The Fourth Revolution—Hyper-learning

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I N THE NOVEMBER-DECEMBER 2013 Military Review article "Leader Preparation to Support Rebuilding," I discussed the development, over the past 30 years, of several parallel development paths of both the Army Training System—"hard power"—and generic Teams of Leaders—"soft power." I believe the performance potential of *Teams of Leaders (ToL)—Information Management (IM) X Knowledge Management (KM) X High Performing Leader Team (HP LT) building* is equal and perhaps greater than the improved performance achieved routinely by the *Observer Controller (OC) X Opposition Force (OPFOR) X After Action Review (AAR) X Instrumentation System (IS) paradigm* of the highly successful Army Training System.

I sense that the accelerating impact of both has generated a Fourth Revolution (4R)—"hyper-learning"—the product of the Army Training System (summarized as Combat Training Center [CTC]) multiplied by ToL [IM and KM supporting shared skills, knowledge, attitudes [SKA] generating then sustaining high performing leader teams [HP LTs]).

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Hyper-learning has several important, expanding Fourth Revolution (4R) applications:

● Hyper-learning stimulated and supported across various borders of human organization.

● Advantaging the expanding explosion of social networking.

● Increasing significantly the intensity of learning processes.

All advantage the successes of the three preceding "revolutions" in Army learning over several decades.[1]

Foundational Forces of 4R

The foundational forces of 4R hyper-learning are based on integrated learning environments and high performing leader team building.

Framework. The Army Training System framework is represented by CTC mission readiness practices embedded in America's Army learning performance to standard, effective mentoring, and 360 performance effectiveness reviews. The CTC practices today are the application of effective learning to shared task, condition, standard (TCS) accomplished by simulations supported by observer/ controller/trainers and focused by structured situational training exercises (STX)—all accomplished and sustained through the conduct of after action reviews (AARs). This effective process is the CTC development model.

Teams of Leaders. ToLs improve performance by developing shared SKA across borders through combining information management (IM), knowledge management (KM), and leader teams (LT) sustained by conducting leader team exercises (LTXs). This process is the ToL development model.[2]

Sharing, knowledge, and understanding. The generation of environments of informal sharing of data, information, knowledge, and understanding right, left, up, and down within organizations stimulates good ideas, collaborative "murder boarding," merges address books, and creates adaptive workarounds within leader teams performing consistently to TCS across all borders. CTC x ToL advantages U.S. national strengths. These strengths include Yankee initiative seeking better ways and increasing near-compulsive social networking leveraging IM/KM enabling learning distance and time requirements to approach zero while sharing SKA across most borders of human interaction.

Essential TRADOC proponent support. Various Training and Doctrine Command Centers of Excellence (Proponent) operations provide general support developing and sustaining doctrine, training, leader development, organization, materiel, personnel, and facilities (DTLOMPF) capabilities in individuals, teams, and units. This stimulates development of desired combinations of CTC "hard" and ToL "soft" power embedded in mutually supporting high performing leader teams.

Developing Military Readiness

The central 4R insight is that the CTC and ToL development models are two sides of the same coin—development of military readiness. Teams of Leaders and CTC reinforce and multiply the effectiveness of the other across combined arms maneuver (CAM) and wide area security (WAS) operations. This is a wholly positive relationship tentatively described as "hyper-learning" now available to support America's Army.

Tasks, conditions and standards. TCS is a fully assimilated prescription of explicit, replicable, verifiable, learning performance requirements. TCS is a keystone process enabling consistent, uniform, assessed performance to standard across

"Hyper-learning"—reinforcing processes

CTC Development Model		*ToL Development Model*
TCS objective	comparable to	SKA objective
AAR process	comparable to	LTX process

Leader-Team Exercise (LTX) Framework

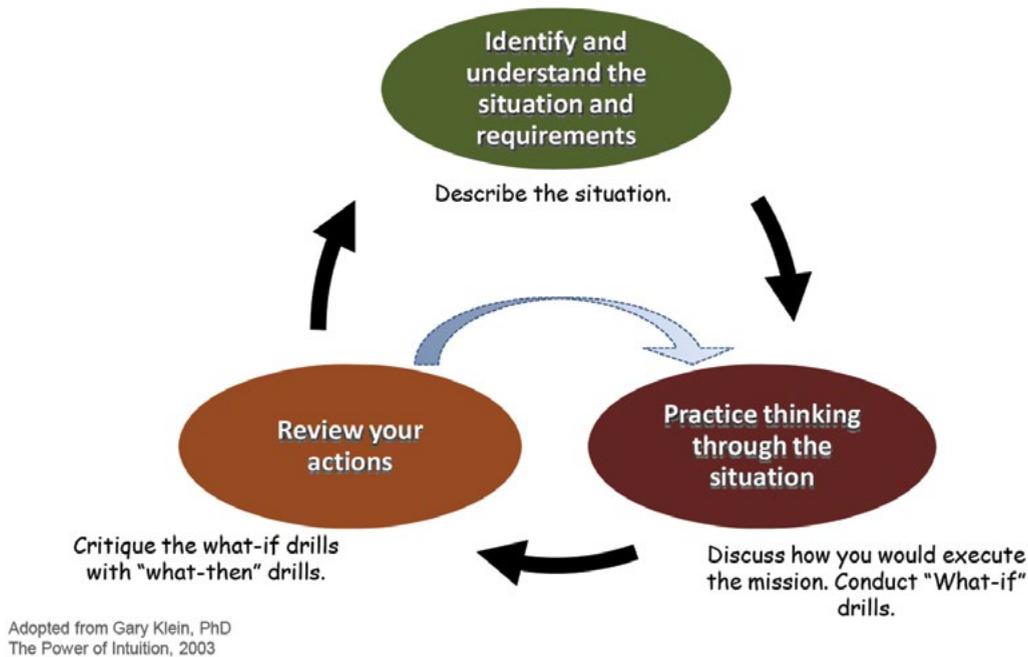Adopted from Gary Klein, PhD
The Power of Intuition, 2003

Figure 1

America's Army—in a nation, state, federal republic, democracy, and continent. It is the abiding enabler of the unique global national power of absolute diversity, personnel utilization wholly based on demonstrated competent performance to standard—not to particular race, sex, religion, or sexual practice. There are no limits to acquiring the best personnel!

Skills, knowledge, and attitudes. SKA are associated with shared purpose (vision), shared trust, shared competence, and shared confidence combine to generate and sustain high-performing teams of leaders (HP LTs) "teamed" across all borders of human endeavor. Diverse leader teams sharing SKA supported by IM and KM become ToLs supporting "winning" leader relationships across joint, interagency, intergovernmental, and multinational (JIIM) capabilities—a precondition to fully effective combined arms maneuver and operations.

After action review The AAR is an individual, team, and unit review and analysis of the effectiveness of performance across all levels of responsibility. The mentored AAR embeds candid professional review combined with collaborative development of corrective actions. Juniors review mission performance interactively, both bottom up—selves, peers and seniors— and top down—the chain of command. The AAR is fully institutionalized as a positive, accepted, corrective "360" for TCS performance.

Leader team exercises. The LTX is the "driver" that propels and accelerates the team of leaders though the natural team development stages, helping it achieve the high-performance characteristic of shared SKA, exhibiting actionable understanding more quickly. Leader team exercises, grouped or distributed, independent or coached, are the generator of positive interpersonal relationships. They are the "lifeblood" of ToL. They are surprisingly simple iterative discussions conducted by candidate leader teams and structured shown in figure 1.[3]

A convergence of major forces. In sum, the Fourth Revolution is the convergence of two mutually supporting major forces. They are very effective for learning to standard and generating high performing leader teams across borders. Both combine to promise profoundly positive increases in U.S. national military readiness. The product is extraordinary due to the remarkable potential of "hyper-learning."

"Hyper-learning," in this context, influences both the process of learning generation itself and the resultant end state capabilities. "Hyper" is a significant increase in the rate of learning (through training, education, and experience) to a higher-level actionable understanding of content. This occurs when the advantages of the World Wide Web and cross-border teaming are shaped while the shared SKA of high-performing leader teams are developed.[4] The process develops an ability to "predict" likely outcomes by drawing on the high performing leader team's "insights." This is not a Zen-like state but rather it reflects advantaging the escalating performance potential of CTC x ToL and then applying that performance for practical purposes. Advantaging the strengths of each, the result is the ability to adapt to anticipated as well as unpredicted change for individuals and teams. Sustainment is possible as long as that particular high-performing leader team is stable!

Personnel stability within the team directly affects the performance of the leader team. If leader teams are not stable, the necessity of repetitive LTXs conducted to regenerate basic leader teams' shared SKA increases. Even more are required to generate and sustain high performing leader teams.

Think LTX practice as commonly as you now think AARs. If leader teams are stable, performance improves, resulting in increased competence and confidence gained through advantaging shared SKA. However, without leader team stability, it is very difficult to sustain high performance within that leader team. Therefore, it is essential to track stability of key leader teams. When leaders turnover, LTXs with new leaders are necessary to develop or retain high performance. This improves the unit's efficiency and effectiveness! The cost may be perceived as an unwelcome learning requirement, but it is worth it because the LTX generates high leader team performance comparable to the agreed utility of the AAR.

Therefore, it is essential to have a "hyper-learning" "plan B" available when key leader teams are not stable. One way to address loss of capabilities when important leader teams change composition could be to develop and establish shared high-priority leader team tasks to be trained and shared SKA to be developed. This may appear difficult, but consider embedding ToL development processes to become as routine as AARs of the CTC process are today.[5]

Exploiting New Opportunities

The bottom line is that exceptional individual, team, and unit performance stimulated by CTC x ToL interactions is clearly feasible—

● As leader teams are identified and prioritized.

● Through proper execution of the CTC model—multiple iterations executed crawl, walk, run with solid AARs, conducted by proficient observer/controller/trainers.

● When the LTX process is routinely practiced developing shared SKA, increasingly shared across multiple borders, thereby expanding beneficial effects as performance improves.

That is the rationale for the Fourth Revolution hyper-learning. There seems to be multiple ways to apply good ideas created by readers. One way might be to build JIIM leader teams as was done in European Command. Another might be focused officer and non commissioned officer professional development tailored to fill in leader team experience gaps created by assignment patterns during the past decade. A third could be support to improve garrison life through building satisfying, productive service for the whole Army family—the mainstay of continued service. Yankee initiative will mold more applications across America's Army—extending the Fourth Revolution.

Now, to stimulate thought, I suggest three generic application opportunities—Eliminate traditional constraints, accelerate professional social networking, and expand distributed intensive learning.

Eliminate traditional constraints. Advantage IM, KM and aggressive "digital natives" to eliminate traditional constraints to human interactions such as distance (physical separation), time (prior mission relevant experience), and various borders (venues, domains and boundaries) in building shared SKA.

A near compulsive human urge seems to exist to communicate, both stimulated and enabled by the worldwide web.

"Digital immigrants" contrasted with "digital natives" as described in 2003 has now morphed a decade later into a generation of seasoned "digital natives" and now, to those who are increasingly "digitally dependent." They are practically addicted to social networking whenever, wherever, for many purposes. Social interactions such as

development of shared SKA seem increasingly advantaged by these digital social media interactions, by the actions of the "digitally dependent." This seems particularly the situation today for Millennials. As IM and KM capabilities increase exponentially, there seems to be near unlimited capabilities and opportunities to develop shared information, knowledge, and understanding within leader teams. Many of these leader teams become high performers across borders of domains, venues, and boundaries. Each border crossed can generate unanticipated effects just as ripples from a stone dropped in a pool of water can multiply effects.

Essential professional practices stimulating routine communications across borders are embedded in the structure of America's Army, including Active, National Guard, and Army Reserve as well as joint and intergovernmental. That aspect is not new. What is new is serious, purposeful, broadening of collaboration to build high-performing leader teams drawing on the learning power of the ToL development model across all borders now added to the CTC development model.

Discussed below are various borders of important human interaction and their "crossings." Each is defined as follows:[6]

● **Venues.** "The scene or locale of any action or event."[7] Leader learning (training, education and experience) venues are individual, team or collective in institution, self-development or unit."[8]

● **Domains.** "A field of action, thought, influence, realm, or range of personal knowledge."[9] Domains for Teams of Leaders development and sustainment are Information Management, Knowledge Management, Leader Team Development, and Domain Integration. The paradigm visualization is the ToL "stool."[10]

● **Boundaries**. "Something that indicates bounds or limits."[11] Boundaries of human interaction considered are organizational structure, functional purpose, level of governance, and encompassing social culture.

Borders are crossed in full realization that there seems to be exponential growth in social interactions across all borders—that is, venues, domains and boundaries, as well as directly influencing the ranges of IM and KM effectiveness. Every part of the ToL development model is profoundly changed. "Millennials" emerge as much more than generation Y "digital natives." They are increasingly digitally dependent with expectations that resistance to crossing the various borders of human interactions will effectively disappear—for better or worse.
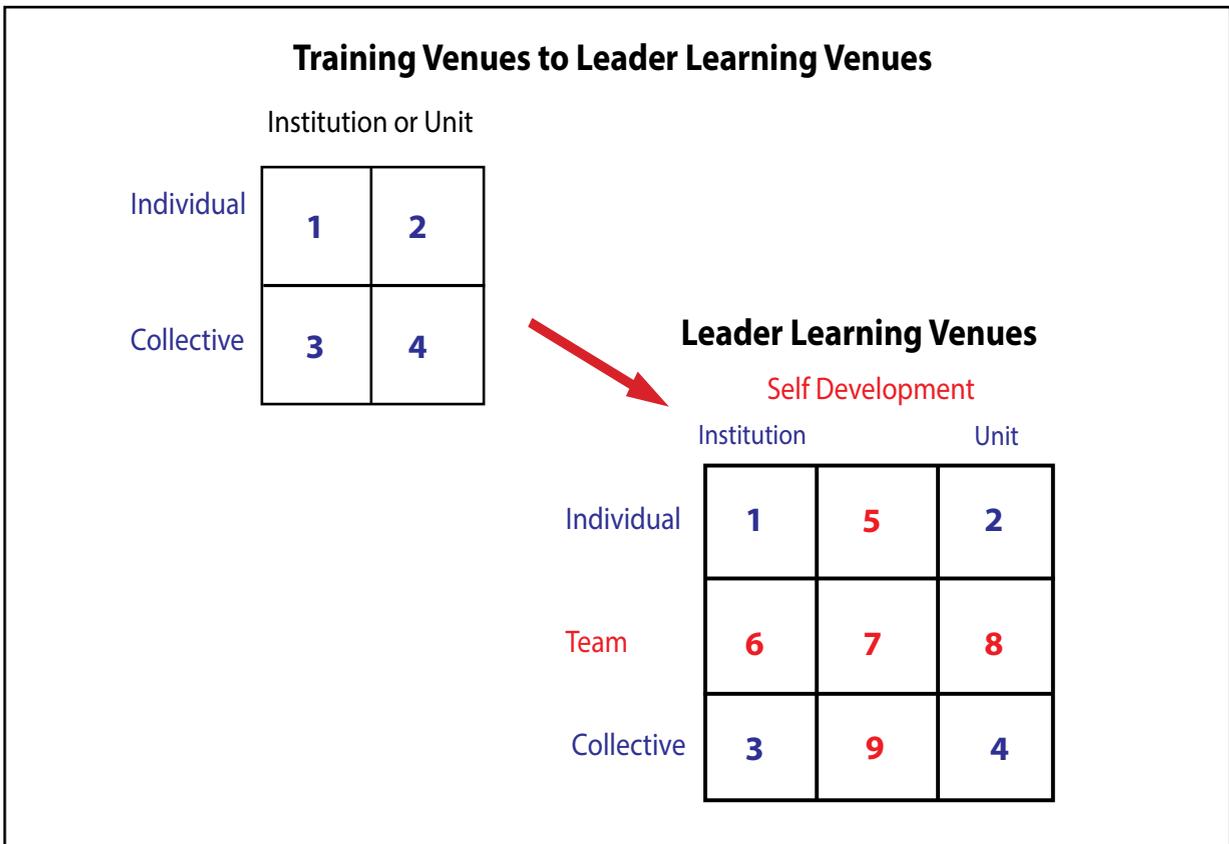
In sum, perhaps a revolution in learning stimulated by global communications (www, icloud, and Siri-like knowledge generation) could anticipate and virtually eliminate distance, time, and various borders of personal interactions. That is, there can be near unlimited opportunities to create leader teams across previously uncrossed borders to improve individual and grouped human performance. This suggests the presence of a new Fourth Revolution learning world!

To observe more closely, apply distance, time, and borders approaching zero to each of nine venues of the "Third Revolution." Apply the developmental model of ToL, including the collective domain existing in organizations subject to organizational bureaucratic boundaries. No case is intended to be conclusive. The purpose is to portray some potential impacts of hyper-learning and the learning opportunities and challenges associated with each of the various combinations and permutations of borders crossed. Digital natives and growing digital dependents seem certain to develop many more.

1. Individual in Institutional. Understand and practice ToL requirements and opportunities specifically collaborating to develop leader teams with shared SKA within and across various borders. Understand requirements and the processes to develop both "hard" TCS and "soft" SKA proficiencies in self and others. Practice simulations and gaming to intensify all learning processes by drawing on CTC learning processes. Practice developing high-performing, global, relationships (shared SKA) routinely, by drawing on various current KM professional forums.

2. Individual in Unit. Apply individual LTX competencies to build shared SKA while applying the CTC development model supporting unit mission performance. Practice learning from experiences of predecessors in current position through LTXs developing shared SKA.

3. Collective in Institutional. Generate mentor export of learning collective "hard" and "soft"

Training Venues to Leader Learning Venues

Institution or Unit

Individual	**1** **2**
Collective	**3** **4**

Leader Learning Venues

Self Development

	Institution		Unit
Individual	**1**	**5**	**2**
Team	**6**	**7**	**8**
Collective	**3**	**9**	**4**

competencies, drawing on ToL and CTC development models to develop shared SKA and TCS appropriate to successful unit mission performance. Achieve through virtual and constructive simulations and games, mentored and assessed by distributed CTC expertise.

4. Collective in Unit. Develop collective task competencies to apply CTC and ToL development models through leader teams generating TCS and SKA drawing on AAR and LTX processes across various borders.

5. Individual Self-Development. Conduct self-study to improve individual competencies to conduct LTXs developing shared SKA across venues and to conduct AARs to develop TCS.

6. Team in Institutional. Learn and practice processes for generating and sustaining both ToL and CTC development models, grouped and distributed.

7. Team in Self-Development. Practice LTXs to generate HP LTs across all borders, particularly boundaries of organization, function, level, and culture.

8. Team in Unit. Generate vertical and horizontal HP LTs within units and across various borders. Apply the ToL development model as well as the CTC development model coached and assessed in CTCs or as distributed for platoon, company, battalion, and brigade level units and potential JIIM associations. Prioritize down to support regionally aligned force requirements.

9. Collective in Self-Development. Applied in distributed structured learning exercises such as situational training exercises or fire coordination exercises enabled by live, virtual, constructive, or gaming simulations. CTC institutions teach and develop ToL development model process.

Accelerate professional social networking. Stimulate structured professional forums (SPF) across Army total force and JIIM advantaging HP LTs sharing SKA, increasing security through shared trust, and understanding through shared knowledge advantaging address books, workarounds, and Yankee initiative[12].

security precedents now applied and reinforced through ToL. The greater the previous relationships evidenced by the presence of shared SKAs, the more rapidly "new" HP LTs should be grown through LTXs drawing on pre-existent shared trust and shared respect for competence. Add shared new purpose then high performance generates rapidly with added confidence. Now add address book contacts and workarounds. To rebuild LTs despite turnover of personnel, draw upon existent general SKA already shared throughout the personnel turnover.

Expand distributed intensive learning. Expand distributed intensive learning processes by using common scenarios and structured exercises developing shared SKA and TCS proficiencies. Drawing on distributed CTC and TOL development models—learning by sharing and doing—to intensify Fourth Revolution learning processes.

New learning development appears necessary for CTC-ToL combinations. Include exercises building CAM-WAS and CTC-ToL variable combinations to be applied as leader teams turnover. Current Army guidance is excellent but incomplete.[15] A "best" learning sequence may be ToL to stimulate the shared SKA of HP LTs then application of the CTC development model. HP LT can act as a process multiplier causing faster progression of structured TCS to mastery competency levels.

The rate of learning itself accelerates through developed cultures of expanded sharing. That is collaboration crossing borders stimulating development of HP LTs. The likely effect is to transmit improved learning processes and paths across all learning venues and boundaries. An appropriate objective could be habitual cross-venue and cross-boundary collaboration exploiting leader teaming embedded in America's Army learning culture, spreading in time to JIIM.[16]

In sum, stimulate focused collaboration particularly top down as well as bottom up to encourage policy and program innovation. Then institutionalize success with adaptive learning support combining CTC and ToL development models. Draw on proven, fielded, learning successes. Train both ToL and CTC processes in institutions. Stimulate bottom up "Millennial" contributions!

TRADOC Proponents establish new-shared learning opportunities increasing cross-border relationships.[14] Reinforce associations generated through expanding social networking by conducting LTXs to expand shared SKAs. The effect is to transmit improved learning processes and paths across all learning venues and boundaries through social networking to create habitual practices of cross-venue collaboration.

Build LTX practices into various social networking venues to increase cross border collaboration with operational security increased thru shared SKA structured to support "trust but verify" practices. Draw on nuclear "double key"

U.S. Army Spc. Josh Kruger, with the 55th Signal Company (Combat Camera), participates in the after action review during an exercise at Fort Indiantown Gap National Guard Training Center, Pa., 3 May 2011. (U.S. Army, Spc. Kevin Hulsey)

"A Way" to Fourth Revolution (4R) Implementation

Review training development and training support required to advantage the new opportunities of "hyper-learning" and the growing challenges of cyber operational security dysfunction. Institutionalize shared SKA formation by leader teams drawing on LTXs.

Encourage incessant practice of AARs and LTXs across all borders. Reward cultures of shared ToL and CTC development model practice.

The critical path will be incorporation of integrated mutually-supporting CTC and ToL development models in pre-command courses and officer and NCO leader professional development policies and programs.

Summary

The Fourth Revolution "hyper learning" is the convergence of two major forces. They are effective learning to standard and generation of high-performing leader teams across borders. Both combine to promise profoundly positive increases in U.S. national military readiness led by America's Army.

We described several important expanding applications. You, the readers, will suggest, share, and then apply better applications for America's Army. *You*—that is what The Fourth Revolution "hyper learning" is all about! *MR*

--- NOTES ---

1. Frederic J Brown, "Three Revolutions: From Training to Learning and Team Building," *Military Review* (July-August 2003): 56-61. For precedent Fourth Revolution insights, see 60-61.

2. Ibid, 59-60.

3. EUCOM Teams of Leaders Coaching Guide. Diagram Leader-Team Exercise (LTX Framework), EUCOM Stuttgart, Germany, 3 March 2009, 11.

4. Frederic J. Brown, "Leader Preparation to Support Rebuilding," *Military Review* (November-December 2013): 42.

5. The CTC process was perceived as "a bridge too far" in the early eighties but the evident increase in readiness "sold" the process.

6. Websters Encyclopedic Unabridged Dictionary of the English Language, 1989.

7. Ibid, 1586.

8. Brown, "Three Revolutions: From Training to Learning and Team Building," 58.

9. Webster, 424.

10. Brown, "Leader Preparation to Support Rebuilding," 6.

11. Webster, 174.

12. Process explained when discussing the "seat" in Brown, "Leader Preparation to Support Rebuilding," 9.

13. Not to be confused with the Operational, Institutional, and Self-development Domains including Education, Training, and Experience of Army Leader Development, Army Leader Development Strategy 2013 Way Ahead, VGT 3.

14. AR 5-22, The Army Force Management Proponent System, 25 March 2011. Para 4f(1) Proponents "Execute force management responsibilities (requirements definition, force development, combat developments, doctrine developments, training developments, materiel developments, leadership development, and education, personnel developments, and facilities developments) relative to DOTMLPF for their particular function or branch".

15. Learner-Centric 2015 Learning Environment, VGT 4, Army Learning Model 2015 CAC LD&E 12/2012. Includes "Blended Learning" "Technology Based Delivery with Facilitator in the Loop," all excellent Doctrine Tactics Techniques Procedures (DocTTP) but incomplete as the primary focus is individual development and performance. See "The Leader Challenge Approach," *Army*, June 2013, 55-60. "What now Leader" represented in Leader Challenge Workshops is one LTX "a way" addressing 4R learning process.

16. For an excellent discussion of the potential requirements for expanding Leader Teams, see Gen. Keith Alexander, "The Army's Way Ahead in Cyberspace," *Army*, August 2013, 23-25