they will command. We don't tell them how to dig a foxhole, they dig one. . .and this is going on at Ft Benning right now. This is an integral part of their leadership training. An officer cannot be a leader unless he is proficient in these individual skills. Likewise, in the development of tactical skills, they are trained to ARTEP standards in both squad and platoon ARTEPs. Again, the attainment of these skills contributes to their leadership ability.

We also teach them how to maintain their equipment, how to resupply their soldiers, how their soldiers get paid, promoted, etc. Without all of these skills an officer cannot be an effective leader. . .he cannot do those things which must be done.

Then, we teach them many of the skills found in Organizational Effectiveness. We teach him how to communicate effectively, how to find and deal with the uncooperating members in the unit, how to make their unit do more effectively, those things which they must do.

This is the same concept that we are using in the teaching of leadership everywhere within TRADOC. Proficiency in the required individual and tactical skills is not only a prerequisite for, but is a part of, proficiency in leadership skills. Likewise, proficiency in the Administrative, Logistics and Maintenance areas is required for and part of proficiency in Leadership. Finally, teaching those skills required for Organizational Effectiveness is teaching Leadership. OE skills allow officers to diagnose the problems in his units caused by the fact that organizations are made up of human beings. After diagnosis, with the help of the school trained OE Staff Officer, can use some behavioral science techniques to solve the problem. These skill are also a part of leadership.

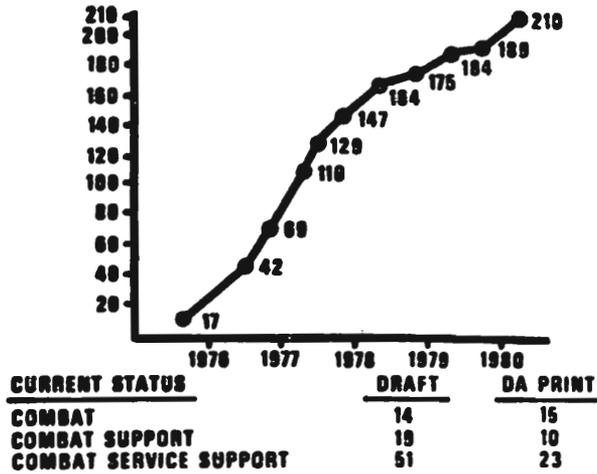
INDIVIDUAL/COLLECTIVE RELATIONSHIP

(SOLDIER'S MANUAL/ARTEP)

- If it is true that individual proficiency is necessary before high unit performance can be obtained, then the direct relationship should be definable.
- Example: Units can't pass ARTEP mission of squad and platoon recon unless soldiers can perform their land navigation tasks in SM.
- Units need to know these relationships in planning their training. Take an ARTEP mission of daylight attack and movement to contact. What are the individual tasks which must be attained in support of that mission?

CATB has designed a training management tool to aid in determining that interface to attain and maintain proficiency.

ARTEP



- Graph reflects ARTEP production rate for finalized ARTEP.
- Current status reflects number in draft and finalized print.
- Entire ARTEP program will have approximately 210 ARTEP; presently there are 137 in draft or final print.
- Test editions have been eliminated and should accelerate completion of the ARTEPs.

WHERE

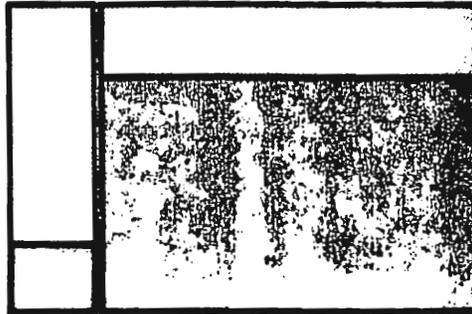
INSTITUTION

UNIT

WHO

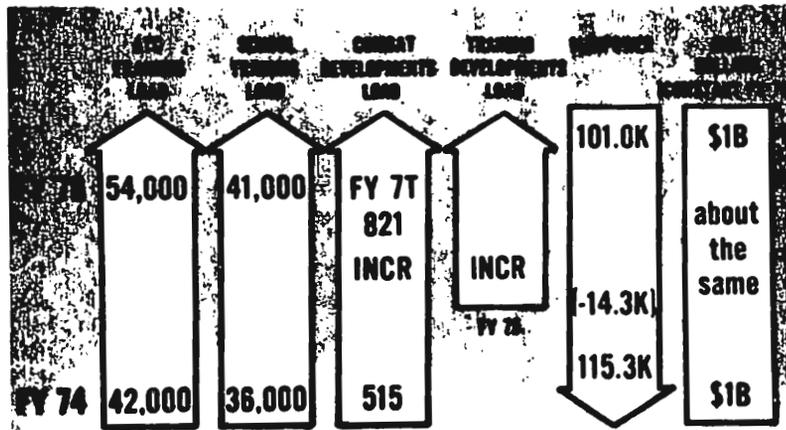
INDIVIDUAL

COLLECTIVE



- Depiction of where training takes place in our Army, whether individual or collective (unit, team, crew) training.
- Question is: How much of the area of individual training is TRADOC's and how much belongs to unit?
- It is a sharing process. The training system will allow the hatched areas to expand.
- Let's look at other factors which impact on the relative size of those areas: i e , who dies what, and describe some of the background necessary before making any decision in this area.

WORKLOAD / RESOURCE TRENDS



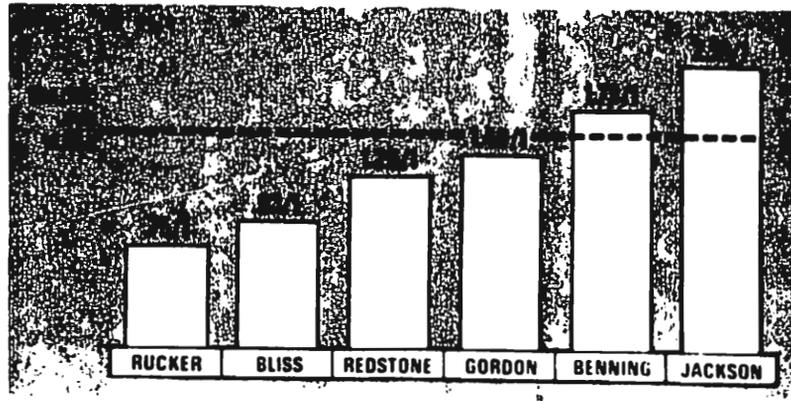
- From FY 74 to 78, all workloads in TRADOC have increased. Manpower and funds have decreased.

PRESSURE ON THE TRAINING BASE

<u>DATE</u>	<u>SOURCE</u>	<u>COMMENT</u>
MAY 70	NAC/GAO	• INEFFICIENT ROTC UNITS
JUN 70	NAC	• CURRICULUM REVIEW
JUN 70	NAC	• RECRUIT TRAINING BASE
JUN 70	GAO	• INTERSERVICE TRAINING
JUL 70	CARTER	• DOD WASTE (\$6-BILLION)
JUL 70	BROOKINGS INSTITUTE	• TRAINING COSTLY, STUDENT/ INSTRUCTOR = 1.5/1
JUL 70	KENNEDY AMENDMENT	• "PIPELINE"--ONE IN SEVEN
JUL 70	FOREIGN AFFAIRS	• STUDENT/ISON = 3 TO 1
JUL 70	DEMOCRATIC PLATFORM	• (SAME AS BROOKINGS)
		• ENLISTED TO OFFICER RATIO
		• TRAINING EFFICIENCY
		• COMBAT - SUPPORT RATIO
		• REVISION OF ARMY DIVISIONS?
JUL 70	CARTER (MEET THE PRESS)	• SUPPORTS PLATFORM
		• REDUCE DOD \$5-TO \$7-BILLION ANNUALLY
		• STUDENT/INSTRUCTOR INEFFICIENT
SEP 70	CARTER	• DOD WASTE -- 5% TO 6%

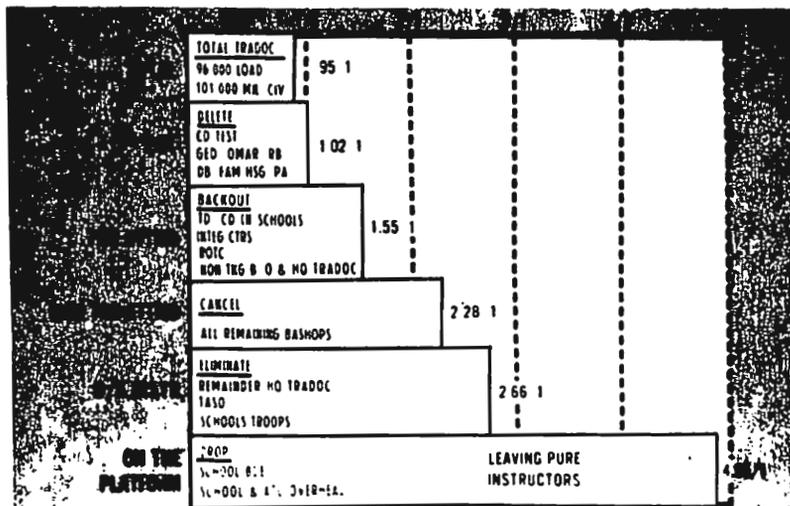
- Outside pressures on training base.
- Authors of much of this criticism will be part of new Administration.

TRAINING ATTRIBUTABLE INCL B D)
STUDENT INSTRUCTOR RATIO

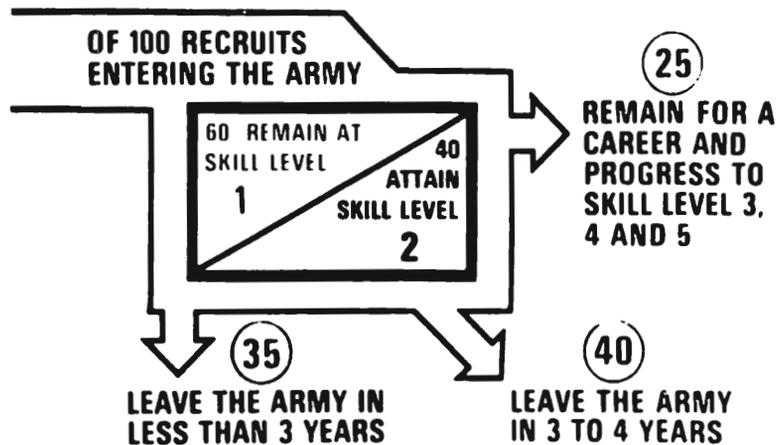


- Outside agencies are concerned about student/instructor ratios.
- Levels of training require different ratios. Pilot training needs at least a 1 on 1 situation. Infantry training obviously requires a higher ratio.
- Average ratio is 1.55 to 1 with some elements stripped out.

STUDENT TO "INSTRUCTOR" RATIO



- If everyone in TRADOC is included in student to "instructor" ratio, mixture appears to be rich. However, when only platform instructors are considered, a reasonable ratio emerges.



- We need to remember that we lose trained manpower constantly.
- Typical example of what happens to 100 recruits entering the Army.
- Only 25 remain for career.
- Question is--should we spend a lot of resources training soldiers for higher skill early in their careers or wait until we know the soldiers are going to reenlist?
- The "When to Train" question is usually not decided this way. It is determined by deciding when in a soldier's career a skill will be needed in his job. But advocates of lengthy basic training must consider what this slide depicts--and prepare for counter-arguments.

CHANGE IN COURSE LENGTH TO TRAIN TO SKILL LEVEL 1 AND 2

	PRESENT COURSE	NEW COURSE LENGTH	
		OPTION 1	OPTION 2
INFANTRY	12 WKS	22 WKS	31 WKS
ARTILLERY	12 WKS	16 WKS	31 WKS
ENGINEER	13 WKS	15 WKS	17 WKS
AVIATION	12 WKS	22 WKS	27 WKS
TRADOC	15 WKS	40 WKS	44 WKS
ARMY (SPL REP)	44 WKS	48 WKS	48 WKS
SPC (TRACK VEHICLE MECH)	21 WKS	22 WKS	22 WKS
MOS. (REP)	14 WKS	25 WKS	26 WKS

NOTE: OPTION 1 - TRAIN TO SKILL LEVEL 1 AND 2 IN HIGHEST DENSITY DUTY POSITION IN MOS (e.g., RIFLE SQUAD MEMBER FOR INF).
 OPTION 2 - TRAIN TO SKILL LEVEL 1 AND 2 IN ALL DUTY POSITIONS IN MOS (e.g., RIFLEMAN PLUS MACHINE GUNNER, APC DRIVER, DRAGON GUNNER, ETC.)

- These are two separate options which would increase the TRADOC role for individual training in the Army.
- Why are both to skill level 2? Because in a 3-year enlistment, a soldier will probably be placed in a skill level two position, e.g., a gunner in a tank.
- Considerable variation by MOS. Depends on task lists.

ADDED COST TO TRAIN TO SKILL LEVEL 1 AND 2

(OPTION 1: HIGHEST DENSITY DUTY POSITION ONLY IN EACH MOS)

	<u>OMA \$ (898)</u>	<u>CIV MY</u>	<u>MIL MY</u>	<u>STUDENT MY</u>
INFANTRY (11B, 11C)	\$12,000	450	1,500	5,200
ARMOR (11D, 11E)	800	30	100	300
FIELD ARTILLERY (13B, 13E)	7,000	250	900	3,000
AIR DEFENSE (16J, 16P)	500	20	50	200
TANK TURRET TECH (45K, 45N)	1,300	50	150	500
ORD MECH (63B, 63C, 63N)	4,500	140	500	1,600
RADAR REPAIR (24K)	100	10	20	30
MP (95B)	6,700	180	750	2,700
TOTAL	\$32,900	1,130	3,970	13,530

- Note there are wide variations in cost for different courses. Infantry is the most expensive.
- But TRADOC is not trying to "sell" the lower cost programs. Regardless of small cost, it would not be feasible to train certain tasks. If a soldier isn't going to use the task soon after BCT/AIT or OSUT, then why train him on it? Forgetting curve facts must be considered.

**ADDED COST
TO TRAIN TO SKILL LEVEL 1 AND 2**

OPTION 2: TRAIN ALL DUTY POSITIONS IN EACH MOS)

	<u>OMA \$ (000)</u>	<u>CIV MY</u>	<u>MIL MY</u>	<u>STUDENT MY</u>
INFANTRY (11B, 11C)	\$ 28,800	950	3,200	11,000
ARMOR (11D, 11E)	1,900	70	200	800
FIELD ARTILLERY (13B, 13E)	9,000	350	1,200	4,000
AIR DEFENSE (18J, 18P)	500	20	50	200
TANK TURRET MECH (45K, 45M)	1,300	50	150	500
TRK MECH (63B, 63C, 63H)	4,500	140	500	1,000
VEHICLE REPAIR (24K)	100	10	20	30
REP (05B)	6,700	100	750	2,700
TOTAL	\$ 53,800	1,770	6,070	20,800

- This is the option to train everyone in every job he or she may get through grade E-5.
- Facts:
 - 1) It is expensive to increase individual training in TRADOC.
 - 2) There are factors which argue against increased institutional training-- internal Army factors and outside criticism.
- But the system that has been developed will allow a change or an increase for TRADOC.
- The high command of Army and major commanders must decide if the system is in proper balance. A staff agency in the Pentagon which concerns itself with individual training in units would be helpful in determining this balance. DCSOPS has unit training; DCSPER has institutionalized training, but which staff has individual training that goes on within units? Over 90% of individual training occurs in the unit now.
- Regardless of whether it is cost-effective to teach tasks in an institution or not, we should ask our commanders which tasks must be taught in our institution before a soldier assumes a job in a unit. If they say it is intolerable not to teach certain tasks, then we will try to find a way.

OTHER COSTS OF TRAINING SKILL
LEVEL 1 AND 2

<u>EQUIPMENT</u>	<u>OPTION 1</u>	<u>OPTION 2</u>
TANKS	+75	+137
APC	+84	+252
HOWITZER	+504	+1,109
CONSTRUCTION ^y	\$200 M	\$290 M

^y INCLUDES BARRACKS ONLY

- Previous slides did not include these costs for key items of equipment or MCA.

"TRAINING WORKLOAD IN AIR FORCE

TRAINING COMMAND:

- TRAINS ALL FOR 6 WEEK BASIC.
- TRAINS 60% OF AIT.
- PROVIDES TRAINING MATERIAL FOR REST.

MAJOR COMMANDS:

- TRAINS 20% (10,000) OF AIT IN OJT / CORRESPONDENCE MODE.
- TRAINS ALL SKILL PROGRESSION USING OJT / NCO ACADEMIES (82,000 AT ANY ONE TIME).

BASE COMMANDS:

- TEACH NCO LEADERSHIP COURSES.

BOTTOM LINE:

- LOAD ON UNIT'S BACK.
- RELY HEAVILY ON OJT / CORRESPONDENCE COURSES.

- Bottom line: Training Command of the Air Force shares much less of the individual training responsibility than does TRADOC for the Army.
- After basic and AIT, the load falls heavily on the operating commands.
- Finally, TRADOC desires the concurrence of the high command of the Army in the individual training responsibilities in their present balance. But if the loads are changed, the fulcrum must shift so that resources are reallocated.
- Once the balance is agreed to, then we need to stop "grumbling" about it.